

HINKSTON CREEK WATERSHED STAKEHOLDER MEETING

November 23, 2020
10:00 – 11:30 AM
Virtual Event



AGENDA

1. Hinkston Creek Trivia (5 min)
2. Announcements and Updates (60 min)
 - Hinkston Creek Watershed Project Update
 - Licking River Basin Update
 - Licking River Watershed Watch Update
 - State Cost-Share Update
 - Mt. Sterling Water & Sewer Update
 - Nicholas County Update
 - Bourbon County Joint Planning Commission Update
3. Breakout Sessions (20 min)
4. Summarize and Close (5 min)

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



HINKSTON CREEK TRIVIA

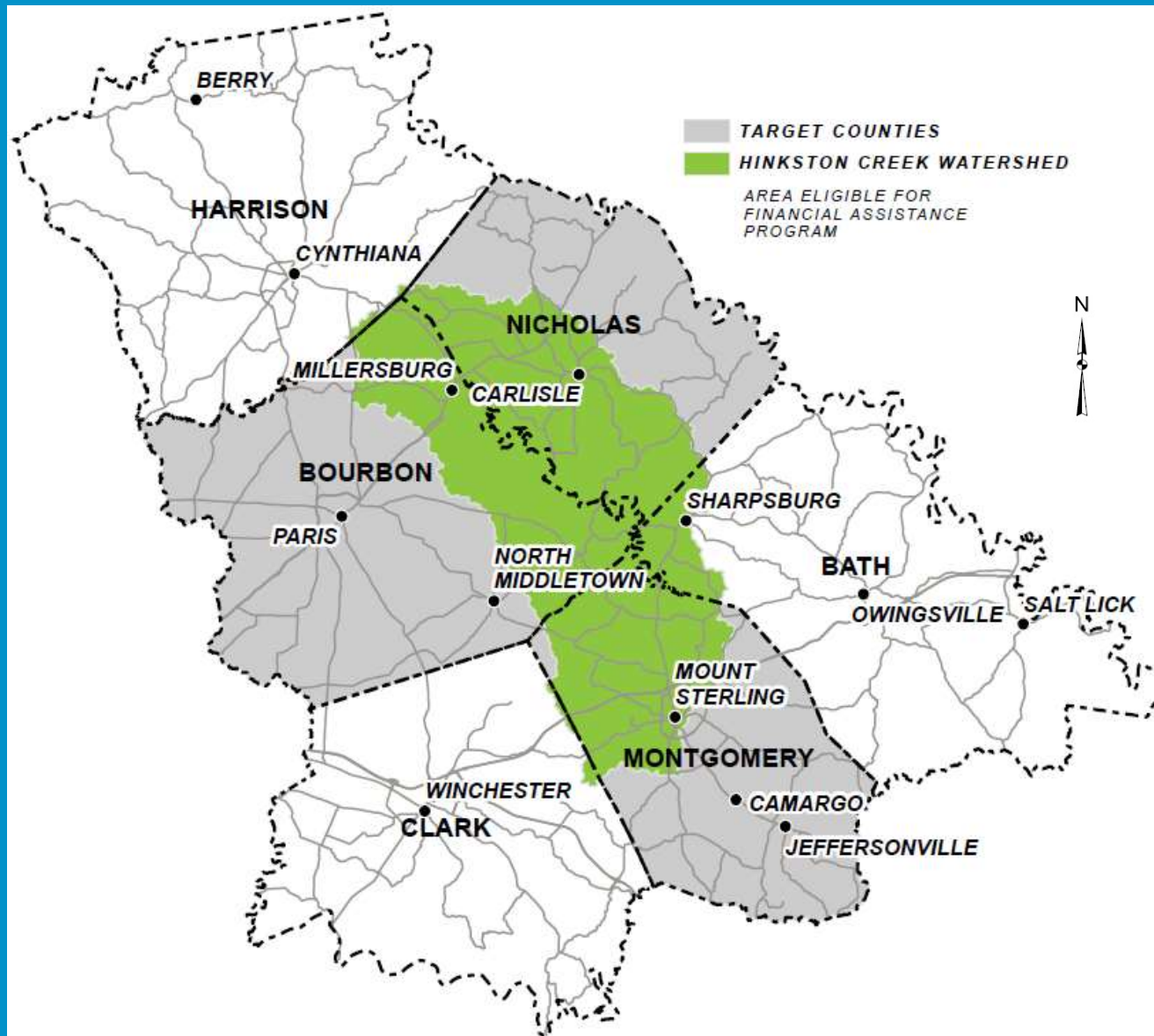
HINKSTON CREEK WATERSHED

IMPROVEMENT PROGRAM UPDATES

Hinkston Stakeholder Meeting
November 23, 2020

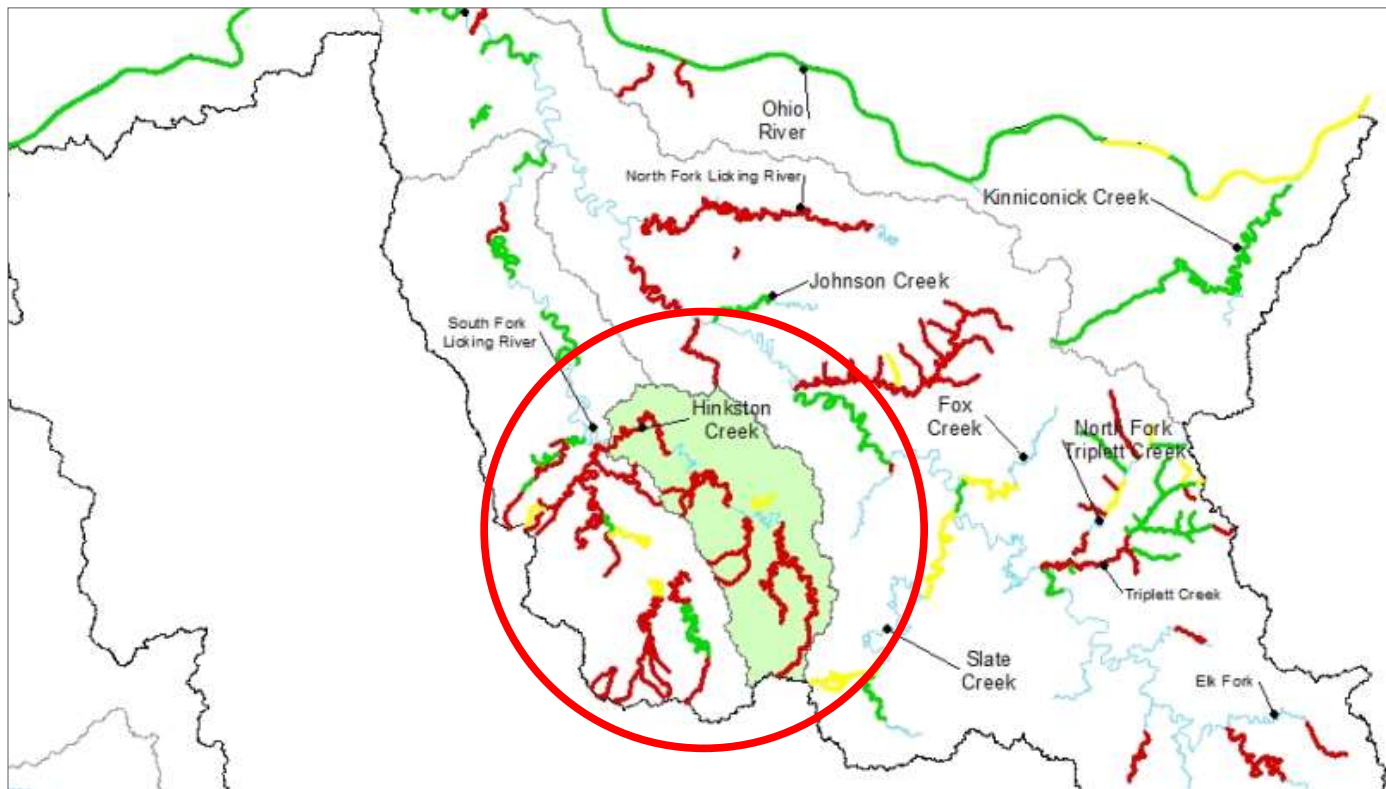


HINKSTON CREEK WATERSHED



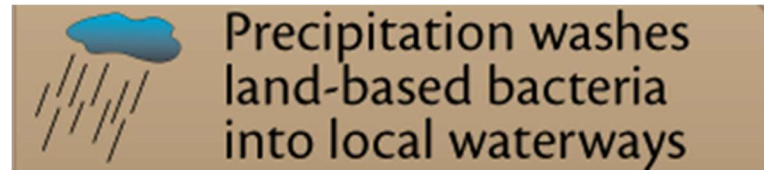
HIGH BACTERIA LEVELS

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



Failed septic systems add to bacterial input



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

RECOMMENDATIONS

- 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



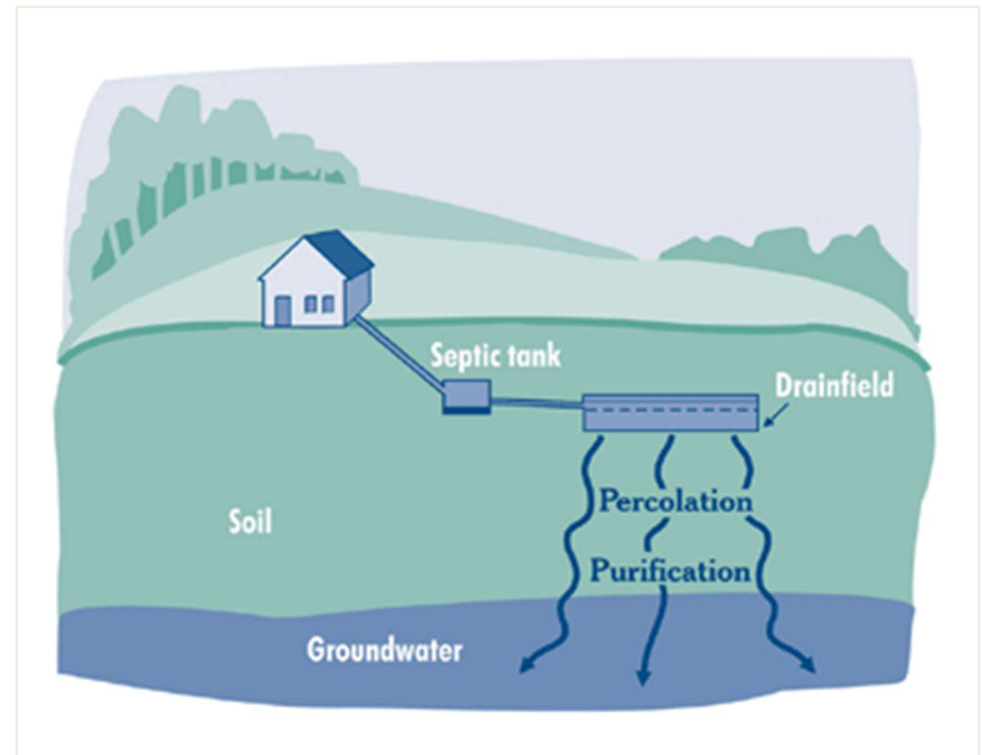
319 WATER QUALITY GRANT

- 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

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 CARE WORKSHOP SUMMARY

- Workshops were held once a year from 2018-2020 with almost **200** attendees across the watershed

Workshop Date	County	No. Attendees	Pumpout Applications	Repair Applications
4/09/2018	Nicholas	40	15	20
4/12/2018	Montgomery	25	10	14
4/17/2018	Bourbon	41	12	10
3/05/2019	Montgomery	18	8	9
3/07/2019	Bourbon/ Nicholas	22	4	5
2/25/2020	Montgomery	11	8	7
3/05/2020	Nicholas	23	19	16
3/10/2020	Bourbon	18	3	4
Total		198	79	85

Total Applications Received = **164**



SEPTIC CARE WORKSHOPS



April 2018,
Nicholas Co

April 2018,
Bourbon Co



SEPTIC PUMPOUT PROGRESS

	Completed Pumpouts 2018-2019	2020 Pumpout Projects	Total Hinkston Creek Pumpouts to Date
Bourbon	15	1	16
Montgomery	15	5	20
Nicholas	14	11	25
	44	17	61

2020 Septic Project Update:

- 11 of 17 pumpouts are completed to date

SEPTIC REPAIR PROGRESS

	Completed Septic Repair Projects 2018-2019	2020 Septic Repair Projects	Total Hinkston Creek Septic Repairs to Date
Bourbon	7	4	11
Montgomery	10	9	19
Nicholas	11	14	25
	28	27	55

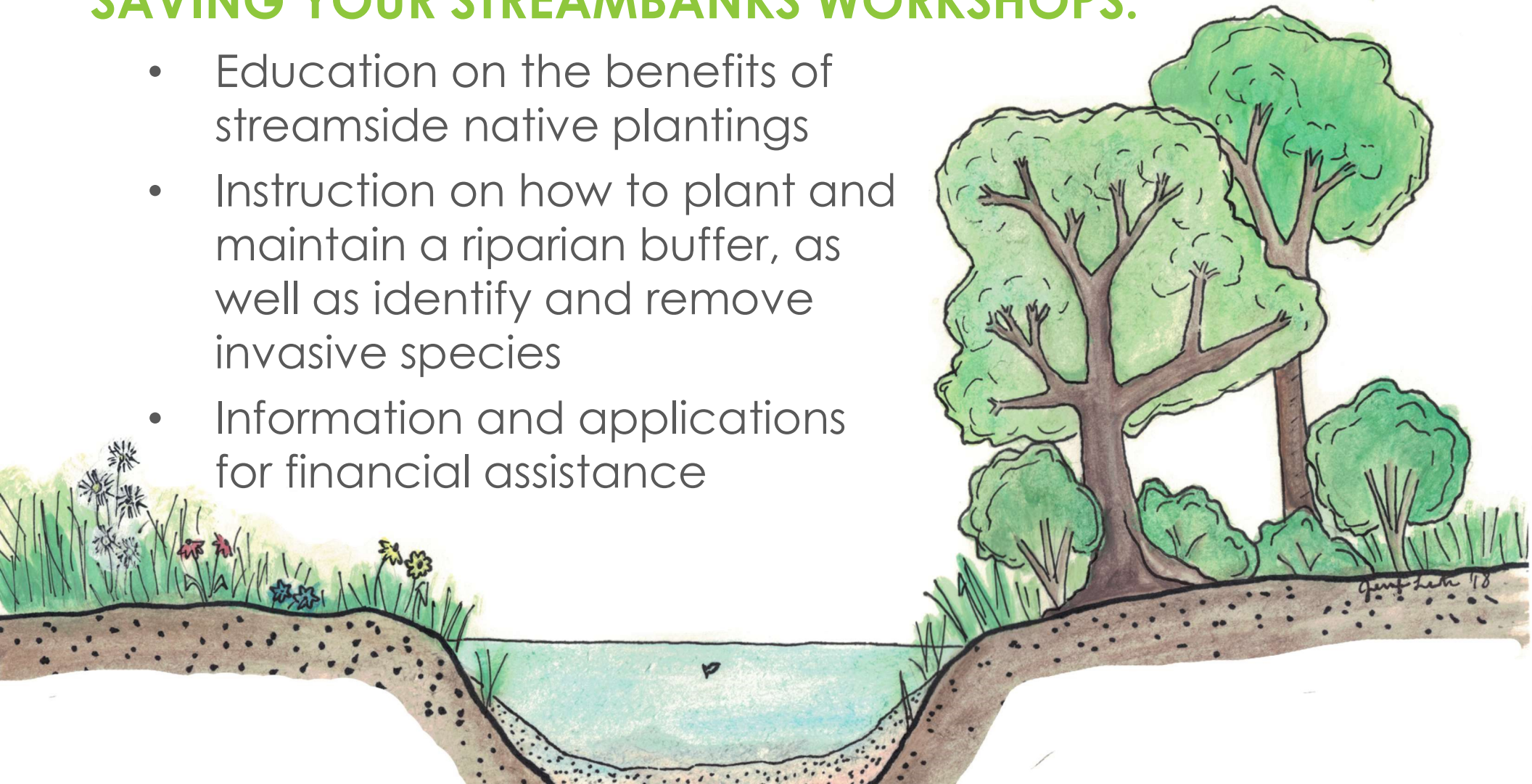
2020 Septic Project Update:

- 20 of 27 repairs are completed to date

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

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

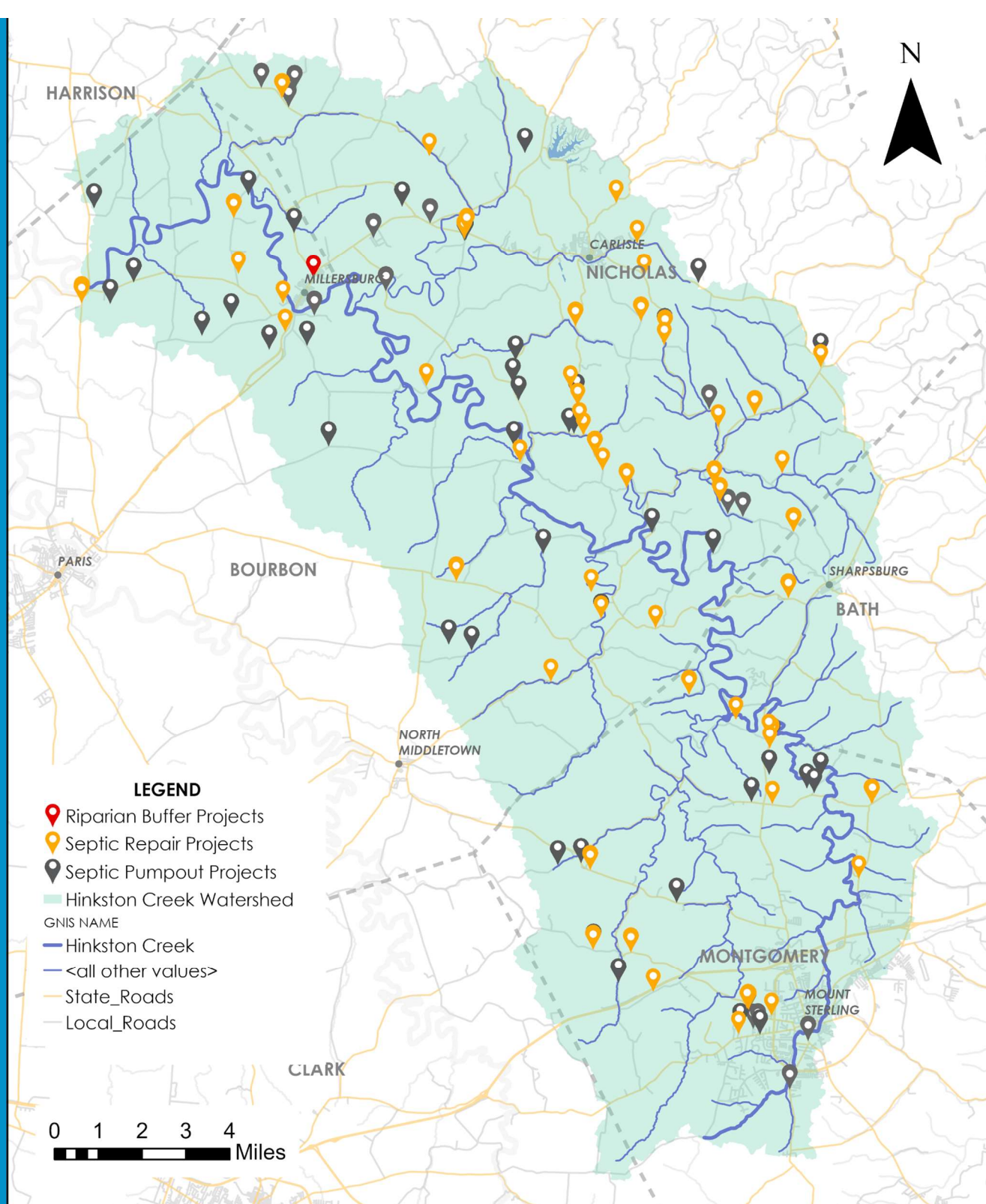
RIPARIAN BUFFER PROJECTS

Project	County	Linear Feet Planted/ Restored
Millersburg Linville Community Park Buffer	Bourbon	500 LF



Hinkston Creek Watershed

BMP Implementation Map



WATERSHED BASED EDUCATION



CONNECTING COMMUNITY AND WATER

- Watershed Based Education for Adults and Students
 - Explore watershed and water quality topics
 - learn more ways to get involved in your local watershed
 - find student activities you can do at home
- Connecting families, students, and communities to their local waterways with a comprehensive tool for learning and fun



Watershed Based Education

The pages on the Watershed Based Education Site contain resources for families, homeowners, and teachers to explore and learn more about local watersheds and how to improve them. The site offers information about resources that Bluegrass Greensource promotes throughout Central Kentucky to engage homeowners in hands-on projects to improve their own watershed, along with grant opportunities to help fund best management practices to improve water quality.

Program Description

Through a generous grant from the U.S. EPA, administered through the Kentucky Division of Water, Bluegrass Greensource is working to improve water quality in several focus watersheds through implementation of the watershed based plan (WBP) for Clark Run and Hanging Fork watersheds, both in the Kentucky River Basin, and Hinkley Creek watershed in the Licking River Basin. The main goal of the program is to reduce human and livestock fecal inputs, increase and improve riparian buffer areas to reduce erosion, sedimentation, and nutrient loading in streams, and decrease other non-point source pollutants from urban and agricultural stormwater runoff.

Objectives include educating local homeowners, landowners, and students, enabling better septic system function, enhancing riparian zones, and building watershed stakeholder capacity for the long-term appreciation, understanding, and improvement of each watershed and its tributaries. To reach these objectives, Bluegrass Greensource offers educational opportunities to increase knowledge of local water quality issues for local citizens, officials, and K-12 students and collaborates with nearby partners to provide input and financial and technical support for implementing best management practices.



Check out this video from Caring For Our Watersheds

What is a Watershed?

A watershed is an area of land that water flows across or under and drains to a common body of water. We all live in a watershed and we all have an influence on what happens in our watershed, good and bad. What happens in our small watershed also affects the larger watershed downstream. There are many things we can do to take care of our watersheds and the streams, rivers, and lakes we depend on.

What is Stormwater Runoff?

Rainwater or snow melt not absorbed by plants or soaked into the soil flows off the roofs, lawns, roadways, parking lots, parks, and farmland in our watershed. We call this water stormwater runoff. As water runs over these surfaces, it picks up pollutants like litter, oil, fertilizers, sewage, and pet/ livestock waste. In cities, much of the stormwater runoff ends up in storm drains that flow to our streams, rivers, and lakes without any treatment.

CONNECTING COMMUNITY AND WATER



Introduction to Water Quality

Water quality describes the condition of the water, including chemical, physical, and biological characteristics, with respect to its suitability for a particular purpose or use such as drinking, swimming, or supporting aquatic life. Poor water quality can pose a health risk for people, as well as for ecosystems. In the following video, Ms. Rachel walks us through some of the physical (e.g., color, taste) and chemical (e.g., pH and dissolved oxygen) characteristics that teach us more about the water quality or health of a stream.

In Part 2, Ms. Rachel walks us through a quick biological assessment of Mill Creek in Lexington, KY. Organisms called Aquatic Macroinvertebrates can teach us even more about the health of our waterways. Let's break down the name: aquatic = lives in water; macro = can be seen without a microscope; invertebrate = lacks an internal skeleton. These creatures are an important part of the food chain and are categorized as sensitive to pollution, moderately tolerant to pollution, and tolerant to pollution. Their abundance or lack thereof in a waterbody can teach us a lot about the environmental health of a creek or stream.



Water Quality Testing



Macroinvertebrates

Useful Water Quality Testing Tools:

Class Stream Kit: Check out a water quality testing kit for free from Bluegrass Greensource's Resource Library.

Breaking Open the Parameters: A great tool to explore what all these water quality testing parameters really mean (see below for some examples).

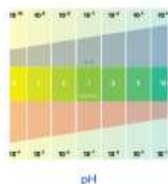
Habitat Assessment Form: Use this form to track your stream habitat assessment.

Habitat Assessment Reference Card: Use this key to help with making visual, odor and other observations.

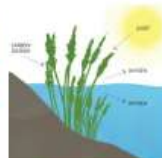
Biological Assessment Field Data Sheet: Use this form to track your stream biological assessment (See Macro ID Key below).

How to use the Macroinvertebrates.org website: Check out this video tutorial for your Macro ID.

Biotic Index Data Sheet: Print this sheet or use the [online calculator](#) from the Leak Pack Network.



pH



Dissolved Oxygen



Conductivity



Temperature



Use this macroinvertebrate ID Key to help you identify the type of macros collected in your own biological assessment.

Kentucky Water Health Portal:

Explore the Kentucky Water Health Portal by zooming to an area of concern or by using the search bars along the top of the map. This map shows stream impairments of tested waterways across the state. Red means a stream was tested and does not support a designated use, such as swimming or aquatic habitat. Click on the red, yellow, and green stretches of streams to learn more!

Click the map to the right to be redirected to the KY Water Health Portal.

2016 Integrated Report: Summary of water quality conditions in the state prepared by the Kentucky Division of Water.



CONNECTING COMMUNITY AND WATER

Student Activity for Septic Systems:

Make a Model Septic System

This activity lets students demonstrate the basic concepts of how a septic tank and leach field work. It can be used as a basic introduction to where water goes after being flushed or as a beginning activity for studies of more in-depth activities.



The **Septic Tank** holds household wastewater, allowing bacterial action to separate sewage into three distinct layers in the tank: clarified effluent, settled sludge, and floating scum. The tank removes solids by holding the wastewater in the tank for 24-72 hours, allowing heavier solids to settle as sludge and the lighter particles to float on top.

Materials Needed:

- 2 clear glasses or 2 glass jars
- sand
- paper towel
- potting soil
- food coloring
- flexible straw
- two pieces of paper
- measuring tape
- sponge



Step 1: Label the glasses or jars.

One is the septic tank and the other is the leach field.



Step 2: Prepare the septic tank.

Fill half the glass or jar with water, 1/4 a cup of sand, 3 drops of food coloring, and two pieces of shredded paper.



Step 3: Prepare the leach field.

Add alternating layers, around two of each, of sand and soil. Divide each layer with a piece of the paper towel. Gently pour one cup of water over the leach field.



Step 4: Set up the model.

Find a book, a game or something to elevate the septic tank.



Step 5: Elevate the Septic Tank.

Once you are set up, shake or stir the septic tank and allow it to settle.



Step 6: Prepare the leach field.

Set up the leach field directly below the septic tank. Fill the straw with water, holding the water inside at both ends.

Student Activity for Riparian Buffers:

Does it Meander?

This activity lets students demonstrate the greater water retention capacity of a healthy riparian system. Healthy streams generally have a shallow gradient and numerous meanders. Water slowly moves along, allowing it to soak deep into the banks, which act like plant sponges. They release water during periods of low water flow, providing a buffer to the riparian dependent plants and animals.

Materials:

- Measuring cup
- several sponges
- a cookie sheet
- a pan wide enough to hold the edge of the cookie sheet
- water

Again, gradually pour a cup of water down the trough and measure the amount that makes it to the pan. This time there should be much less water in the pan, because the healthy riparian system has soaked up water into its banks. You can further experiment with the angle of the cookie sheet to simulate the effects of different stream gradients.



Step 1: Gather the materials.



Step 2: Simulate an unhealthy riparian area by laying dry sponges and to end in two rows the length of the cookie sheet, with about 5 cm of space between the rows.



Step 3: Gradually pour a cup of water down the trough between the sponge rows. Some water should seep into the sponges, but most will wash into the pan.



Step 4: Measure how much water is in the pan.



Step 5: Now lay the pre-tilted dry sponges in two parallel rows, but this time arrange them in a series of several curves. (Cut and place wedges of sponge before hand to create solid banks.)



Step 6: Again, gradually pour a cup of water down the trough and measure the amount that makes it to the pan. This time there should be much less water in the pan, because the healthy riparian system has soaked up water into its banks.



CONNECTING COMMUNITY AND WATER



Water Quality Education



Student Water Quality Packets Available!

Water Quality Packets are available for students in Buchanan, Montgomery, and Nicholas counties in the Hinkston Creek watershed, and Boyle and Lincoln counties in the Dix River watershed. Contact us to learn how your student(s) or classroom can be eligible to receive a FREE packet(s)! Water quality packets include:

- Project WET Watershed Protection Workbook
- Schoolyard Watershed Fundamentals Bandana
- Plant Me by the Stream Growable Insectnet
- Color Your Watershed Page and Colored Pencils
- Make a Macroinvertebrate Card and Playdough
- Watershed Activity Guide and Wax Paper
- Resuable Get-to-Know Your H2O tag

Participating students and schools can meet with their assigned Environmental Educator to learn more about the Project WET workbook and participate in a Bluegrass Greensource virtual or in-person water quality lesson. OR complete all 7 of the water quality activities at the end of the Septic Systems, Aquifer Buffers, and Water Quality pages on this site with a participating classroom. OR form a Watershed Heroes Team and agree to complete a school or community project to qualify to receive these packets. **These are available on a first come, first serve basis. Contact us to learn more:**

Kara Styles, Environmental Educator for Buchanan, Montgomery and Nicholas Counties: kara@bggreensource.org

Deb Carlini, Environmental Educator for Boyle and Lincoln Counties: deb@bggreensource.org

Share your Watershed Discoveries!

We would love to hear about the things you learned and see photos of you completing the watershed activities with family and friends. Scan the QR code or click [here](#) to upload photos of your playground/macroinvertebrate and your watershed coloring page. Show us where you started your seed paper, and let's see those watershed fundies hard at work in action! We want to showcase your artwork on our website to help inform our community of the importance of clean water!

Share your photos on social media with #KnowYourH2O and tag us @bggreensource!



Color Your Watershed-Download your Watershed Coloring Page:

[Hinkston Creek Watershed](#)

[Dix River Watershed](#)

COLOR THE HINKSTON CREEK WATERSHED!



- What town do you live in? Draw a green circle around your hometown.
- What streams or creeks are near your home? Trace them in blue.
- Draw a red triangle on the map to show where your school is located.
- Add your own drawings to show your favorite things to see and do in the Hinkston Creek Watershed.



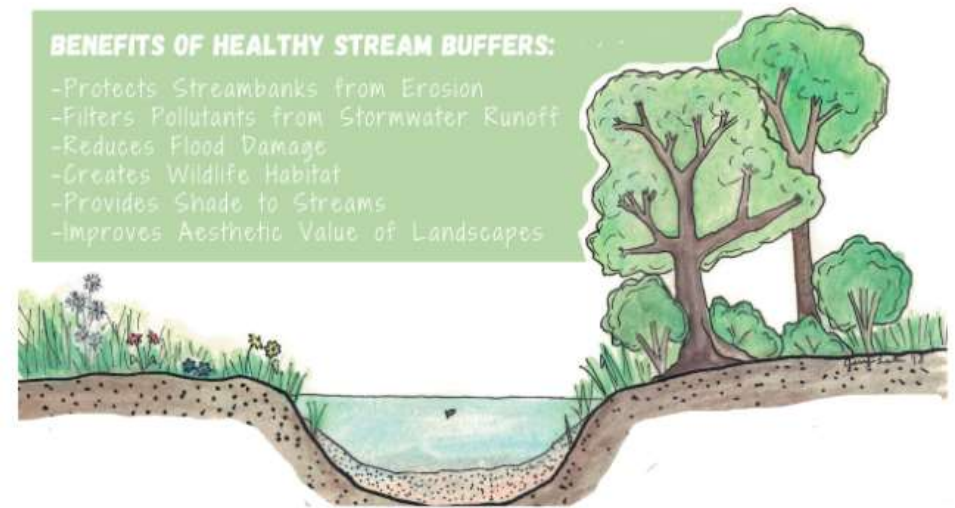
CONNECTING COMMUNITY AND WATER



UPCOMING WORKSHOPS



Septic Care workshops and grants will be offered in **SPRING 2021**



Saving Our Streambanks workshops and grants will be offered in **JANUARY 2021**

FARM TOUR VIDEOS

FARM TOURS 2020/2021

- Working with Conservation Districts, NRCS, and local farmers to help promote Ag Conservation Practices
- Looking for interested farmers and farms
- To Date:
 - ✓ *The Wright Place Angus* in Bourbon Co – Oct 23
 - ✓ *The Final Frontier Farm* in Bourbon Co – Nov 9



FARM TOUR VIDEOS

The Wright Place Angus

October 23, 2020

Bill Wright



FARM TOUR VIDEOS

The Final Frontier Farm

November 9, 2020

Kathy Meyer



2021 / 2022 COMMUNITY GRANTS

WATER QUALITY MINI GRANTS

- BGGS approved for another 319 grant to continue watershed improvement efforts (Septic, Riparian, WQ Education, etc.)
- New in 2021/2022 → **Water Quality Mini Grants** to watershed stakeholder group participants
- 5 x \$5,000 projects with 20% match
- Seed money across the watersheds to spark community wide participation and ownership of the watershed improvement program
- Ideas: riparian buffer establishment and stream bank restoration/ revegetation projects, water quality monitoring projects, stream clean-ups, urban and rural runoff retrofits, and more

QUESTIONS/CONTACT

Lindsie Nicholas, P.E.

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Bluegrass Greensource
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859-266-1572



**BLUEGRASS
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LICKING RIVER BASIN UPDATE

-MAHTAAB BAGHERZADEH-

LICKING RIVER WATERSHED WATCH UPDATE

-MARIE HALPIN-

CONSERVATION DISTRICT STATE COST-SHARE UPDATE

-VALERIE TIPTON-

MT. STERLING WATER & SEWER UPDATE

-RICK FLETCHER-

NICHOLAS COUNTY UPDATE

-JUDGE STEVE HAMILTON-

BOURBON COUNTY JOINT PLANNING COMMISSION UPDATE

-ANDREA LACY-

BREAKOUT SESSIONS

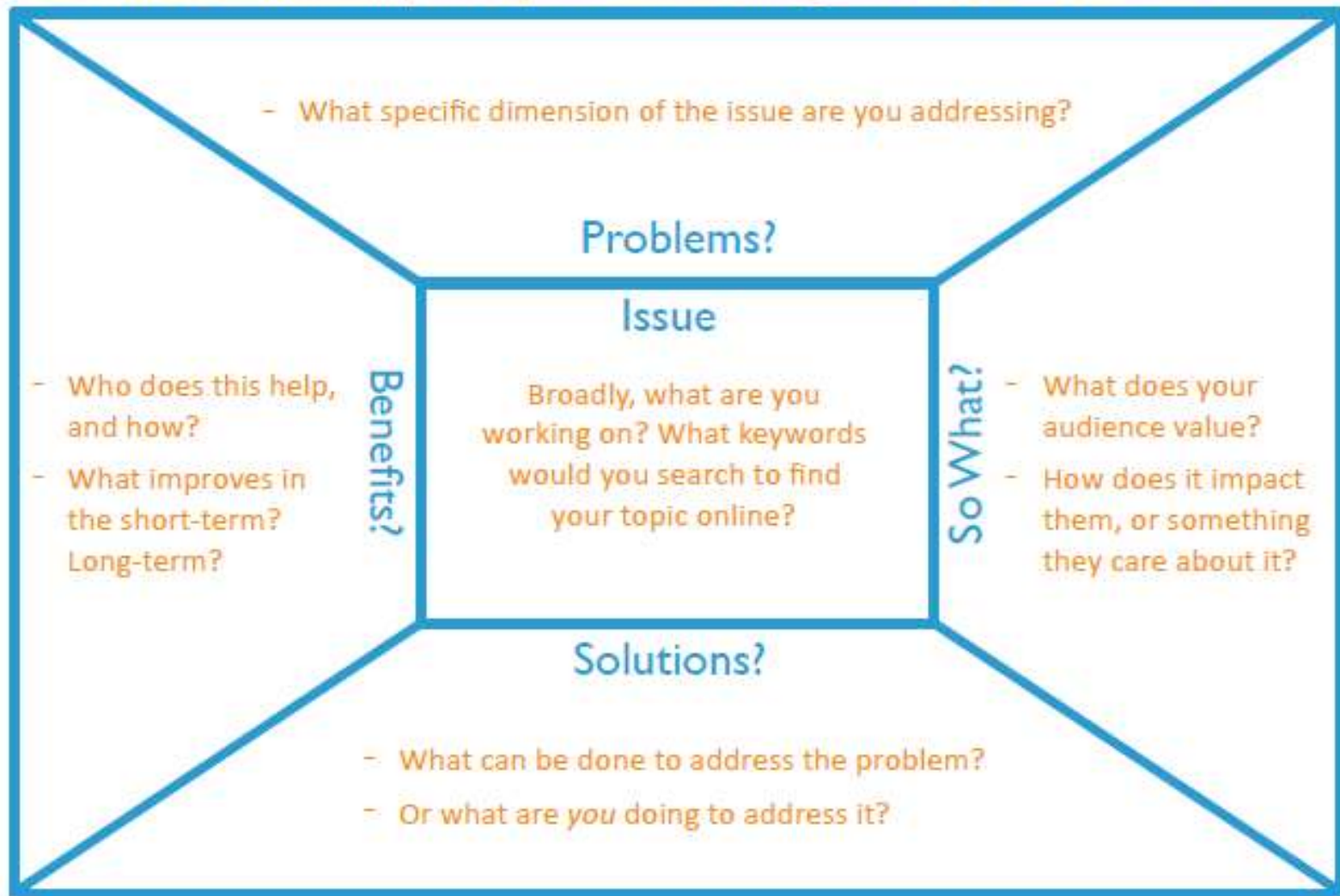
MESSAGE BOX ACTIVITY

COMPASS™ MESSAGE BOX

- A tool created to help scientists better communicate their findings and research
- **We can use as a tool to think through our different messages and how they communicate the particular issues we want to focus on in the watershed**
- Look at:
 - ☐ Target Audience
 - ☐ Issue
 - ☐ Problem
 - ☐ So What
 - ☐ Benefits
 - ☐ Solutions

HOW IT WORKS

Audience: Who is impacted by this? Who can change this? Who cares about this?



HOW IT WORKS

COMPASS™ MESSAGE BOX

- The goal is to identify the information that is critical to your audience -***what really matters to them***- and share that
- Identify your audience first
- After that, you can start in any section the makes sense to you, and work from there
- By the end you should only have 2-5 lines per section
 - with the exception of the issues and target audience section (a few key words)

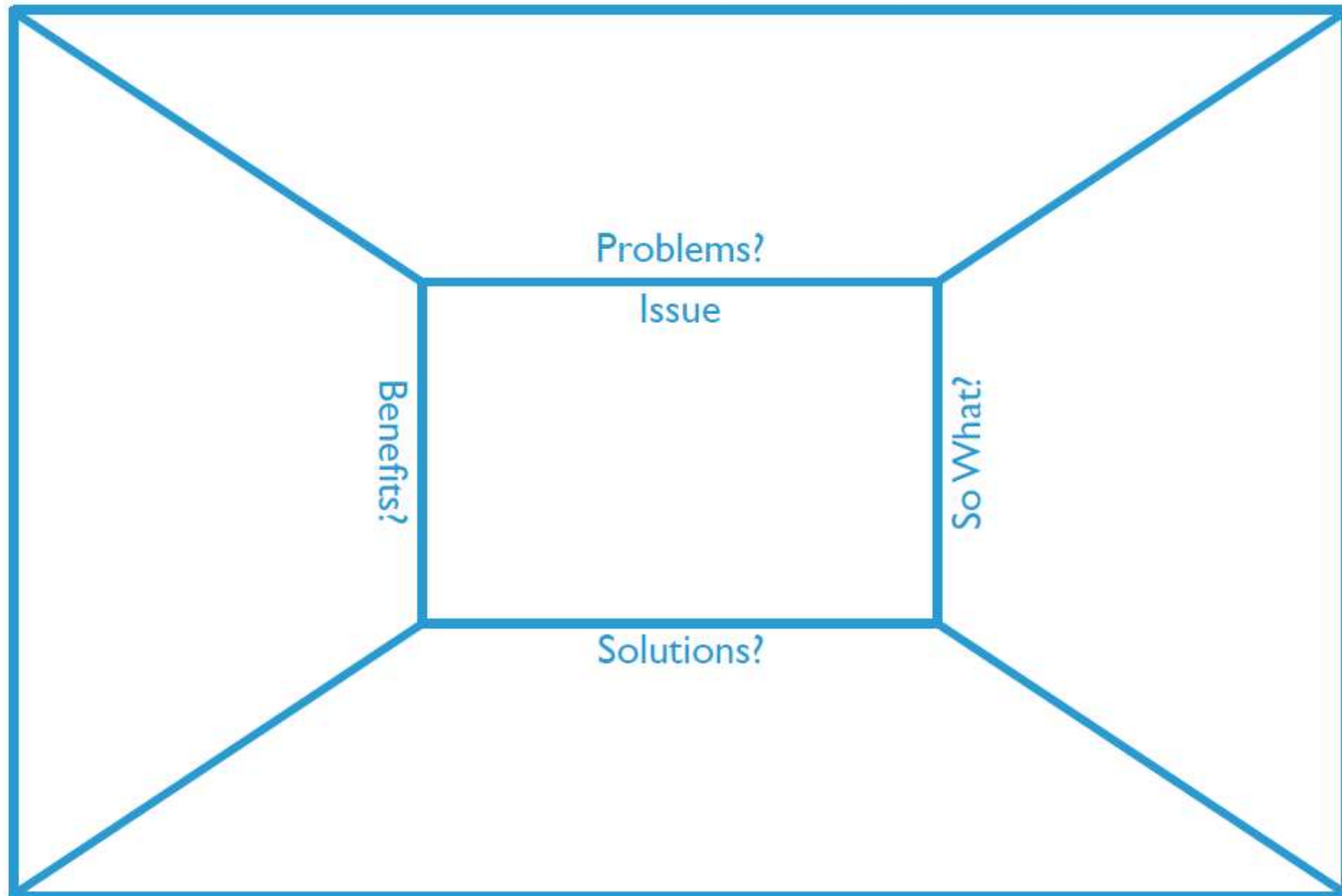
BREAKOUT SESSIONS

COMPASS™ MESSAGE BOX FOR DIX RIVER WATERSHED

- Breakout into three groups spend 15 minutes working on a Message Box draft for the topics below:
 - ☐ Encouraging streamside buffers
 - ☐ Generating new interest in waterways and related projects
 - ☐ Increasing Watershed Watch participation, volunteer samplers
- We will come back at the end and briefly share

COMPASS™ MESSAGE BOX

Audience:



THANK YOU

- Next Meeting – TBD
- Start thinking about the stakeholder led WQ Mini Grants
- Closing thoughts/comments

LINDSIE NICHOLAS, P.E.

WATERSHED COORDINATOR

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