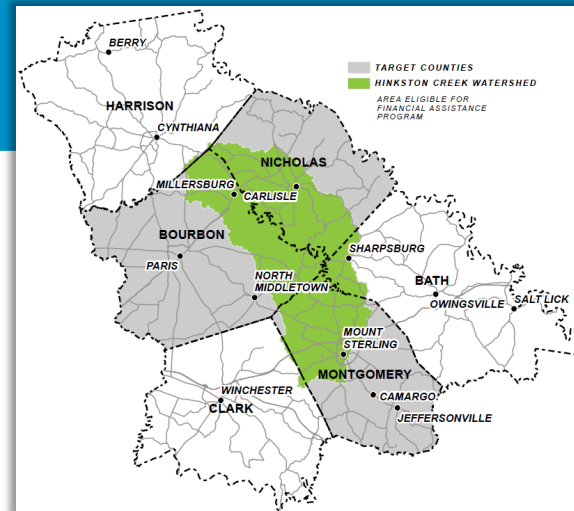


# HINKSTON CREEK WATERSHED STAKEHOLDER MEETING

November 8, 2019  
Neal Welcome Center



# AGENDA

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1. Introductions
2. Watershed Overview
3. Review of Improvement Efforts
  - Watershed Based Plan Development and Implementation
  - Conservation District State Cost-Share Projects in Bourbon County
  - Septic and Riparian Buffer 319 Watershed Improvement Projects
  - Conservation District State Cost-Share Projects in Nicholas County
4. Current Water Quality Data (LRWW)
5. Open discussion of goals, focus areas for the future, idea sharing, etc.

# STAKEHOLDER ROLES

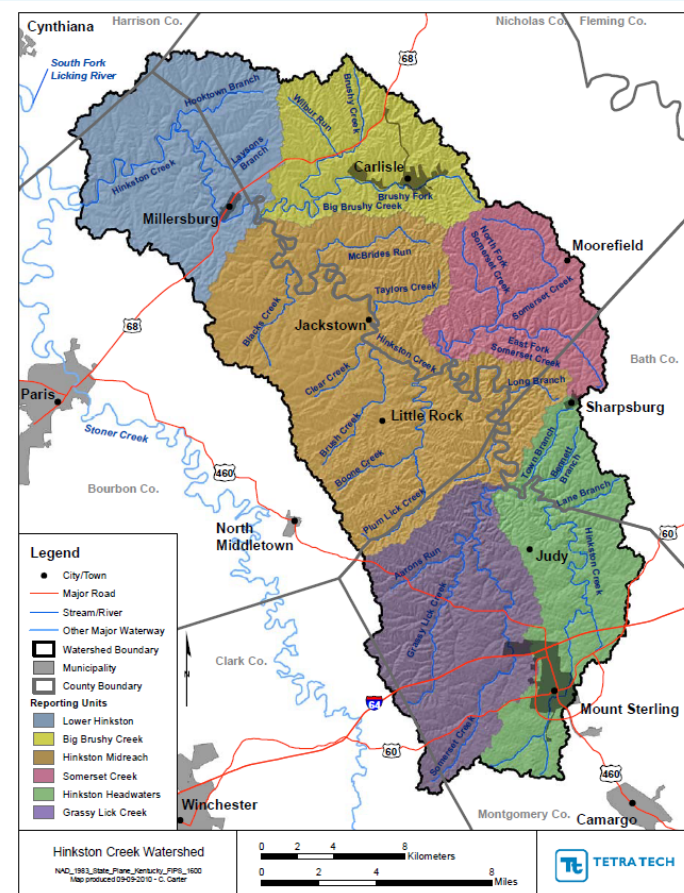
## GOALS OF THE STAKEHOLDER GROUP

1. Improve water quality in the Hinkston Creek watershed
2. Identify areas of concern and provide input on watershed problems and management strategies
3. Foster partnerships and collaboration
4. Help with community education and outreach



# WATERSHED FACTS

- 260 square miles
- Land Use/ Land Cover: Rolling pasture-land
  - 70% pasture/ hay/ fallow fields
  - 20% forest/ shrub
  - 7% low intensity development
  - 2% cultivated crops
  - 0.5% high intensity development
  - 0.2% open water/ wetlands
- Joins Stoner Creek in Ruddels Mills to form the headwaters of the South Fork of the Licking River





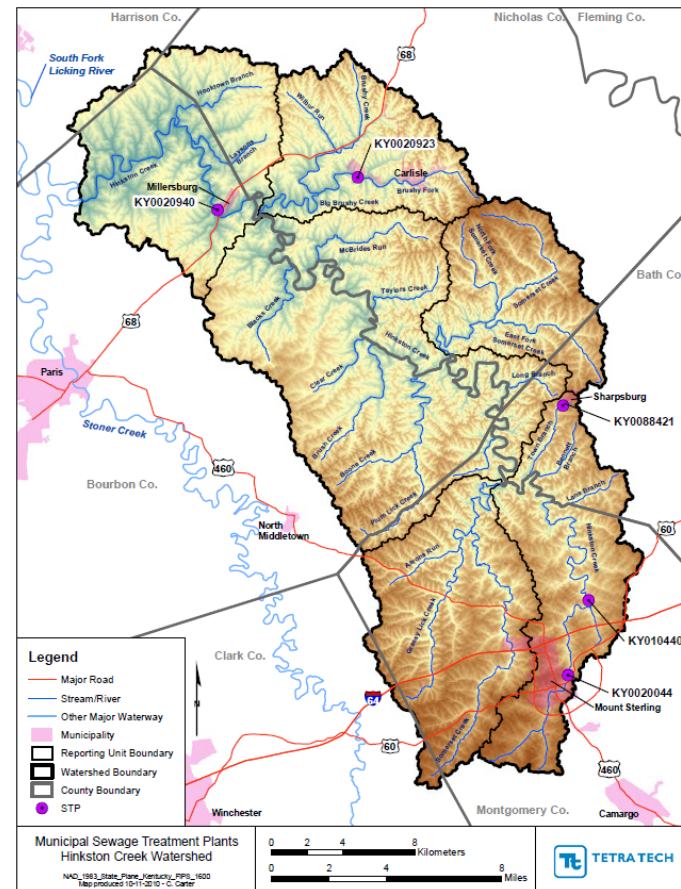
# WATERSHED FACTS CONT.

## Water Withdrawals:

- Carlisle Water Department
- Millersburg Municipal Water Works

## Permitted Discharges:

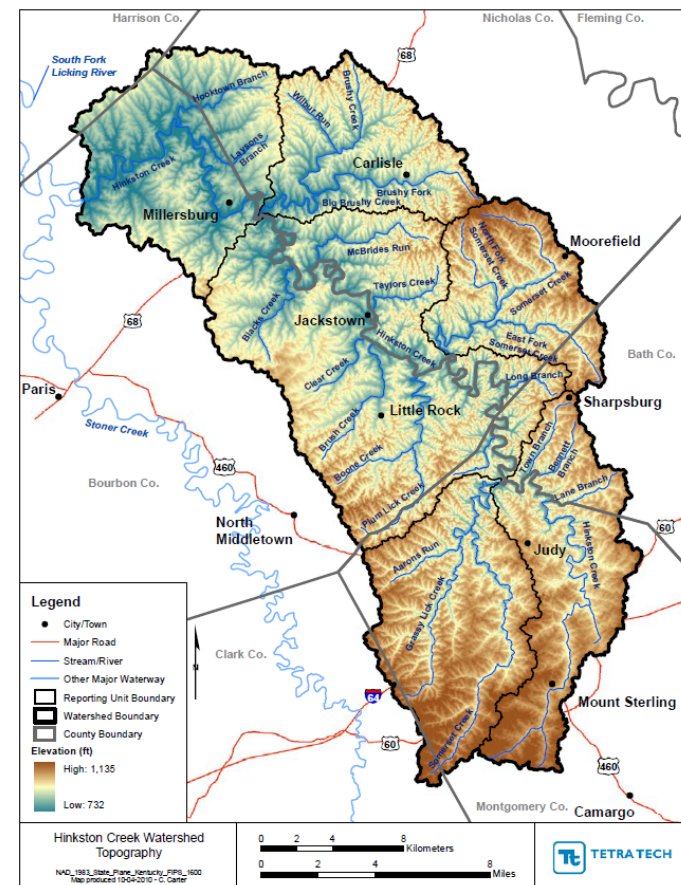
- Carlisle STP
- Millersburg STP
- Sharpsburg STP
- Mt. Sterling STP
- Construction/ Industrial Stormwater Permits



# WATERSHED IMPAIRMENTS

## Nonpoint Source Pollution:

- Agriculture
  - Topsoil wash off
  - Fertilizer/ pesticide runoff
  - Improperly managed livestock waste
- Failing Septic Systems
  - Malfunctioning septic systems
  - Straight pipes
- Urban Runoff
  - Impervious surfaces
  - Construction/ Residential



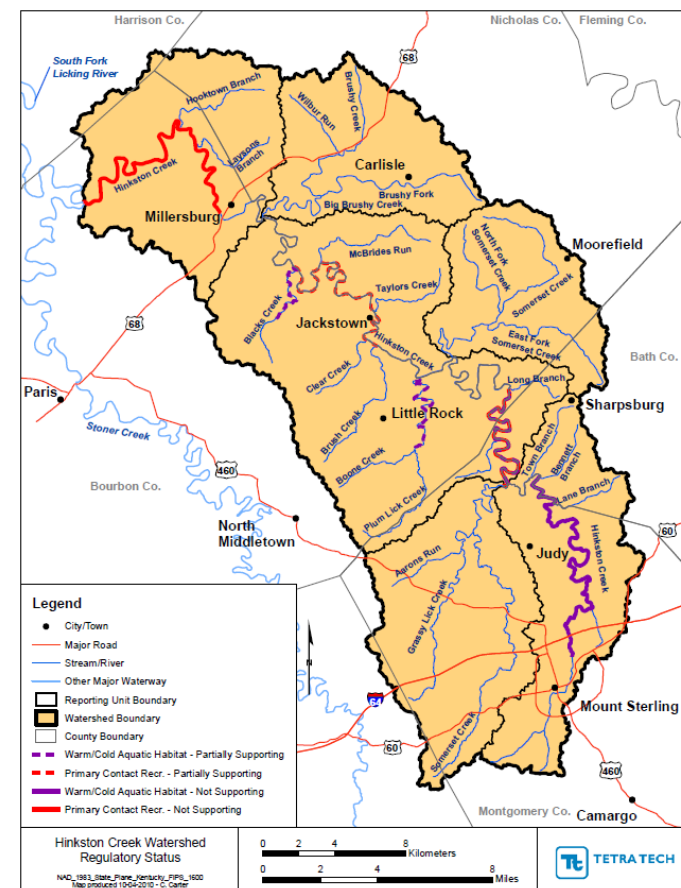
# WATERSHED IMPAIRMENTS

## Water Quality Impairments:

- Fecal Coliform
- Sedimentation/ Siltation
- Nutrient/ Eutrophication

## Riparian Buffer Deficiency

- 75 percent deficient
- Areas of greatest concern include the Big Brushy Creek and Hinkston Headwaters areas



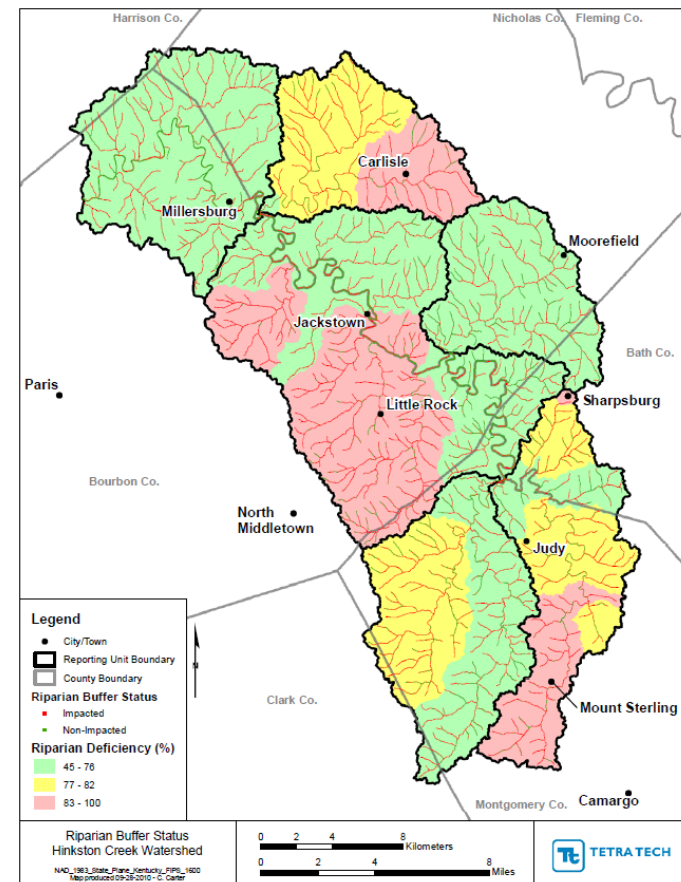
# WATERSHED IMPAIRMENTS

## Water Quality Impairments:

- Fecal Coliform
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**WATERSHED PLAN  
DEVELOPMENT AND  
IMPLEMENTATION EFFORTS  
(BARRY TONNING)**

**CONSERVATION DISTRICT  
STATE COST-SHARE  
PROJECTS IN BOURBON  
COUNTY  
(VALERIE TIPTON)**

# INKSTON CREEK WATERSHED

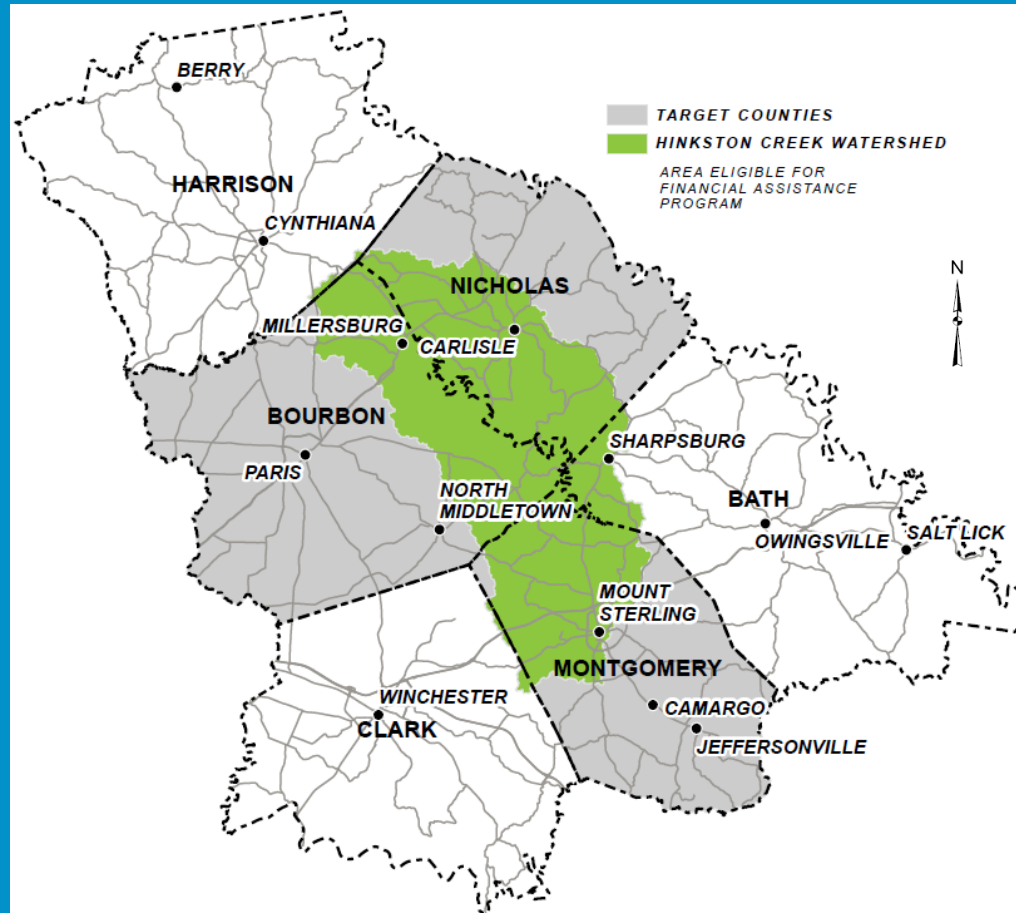
## IMPROVEMENT PROGRAM UPDATES

**Hinkston Stakeholder Meeting**

November 8, 2019



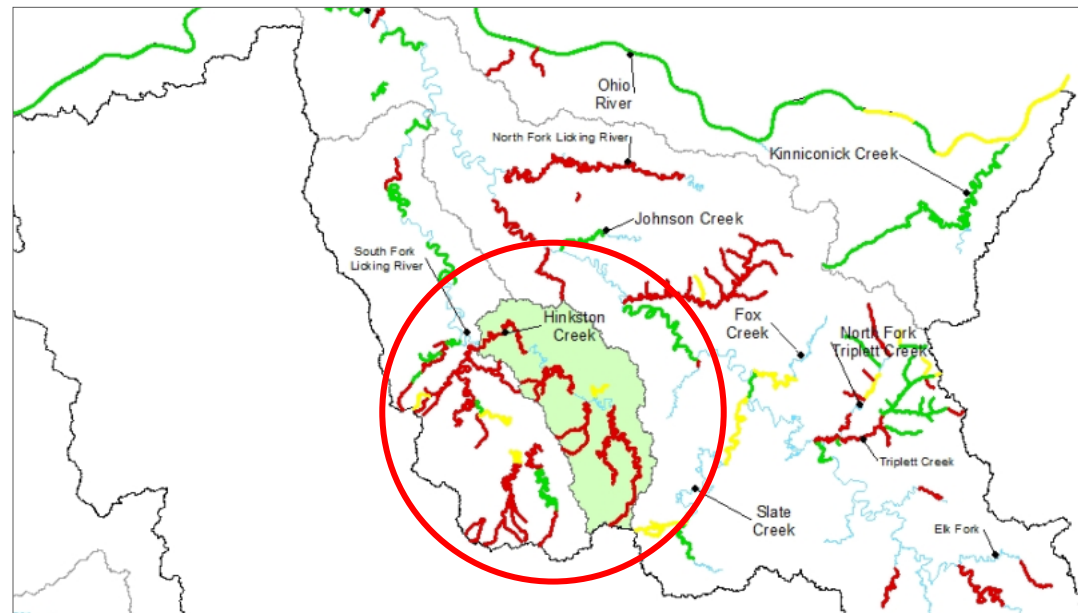
# HINKSTON CREEK WATERSHED





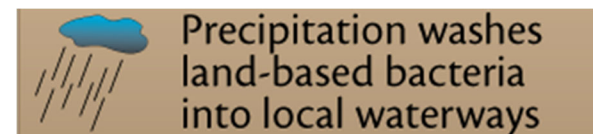
# HIGH BACTERIA LEVELS

Reaches of Hinkston Creek are not safe for activities such as swimming, where there is significant risk of ingesting water



# SOURCES OF BACTERIA

- **Septic Systems**
- **Livestock**
- **Straight Pipes**
- Leaking Sewer Lines
- Pets
- Wildlife



Source: <http://www.aacounty.org/departments/public-works/wprp/science-of-stormwater/>

# RECOMMENDATIONS

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- Reduce human bacteria inputs from septic tanks and sewer leaks
- **Identify and replace failing and improperly maintained septic systems and straight pipes**



# RECOMMENDATIONS

- Reduce pollution from livestock waste
- **Restrict agriculture grazing from the riparian zone and install streamside buffers and fencing to reduce fecal input from stormwater runoff**



# 319 WATER QUALITY GRANT

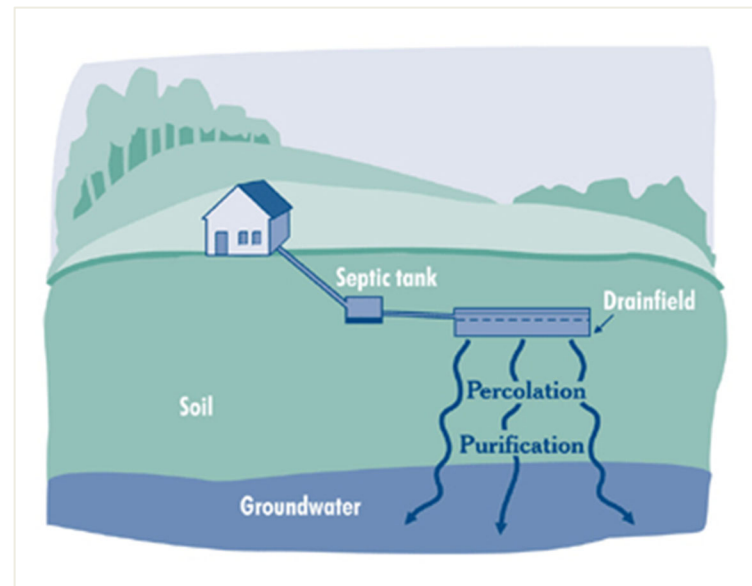
---

- Administered through the KY Division of Water
- Implementation of portions of the Hinkston Creek Watershed Assessment and Management Plan
- Objectives:
  - ✓ Implement practices to reduce human and livestock fecal inputs and address high pathogen and nutrient levels
  - ✓ Increase riparian buffer width
  - ✓ Increase knowledge of water quality issues for local citizens, officials, and students

# SEPTIC PUMPOUT & REPAIR PROGRAM

## SEPTIC WORKSHOPS:

- Education on septic system function
- Instruction on how to properly maintain septic systems
- Information and applications for financial assistance



# SEPTIC SYSTEM FUNDING ASSISTANCE

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## APPLICATIONS AVAILABLE FOR:

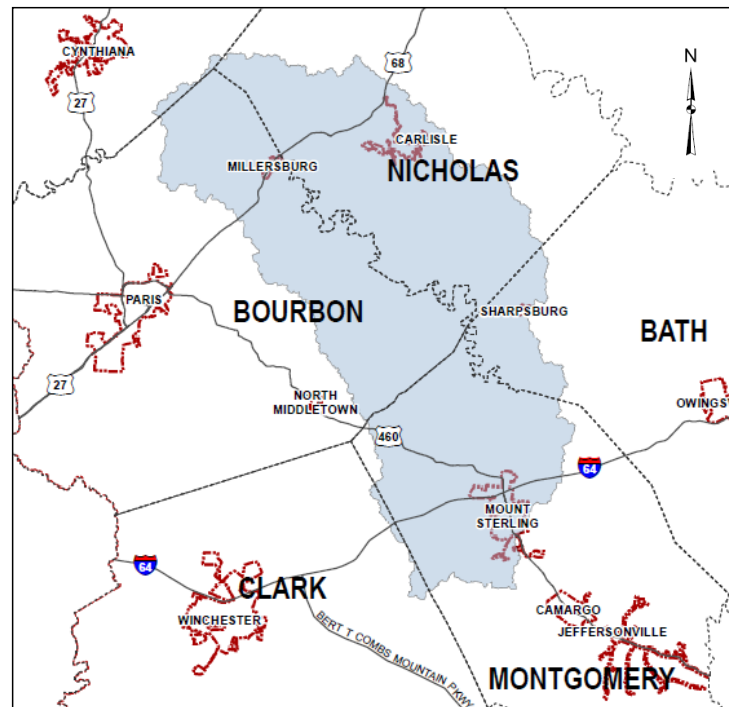
- FREE septic tank pumpout
  - ✓ Includes riser installation up to a designated amount, if necessary
- 80/20 Cost-share grants for septic system repairs
  - ✓ Solution for those with chronically failing systems or straight pipe conditions
  - ✓ Based on guidance from the County Health Department



# SEPTIC FUNDING ELIGIBILITY

## ELIGIBLE APPLICANTS MUST:

- Reside within the Hinkston Creek watershed
- Attend a septic workshop hosted by Bluegrass Greensource
- Submit a signed “Application for Septic Pumpout Program” or “Application for Septic System Repair Program”





# SEPTIC PROGRAM PROMOTION

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- Attended Community Events (tabled and presented)
- Local Health Department coordination/promotion
- Conservation District Tree Giveaways
- Promotion through County Chamber of Commerce
- Cooperative Extension Newsletters
- Articles in local newspapers
- Flyers in local business windows and on Library bulletin boards
- Facebook/Instagram promotion

## SEPTIC PROGRAM SPRING 2018

- Workshops were held in each county and applications collected throughout the month of April. The deadline for application submittal was May 4 and applicants were mailed a letter with funding decisions by May 16.

County	Workshop Date	No. Attendees	Pumpout Applications	Repair Applications
Nicholas	4/09/2018	40	15	20
Montgomery	4/12/2018	25	10	14
Bourbon	4/17/2018	41	12	10
Boyle	4/21/2018	18	5	3
Lincoln	4/24/2018	7	3	1
<b>Total</b>			<b>45</b>	<b>48</b>
Total Applications Received =			93	

## SEPTIC PROGRAM SPRING 2019

- Workshops were held in each county and applications collected throughout the month of March. The deadline for application submittal was April 1.

County	Workshop Date	No. Attendees	Pumpout Applications	Repair Applications
Boyle	2/26/2019	10	3	1
Montgomery	3/5/2019	18	8	9
Bourbon/ Nicholas	3/7/2019	22	4	5
Lincoln	3/12/2019	16	9	6
<b>Total</b>			<b>24</b>	<b>21</b>
Total Applications Received =			45	

# SEPTIC CARE WORKSHOPS




# APPLICATION PRIORITIZATION

---

- Proximity of homeowner's property to a stream or tributary
- Current septic system condition and age (if available)
- Proximity to a priority area identified in the watershed based plan
- Proximity to other implementation projects
- Annual household income

# SEPTIC PROGRAM PROGRESS

- **44** pumpout applications approved in 2018 & **20** pumpout applications approved in 2019
- Repair Applications reviewed and prioritized for assistance award. Number of projects selected based on the funding available and the average cost of septic installation or repair (\$7,000)

Septic Repair Summary	2018	2019
<b>Approved:</b>	<b>24</b>	<b>9 (11 total)</b>
Waiting List	6	
Denied at this time:	18	12
<b>Total</b>	<b>48</b>	<b>21</b>

# SEPTIC PROGRAM PROGRESS

- Completed Projects:

	Pumpout Program	Septic Repairs
Completed	46	29
Remaining	18	4
<b>Total</b>	<b>64</b>	<b>33</b>

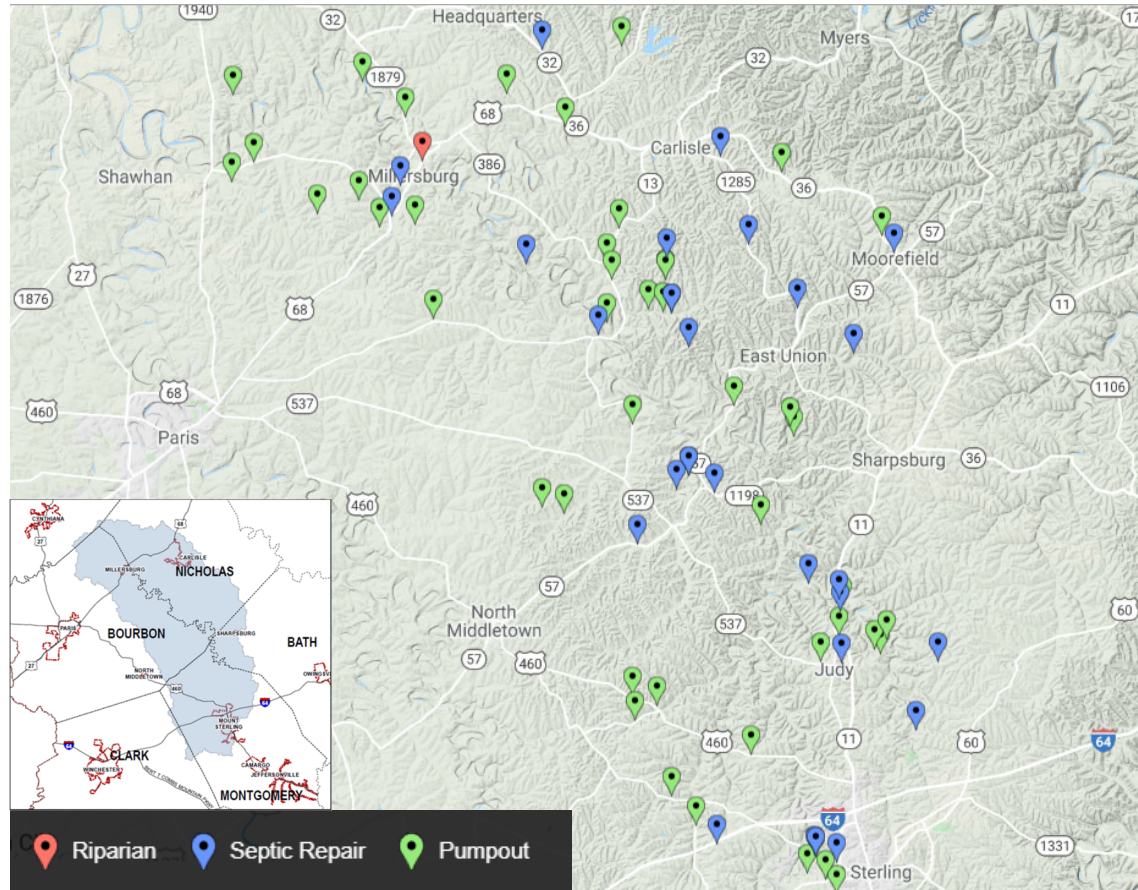
- Hinkston Projects:

	Completed Hinkston Projects	Total Hinkston Projects	Overall (both watershed areas)
Pumpouts	36	<b>47</b>	64
Septic Repairs	27	<b>28</b>	33
Riparian Buffers	1	<b>1</b>	6
<b>Total</b>	<b>64</b>	<b>76</b>	<b>103</b>

# HINKSTON PROJECT MAP

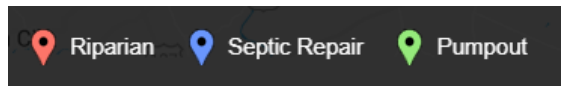
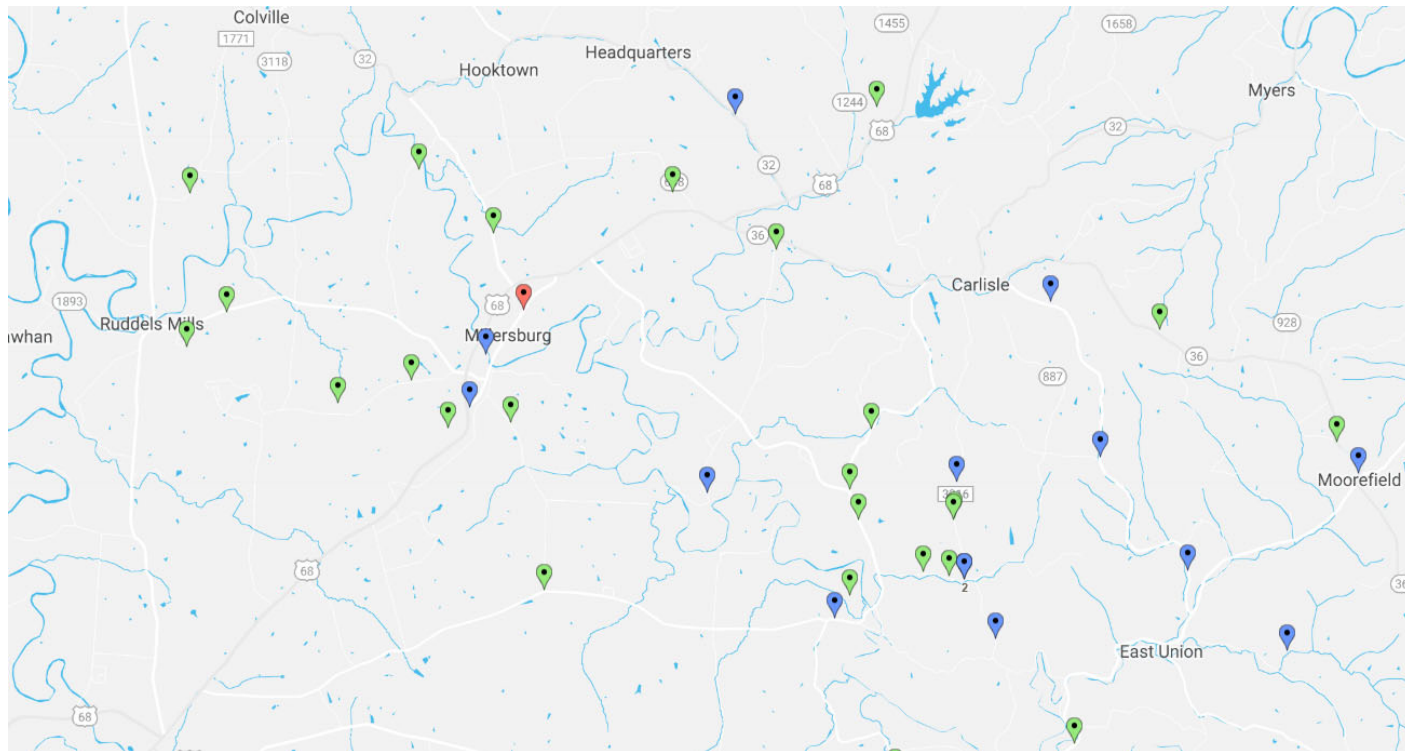
Map Link:

<https://batchgeo.com/map/2211ed1df2cbe339b3bcdcf7f7a7e4b>

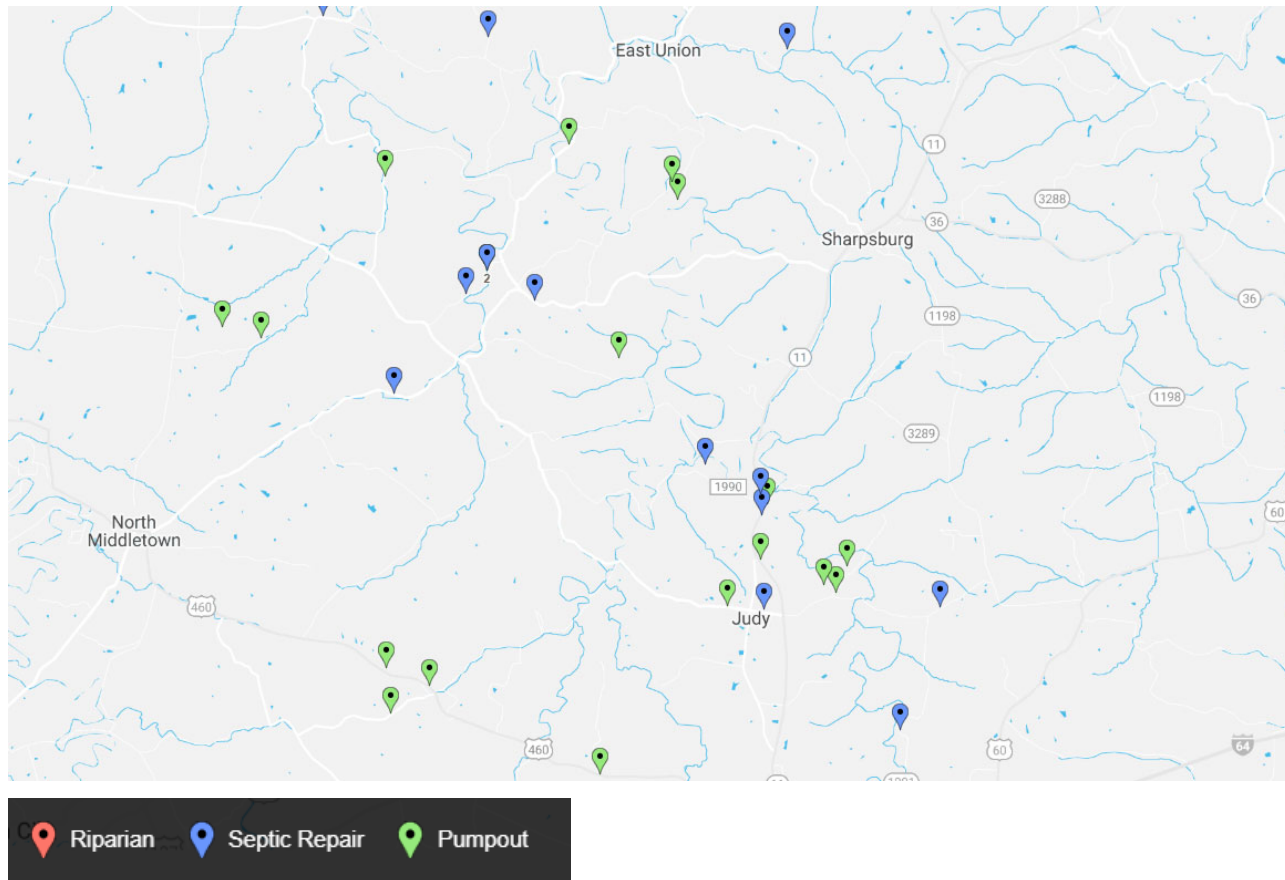




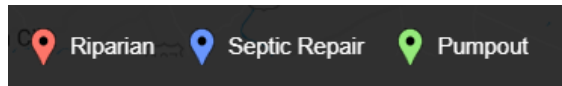
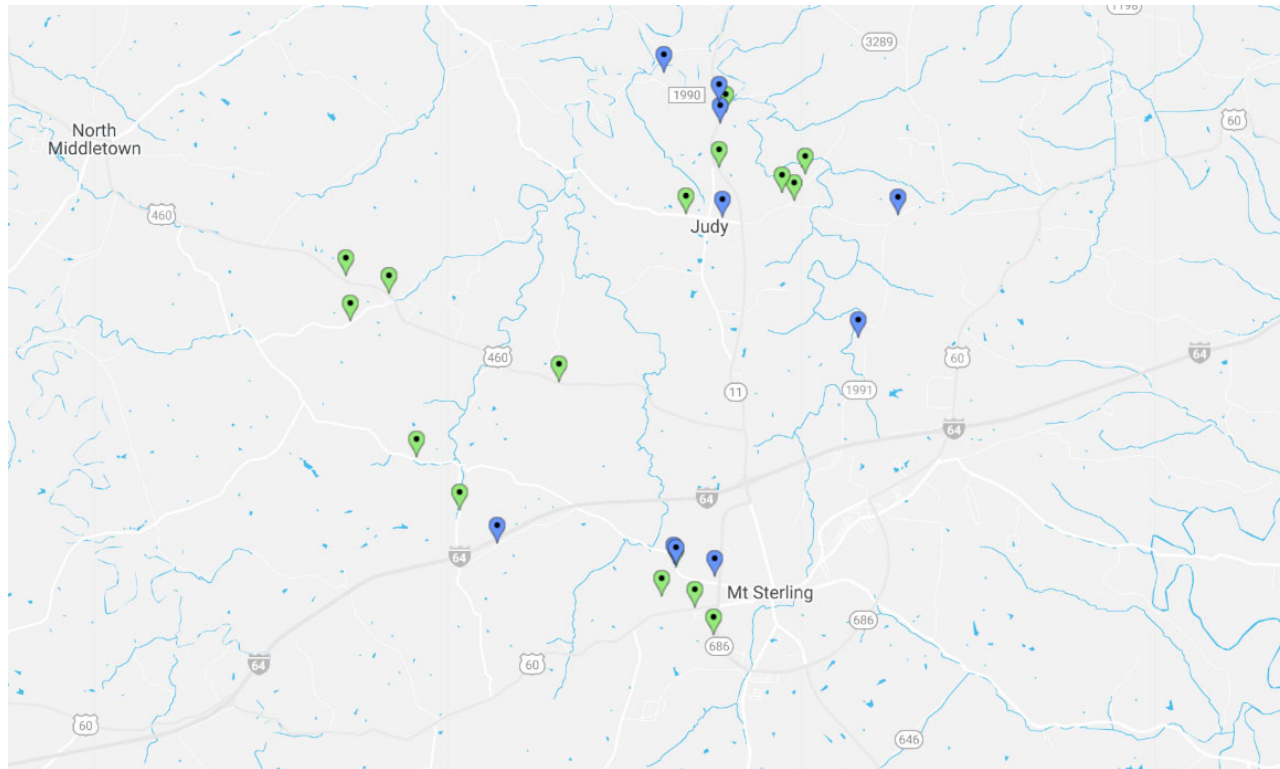
# PROJECT MAP



# PROJECT MAP



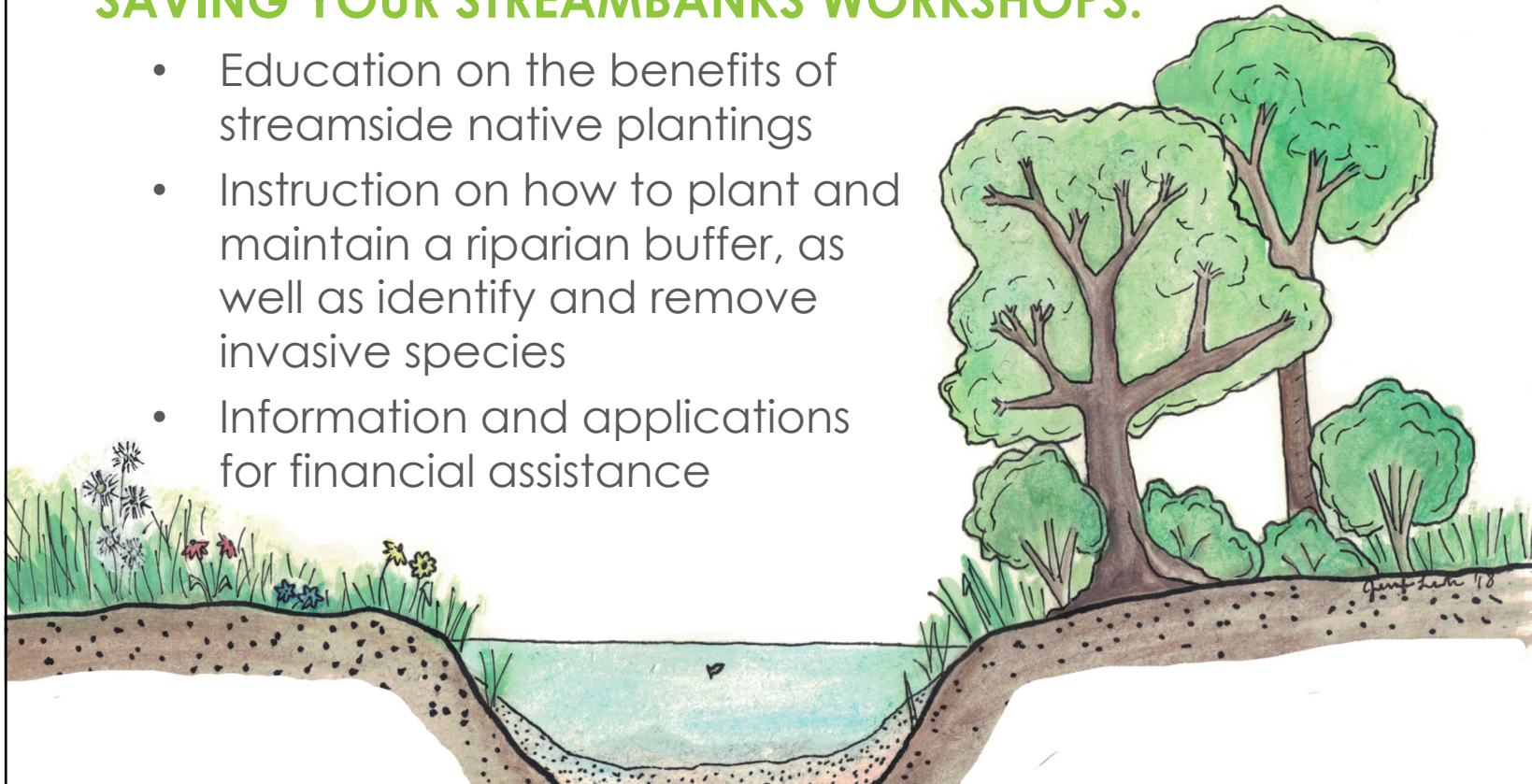
# PROJECT MAP



# RIPARIAN BUFFER PROGRAM

## SAVING YOUR STREAMBANKS WORKSHOPS:

- Education on the benefits of streamside native plantings
- Instruction on how to plant and maintain a riparian buffer, as well as identify and remove invasive species
- Information and applications for financial assistance



# RIPARIAN BUFFER ASSISTANCE

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## APPLICATIONS AVAILABLE FOR:

- 80/20 cost-share grants for establishing streamside buffers
  - BGGs will reimburse 80 percent of project cost, Up to \$2,000
  - Applicant responsible for 20 percent of the project cost and any additional amount over the maximum reimbursable amount
  - Open to public community projects, as well as private property owners

# RIPARIAN BUFFER ASSISTANCE

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## STATE AND FEDERAL PROGRAMS:

- Kentucky State Cost-Share Program
  - Local Conservation District Office
  - Streambank BMPs to help agricultural operations protect the soil and water resources
- Environmental Quality Incentives Program (EQIP) Program
  - Local Natural Resources Conservation Service (NRCS) Office - Similar conservation practices as offered in State Cost-Share Program

# RIPARIAN PROGRAM PROMOTION

---

- Attended Community Events (tabled and presented)
- Local Health Department coordination/promotion
- Conservation District Tree Giveaways
- Promotion through County Chamber of Commerce
- Cooperative Extension Newsletters
- Articles in local newspapers
- Flyers in local business windows and on Library bulletin boards
- Facebook/Instagram promotion



## RIPARIAN PROGRAM FALL 2018

- Workshops were held in each county. The deadline for application submittal was Nov 30th. Applications reviewed and approved in December for installation in Spring 2019.

County	Workshop Date	No. Attendees	Riparian Applications	Notes
Boyle	10/2/2018	14	4	Danville/WTE/ 2-Private Properties
Nicholas	10/9/2018	10	1	4-H Camp project
Bourbon	10/16/2018	23	1	Millersburg Community Park
Lincoln	10/18/2018	10	1	Hustonville Park Project
Montgomery	10/22/2018	7	0	

**Total Applications Received = 7**



# RIPARIAN WORKSHOPS



# RIPARIAN PROGRAM PROGRESS

---

- Native plants ordered in March/April
  - Mix of native trees (1 and 2 gal), native shrubs (3 gal and nursery quart sizes), native grasses and perennials (plugs and nursery quart sizes)
  - Willow live staking in February at 2 project locations
- Plantings scheduled for May and June 2019
- Projects completed by July 2019



# MILLERSBURG BUFFER

## COMMUNITY PARK PROJECT

City of Millersburg and Bourbon Christian Academy partnered to establish a riparian buffer along a spring that discharges into Hinkston Creek





# NO MOW SIGNAGE



# COMMUNITY OUTREACH

---

- Working with local watershed partners and community groups to establish long-term water quality awareness and protection as a local priority:
  - Work with local agencies, organizations, and others to expand the reach of the project into the communities
  - Build stakeholder capacity for greater watershed improvement – **Hinkston Creek Watershed Meeting Friday, November 8, 2019** (10-12PM Neal Welcome Center in Carlisle, KY)
  - Table and present at local events and meetings throughout the year to build awareness and promote workshops and financial assistance opportunities

# COMMUNITY OUTREACH



# K-12 OUTREACH

---

- Working with schools to establish long-term water quality awareness and protection as a local priority
  - Our environmental educators work with local teachers and school groups
  - Build water-related environmental education in the community for greater watershed improvement
  - K-12 education and classroom activities, 3 or 4 visits a year with an end of year water-related project

# K-12 OUTREACH





# QUESTIONS/CONTACT

---

**Lindsie Nicholas, P.E.**

Watershed Coordinator  
Bluegrass Greensource  
835 National Ave, Lexington, KY  
[lindsie@bggreensource.org](mailto:lindsie@bggreensource.org)  
859-266-1572



**BLUEGRASS  
GREENSOURCE**

**CONSERVATION DISTRICT  
STATE COST-SHARE  
PROJECTS IN NICHOLAS  
COUNTY  
(ERICA BRIERLY)**

# **LRWW WATER QUALITY DATA UPDATES**

# KY WATER QUALITY STANDARDS

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Surface Water Standards (401 KAR 10:031)

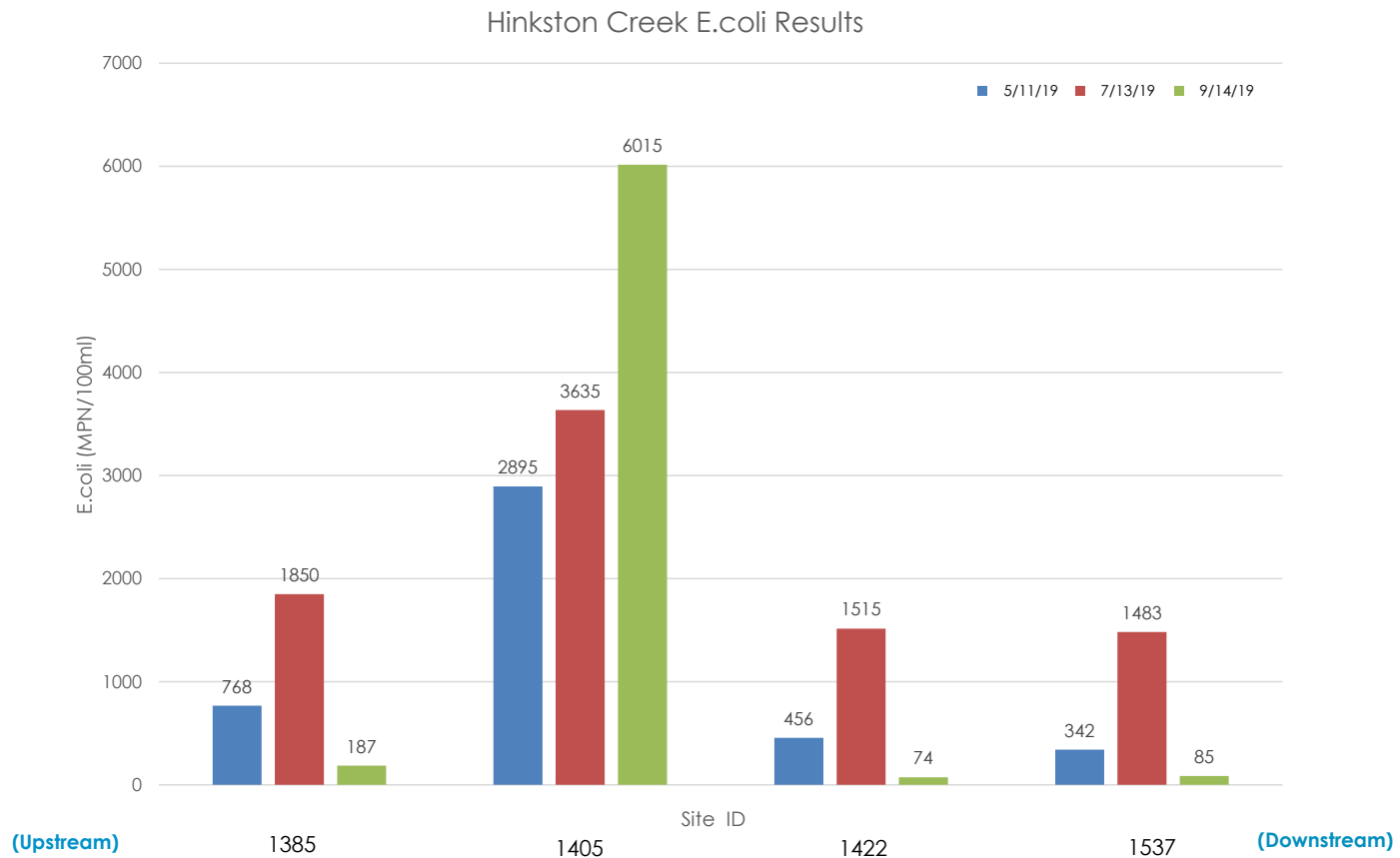
Bacteria Standard - Section 7(1)(a)

Primary Contact Recreation

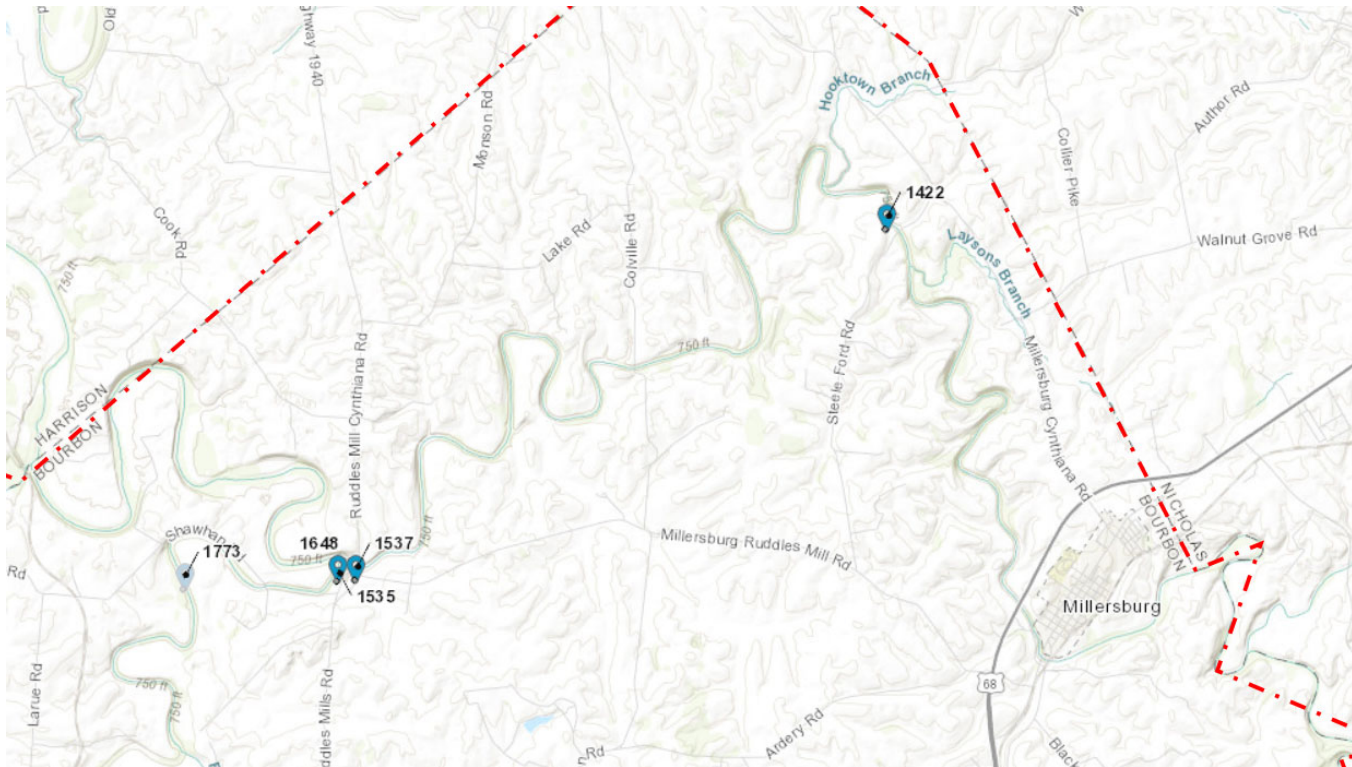
May 01 – October 31

- E. coli not to exceed **130 colonies per 100ml** as a geometric mean (>5 samples in 30 days)
- E. coli not to exceed **240 colonies per 100ml** in less than 20% samples in 30 days

# LRWW WATER QUALITY DATA



# LRWW WATER QUALITY DATA



# LRWW WATER QUALITY DATA

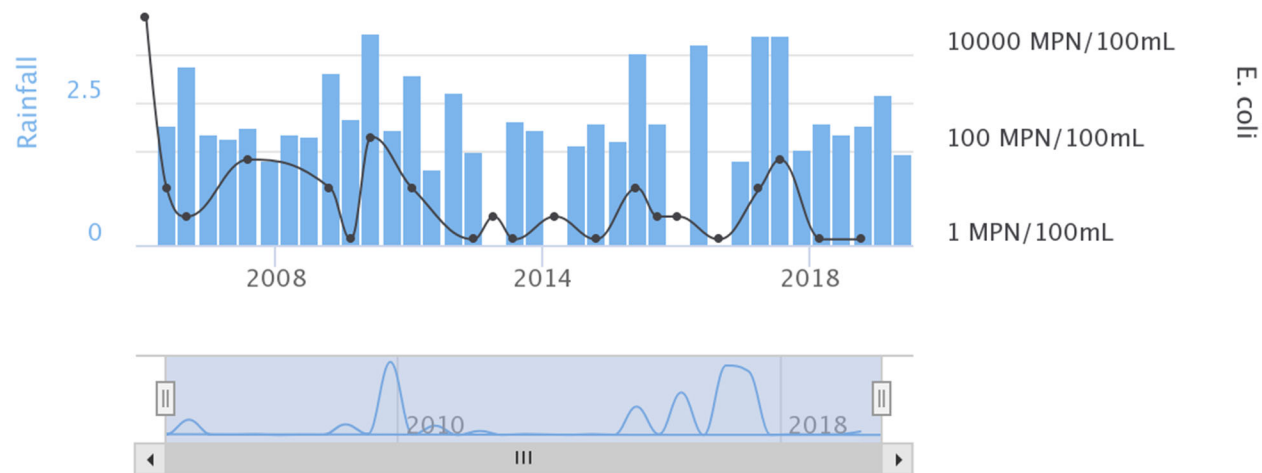
Analyte: E. coli (column) and Field Analyte: Rainfall (line)

Site Number: 1537

Use the scale below or button on left to change date range.

Zoom 1m 3m 6m YTD 1y **All**

From Sep 11, 2004 To Sep 14, 2019



# LRWW WATER QUALITY DATA

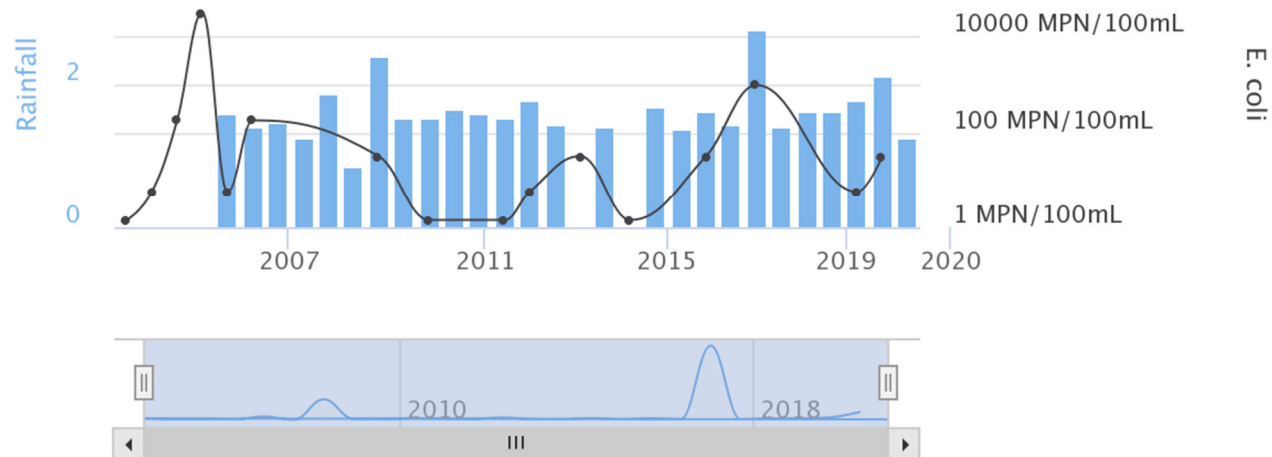
Analyte: E. coli (column) and Field Analyte: Rainfall (line)

Site Number: 1422

Use the scale below or button on left to change date range.

Zoom 1m 3m 6m YTD 1y **All**

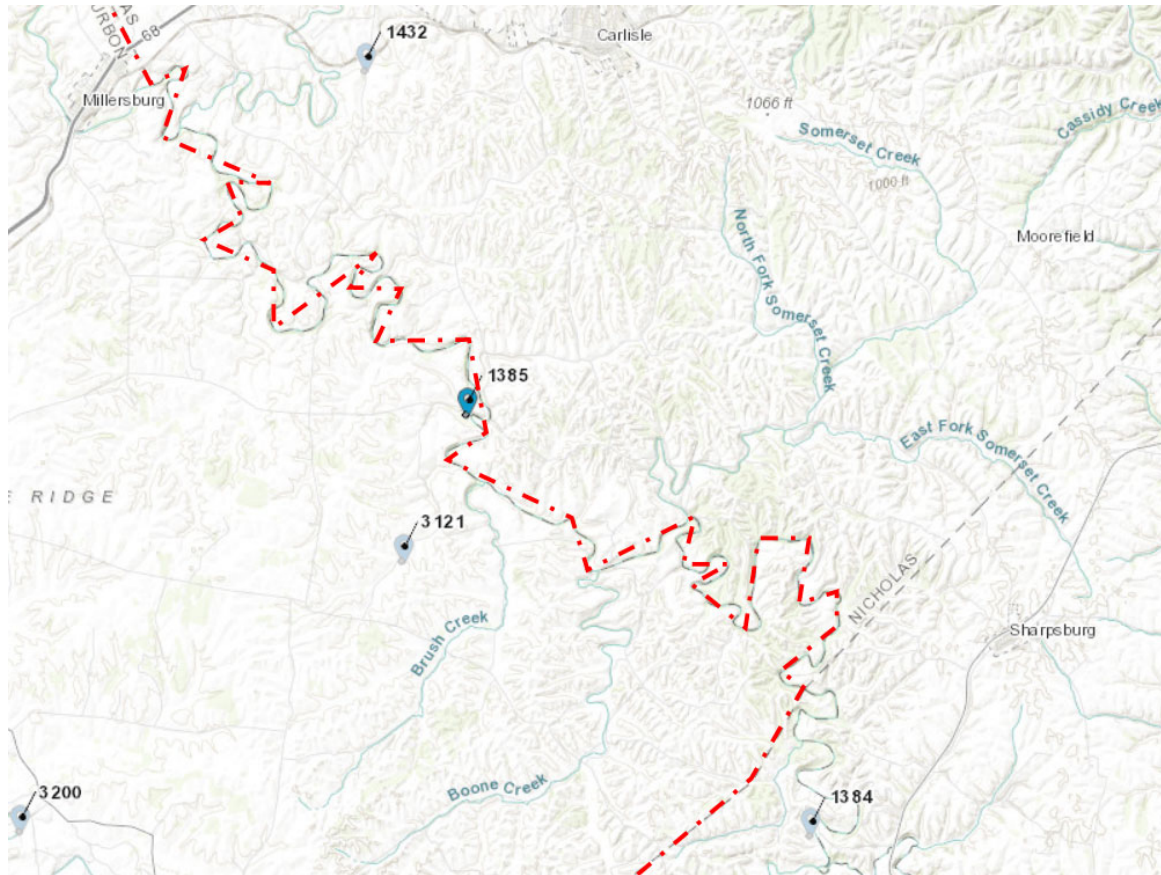
From Sep 23, 2000 To Sep 14, 2019



Highcharts.com



# LRWW WATER QUALITY DATA



# LRWW WATER QUALITY DATA

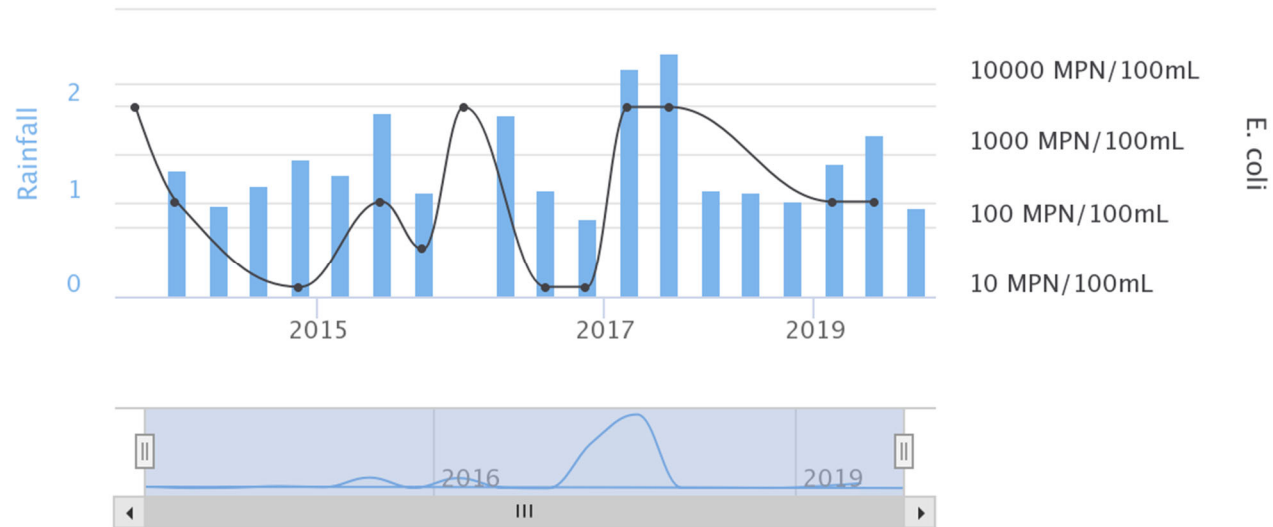
Analyte: E. coli (column) and Field Analyte: Rainfall (line)

Site Number: 1385

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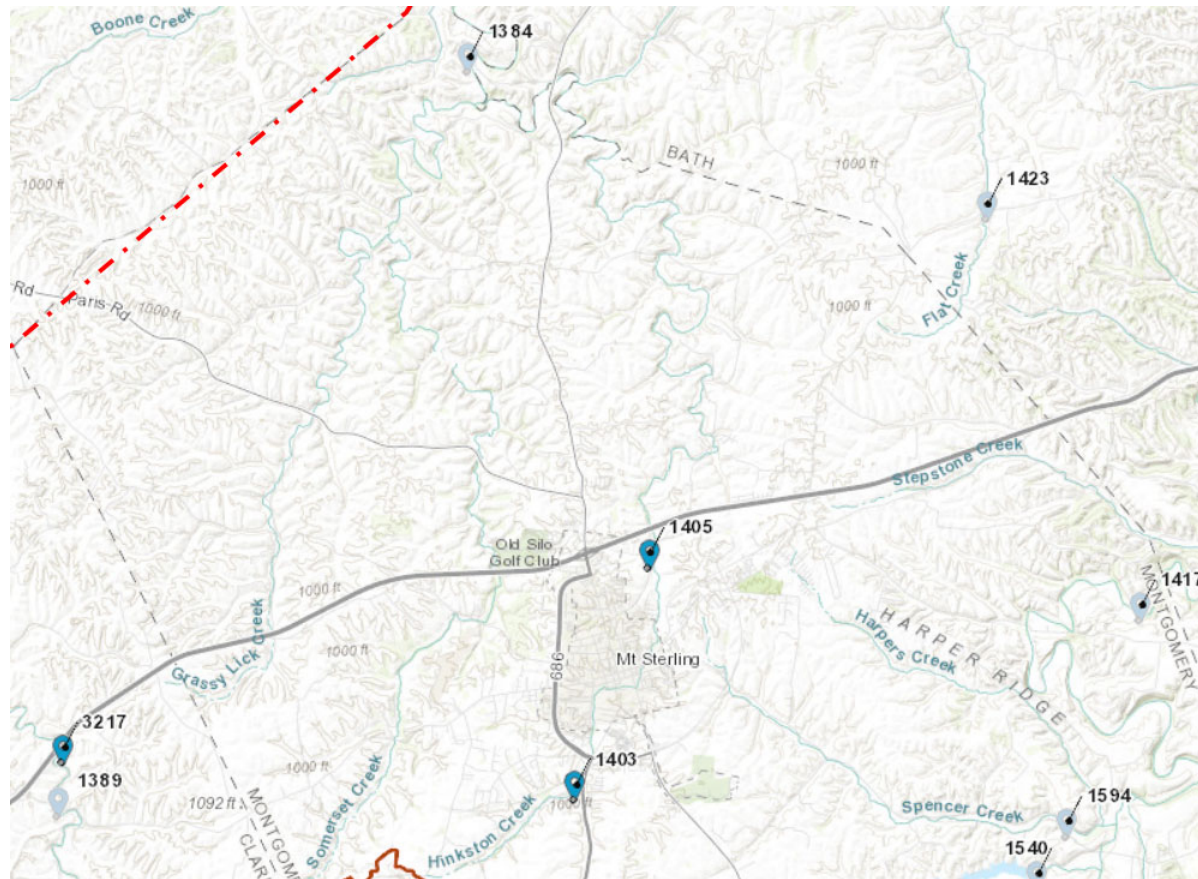
Zoom 1m 3m 6m YTD 1y **All**

From May 11, 2013 To Sep 14, 2019



Highcharts.com

# LRWW WATER QUALITY DATA



# LRWW WATER QUALITY DATA

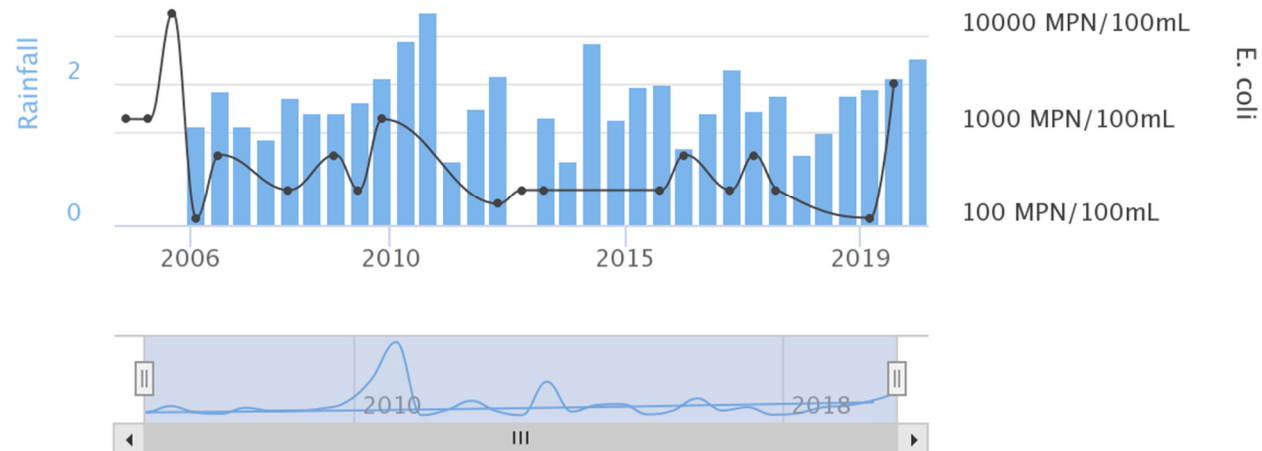
Analyte: E. coli (column) and Field Analyte: Rainfall (line)

Site Number: 1405

Use the scale below or button on left to change date range.

Zoom 1m 3m 6m YTD 1y **All**

From Jun 3, 2001 To Sep 14, 2019



Highcharts.com

# LRWW WATER QUALITY DATA

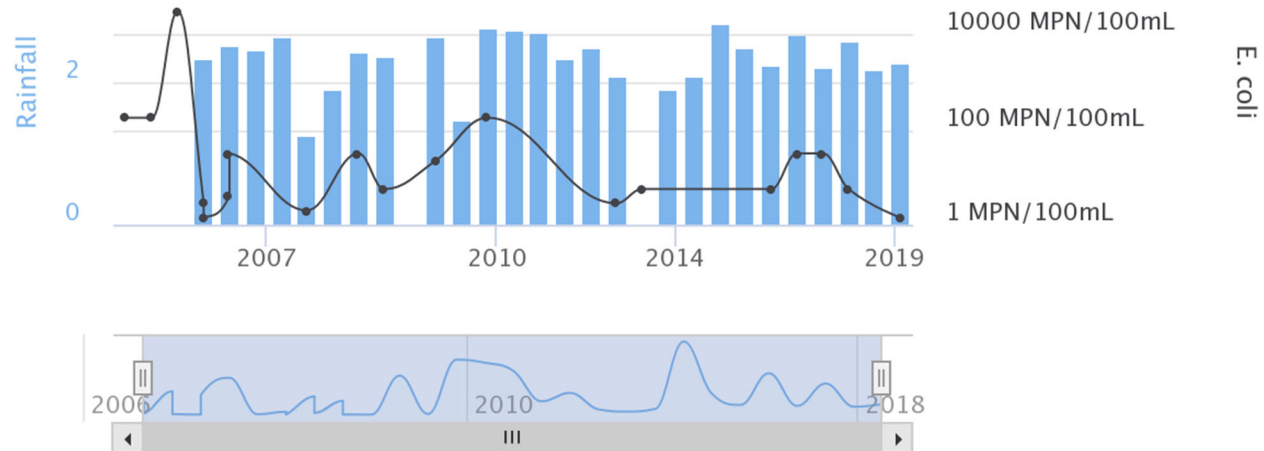
Analyte: E. coli (column) and Field Analyte: Rainfall (line)

Site Number: 1403

Use the scale below or button on left to change date range.

Zoom 1m 3m 6m YTD 1y **All**

From Jun 3, 2001 To May 11, 2019



# OPEN DISCUSSION

# OPEN DISCUSSION

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**WHAT DOES CLEAN WATER IN THE  
HINKSTON CREEK WATERSHED  
LOOK LIKE TO YOU?**

# OPEN DISCUSSION

---

**Target/ Focus  
Areas**

**Grant  
Opportunities**

**Success  
Stories**

**Concerns/  
Issues**

**Future  
Initiatives**

**Partnerships**

**Community  
Outreach &  
Education**

**Water Quality  
Management  
Ideas**



# LINDSIE NICHOLAS, P.E.

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