DIX RIVER WATERSHED STAKEHOLDER MEETING

November 19, 2020 1:30 – 3:00 PM Virtual Event



AGENDA

- 1. Dix River Trivia (5 min)
- 2. Announcements and Updates (60 min)
 - Clarks Run & Hanging Fork Project Update
 - Danville WWTP Review and Update
 - Danville Stormwater Program Priorities
 - KY River Basin Update
 - PH II Sewer Project Update
 - CREEC Update
 - Centre Environmental Association Projects
 - Logan's Fort Trial 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 Dix River 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



DIX RIVER TRIVIA

CLARKS RUN & HANGING FORK WATERSHED IMPROVEMENT PROGRAM UPDATES

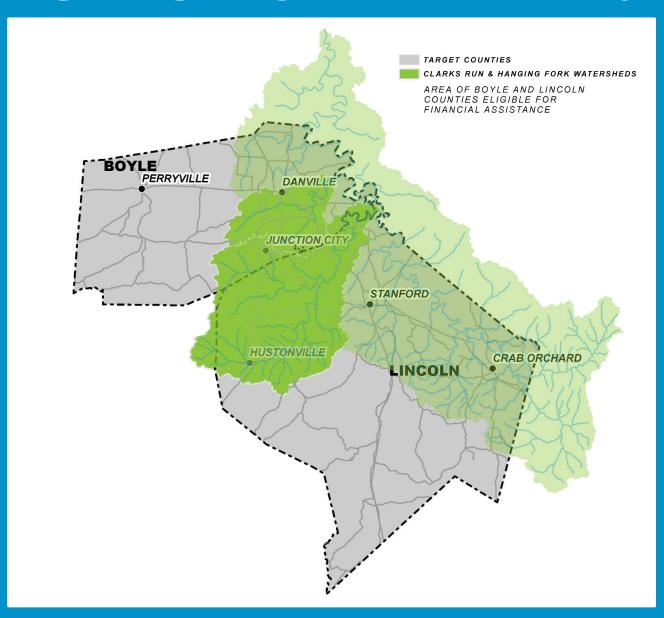
Dix River Stakeholder Meeting

November 19, 2020

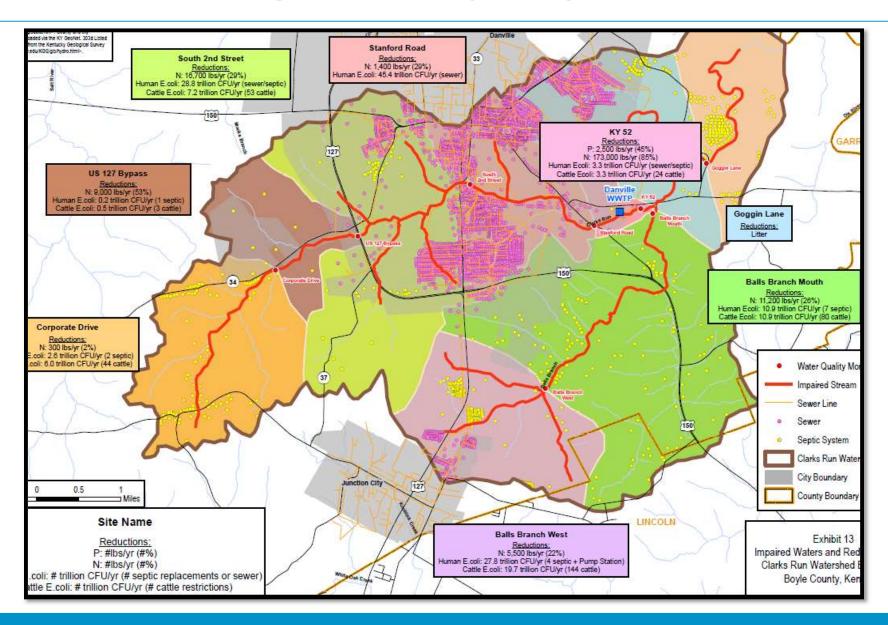




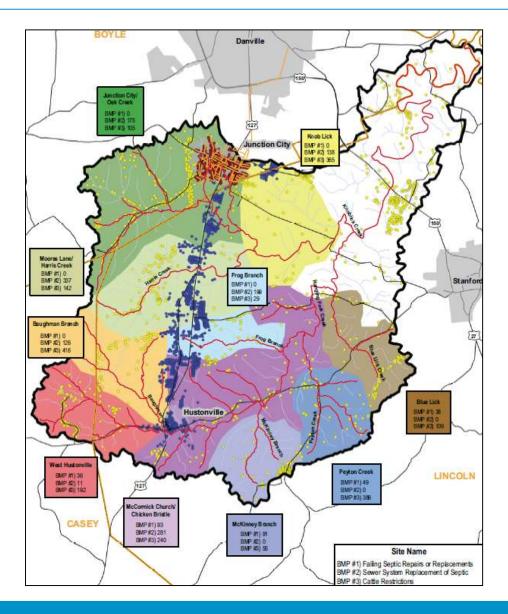
CLARKS RUN & HANGING FORK WATERSHED



CLARKS RUN



HANGING FORK



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





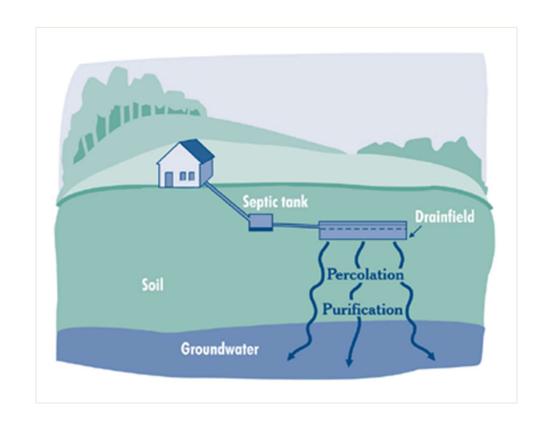
319 WATER QUALITY GRANT

- Administered through the KY Division of Water
- Implementation of portions of the Clarks Run and Hanging Fork Watershed Based Plans
- 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 in Boyle and Lincoln Co from 2018-2020 with **100** attendees across the focus watersheds

Workshop Date	County	No. Attendees	Pumpout Applications	Repair Applications
4/21/2018	Boyle	18	5	3
4/24/2018	Lincoln	7	3	1
2/26/2019	Boyle	10	3	1
3/12/2019	Lincoln	16	9	6
3/03/2020	Boyle	28	13	5
3/16/2020	Lincoln	21	7	4
Total		100	40	20
Total A	pplications Re	ceived =	60	

SEPTIC CARE WORKSHOPS



March 2019, Lincoln Co

March 2020, Boyle Co

SEPTIC PROGRAM PROGRESS

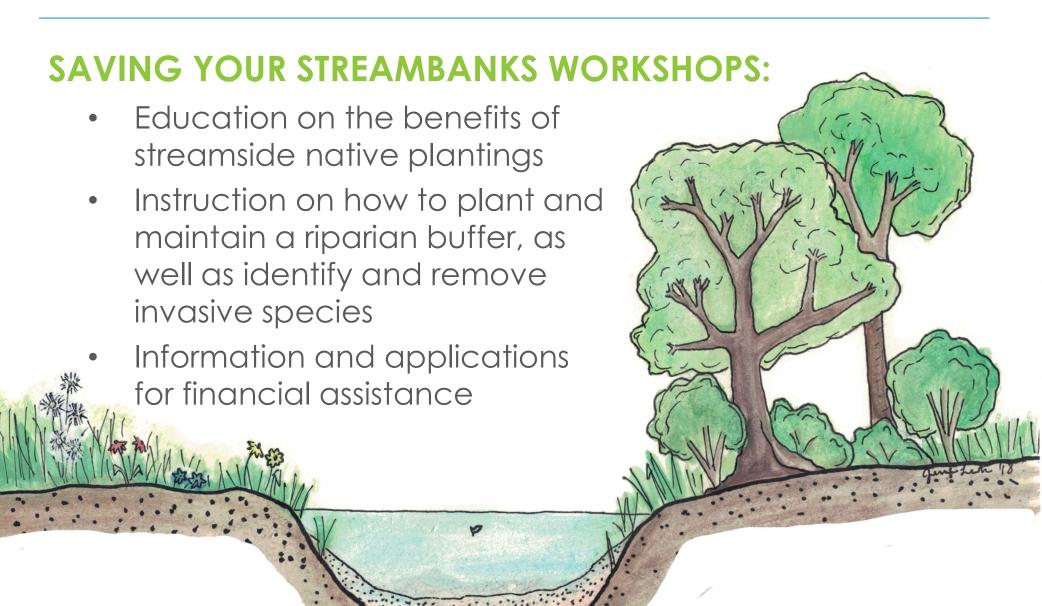
	Completed Septic Care Projects from 2018-2019 Applications	Septic Care Projects from 2020 Applications	Total Clarks Run & Hanging Fork Projects to Date
Pumpouts	13	17	30
Septic Repairs	5	4	9

2020 Septic Project Update:

- 5 of the 17 pumpouts are completed to date
- 2 of the 4 repairs are completed to date



RIPARIAN BUFFER PROGRAM



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

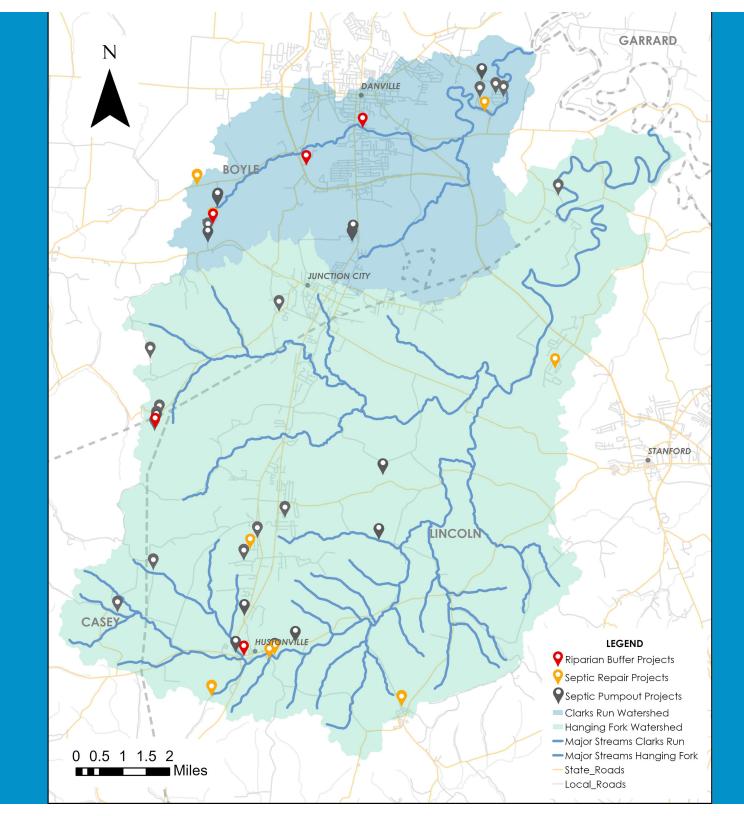
Project	County	Linear Feet Planted/ Restored
Danville Buffer along Clarks Run Trail	Boyle	300 LF
Denham Property Buffer on Oscar Johnson	Boyle	120 LF
Hustonville Ruritan Park Buffer Project	Lincoln	225 LF
Lawson Property Buffer on Alum Springs Cross Pike	Boyle	200 LF
Wilderness Trace Environmental Buffer	Boyle	300 LF





Clarks Run and Hanging Fork

BMP Implementation Map



WATERSHED BASED EDUCATION



- 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

in. The site offers information about insources that Blackross Grosssource promotor throughout Central Kentucky to ringge bor heir own matersheet, alona with arrant coportunities to help hard heir management proclices to informe water qualify

Program Description

apacity for the long-term appreciation, understanding, and improvement of each water-steed and its tribucacies. To reach these objectives, Bluegraph Greenwurce offers enhantly sturibles to increase knowledge of tical water quality income for local 200 ero, officials, and K-12 students and collaborates with overty 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 divales to a common body of water. We all Eve in a watershed and we all have an influence on also affects the larger sustainhed downstream. There are many things we can do to take care of our scaturation's and the streams, rivers, and takes well be readed

What is Stormwater Runoff?

Rainwater or mow melt ect absorbed by plants or scaked into the soil flows off the roofs, lawns, roodways, parking lots, parks, and farmland in our watershed. We call file little dist. Tertificers, sessings, and petitivestock waste, in cities, much of the stormwater canoff enduration storm drains that flow to our streams, rivers, and lakes



Introduction to Water Quality

thinking, ownmang, or supporting assatis life. From water socially compose a health risk for people, as well as for ecosystems, in the following videos. Ms. Rachel walds us through

health of our majornova. Let's break player the name, accepts flows in water, reconsider below without a microscope; invested rates at internal skeletor. These countyres are materbody can teach us a lot about the environmental health of a cross or stower.





Water Quality Testing

Macroinverthrates

Useful Water Quality Testing Tools:

Breaking Down the Parameters - A great too ito explore what all these water quality lesting parameters resilving an inceptance below for some example.)

Biotic Index Data Sheet - Print this sheet of use the galline calculator from the Leak Pack Network







Conductivity



Temperature



Use this macro intertebrate ID Key to help you identify the type of marron collected in your own biological assessment

Kentucky Water Health Portal:

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

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

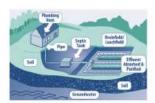
2016 Integrated Report - Summery of mater quality conditions in the state are to the Kentucks Observe of Water



Student Activity for Septic Systems:

Make a Model Septic System

It can be used as a basic introduction to where water goes after being flushed or as a beginning artivity for a series of more in-death activities.



source. The fank removes solide by holiding the maximum as the tank for 24-72 kines, allowing heavier within to settle as shown and the higher particles to how access at the too

Materials Needed

- 2 clear diamer or 2 diaes land
- · send
- · paper towel For politica ...
- Food coloring
- Devible straw
- · masking tipe



Step 1: Label the glasses or jars.



Step 2: Prepair the ceptic tank.

decays of four coloring and the pieces of shooten's



Step 3: Prepare the leachfield.

noil. Dissilie each laws with a place of the paper town



Find a book, a game or something to elevate the sestic



Step 3: Elevate the Septic Tank

Once you are set up, shake an oth the ceptic tank and

the shaw with water, horsting the water inside at both

Student Activity for Riparian Buffers:

Does it Meander?

stograders. Water glowly recess along, allowing it to rook deep into the tunion, which act file giant sprages. They release water during periods of low waterflow, providing a haffer

Moterials

- · Mearingup
- · a cookin sheet
- + a pan mide enough to hold the edge of the cookle sheet

Again, gradually your a cap of water down the trough and measure the around their makes it to the per. This time there should be much her water in the per, because the healthy ripories system has epoked up water into its banks. Yes can further expensionals with the angle of the cookie sheet to stradge the effects of different stream gradients.





Step 2: Throughous an unboutfity riparties area by laying. sky spranges and to stud in two most the length of the coolee sheet, with about 5 cm of speed between the



Step 3: Grechally poor insign of voter store the trough into the sponges, but most will wash into the par-



Step 4: Measure how much water is in the pon-



Step 5: Now lay the pre-trimmed dry sponges in two parallel rows, but this time arrange them in a series of helorefund to create solid turks.)



Step 6: Again, gradually pour a cup of water down the trough and recourse the amount that moles 4 to the pan. This time there should be much less water in the pon, because the healthy rissorian system has soaked un water into its bunks.



Water Quality Education





Student Water Quality Packets Available!

the Hintorian Creek watershed, and Boyle and Lincoln counties in the Dischwer watershed. Contact up to learn how your student(s) or a learnoom can be aligible to receive a FREE packet(s)! Water quality

- Workenbed Activity Guide and Was Paper
- . Resistive Get to Know Your H2O tag

person maker quality lessors. OR complete all 3 of the water quality activities at the end of the Septi System, Alparian Buffer, and Woler Quality pages on this site with a participating classimons. Off form

DebiCarlos Environmental Educator for Books and Lincoln Counters, debilipaciono

Share your Watershed Discoveries!

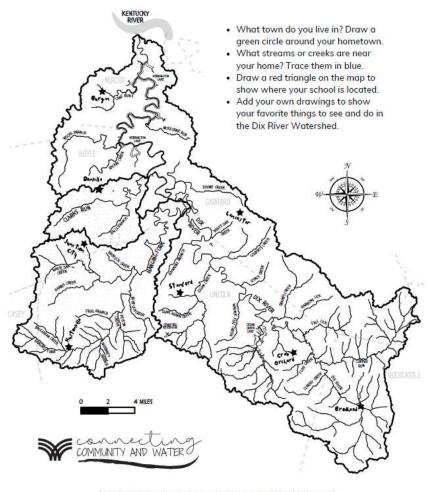
code or citis lique to upload photos of your playdough macroinvertebrate and your watershed coloring page, three us where you attented your seed pages, and let's see those watershed hardana bandaras in action! We want to showcase your artwork on our website to help inform our communi-





Color Your Watershed-Download your Watershed Coloring Page:

COLOR THE DIX RIVER WATERSHED!



Visit bggreensource.org/watershed-improvement to learn more! This work was funded in part by a grant from the U.S. EPA under §319(h) of the Clean Water Act.



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
- First stop \rightarrow Stallard Family Farm in Boyle Co Nov 3





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.

Watershed Coordinator Bluegrass Greensource 835 National Ave, Lexington, KY lindsie@bggreensource.org 859-266-1572



DANVILLE WWTP OVERVIEW AND UPDATES

-MIKE GALLOWAY-

KY RIVER BASIN UPDATES

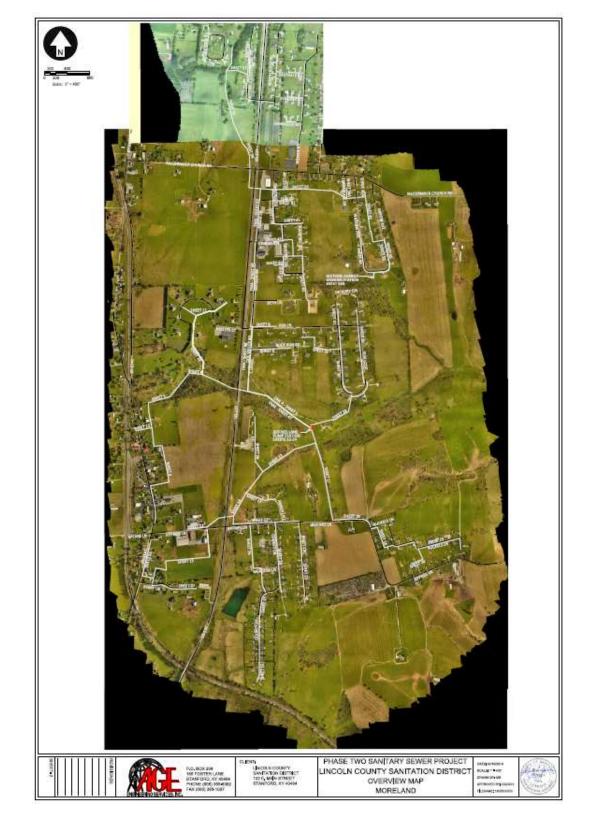
-MALISSA MCALISTER-

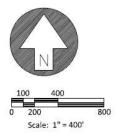
DANVILLE STORMWATER PROGRAM PRIORITIES

-EARL COFFEY-

US HIGHWAY 127 PHASE II SEWER PROJECT UPDATE

-BILL PAYNE-











REVISION(S)



P.O. BOX 204 165 FOSTER LANE STANFORD, KY 40484 PHONE (606) 365-8362 FAX (606) 365-1097 CLIENT:

LINCOLN COUNTY SANITATION DISTRICT 102 E. MAIN STREET STANFORD, KY 40484 PHASE TWO SANITARY SEWER PROJECT LINCOLN COUNTY SANITATION DISTRICT OVERVIEW MAP MORELAND

DATE: 04/19/2019 SCALE: 1" = 400" DRAWN BY: MS APPROVED BY: GOOCH FILENAME: 180550VER



Lincoln County Sanitation District

Frequently Asked Questions

As of October, 2020

Benefits

- Why invest the time and money to install a sewer system in the west end of Lincoln County?
 - a. Prevention of discharge from faulty septic systems will improve the water quality and the sanitation at each home.
 - The Hustonville Elementary School is now a cleaner and safer place for students to attend since sewer service is in place. They no longer use Styrofoam plates in the lunchroom.
 - c. Some reports indicate property values increase by \$10,000 per site when sewer service is in place. This strengthens property resale values.
 - d. If sewer is available, more businesses that need sewer (restaurants, salons, offices, etc.) will locate in western Lincoln County.
 - e. Sewer use would help reduce the pollution of Hanging Fork Creek which eventually pollutes Herrington Lake-- the source of our drinking water.
- 2. Will sewer be less expensive over the long run than septic tank and lateral line service?
 - a. Analysts advise that while a one-time tap on and installation for sewer is significant, the elimination of septic tank and septic line repairs or replacement is a cost savings and enhances property values for resale or financing.

Origination

- 1. Why is sewer service being considered for the West End of Lincoln County?
 - A survey conducted by Third Rock Consultants in 2006-07 identified high levels of
 E. coli bacteria in the Hanging Fork Creek watershed with failing septic systems
 and straight pipes to blame. 75-80% of these E. coli bacteria were human in origin.
- 2. Who will receive the benefit of this sewer?
 - a. About 1,500 customers south of Junction City to Hustonville running parallel with US 127 will eventually be served.
- 3. Why is this project being done in phases?
 - Funding is a key factor. Loans and grants have been obtained to pay for the construction.

Oversight

- 1. What is the role of Lincoln County Fiscal Court in funding and oversight?
 - a. The Court in April 2011 formed the Sanitation District to figure out the most feasible way to make sewer a reality for the fastest growing end of the county. The Fiscal court has not issued any bonds for this project and has no liability for the financial viability of this project. The county gave the District \$20,000 for startup funds.
- 2. Is there a Board to oversee the project? Who are the members of the Board? Are they compensated?
 - a. A five person board was appointed by the Judge Executive. The current members are Bill Payne, Wayne Galloway, Sheree Gilliam, Larry Dunn and Joseph Hafley. The Board receives no compensation for their time or services.
- 3. Who are the third party service providers?
 - AGE Engineering provides the engineering services. Jonathan Baker is the attorney for the Board.
- 4. What is the role of BGADD?
 - a. Bluegrass Area Development District has assisted in loan and grant applications.
- 5. Waste Treatment
 - a. The City of Danville has agreed to treat the sewage in accordance to an executed agreement that specifies the services and the costs.

Users

- 1. How many households/customers are projected for this project?
 - a. About 600 in Phase I and 365 in Phase II.
- 2. Is it mandatory that I hook on?
 - a. Yes if tap service is available as required by Lincoln County Ordinance.
- 3. Will I have to pay for getting the line from my house to the sewer hook on point?
 - a. Yes to a licensed plumber of your choice.
 - b. If you already have a tap available, there will be a \$100 inspection fee along with an application for service form.
- 4. Are there any agencies that can assist low income residents in hooking on?
 - a. Possibly through a USDA Rural Development program
- 5. How much will I be charged for a family of 4 using 3,000 gallons of water?
 - Based on the budget submitted to USDA, the sewer bill would be approximately \$50 for 3,000 gallons of water usage.
- 6. Who will handle the billing?
 - The City of Hustonville will handle the sewer billing along with the current water billing.

Water Quality Justification for a Hustonville Sewer Extension:

- A cooperative effort among the local Dix River Watershed Council, the Kentucky Division of Water and Third Rock Consultants resulted in the <u>2009 completion of a Watershed Plan for</u> improvement of the Hanging Fork Watershed.
- The Watershed Plan is <u>based on intensive water quality sampling</u> at 14 Hanging Fork sites between 2006 and 2007, and further sampling for pathogens at 54 sites in 2007-08.
- Almost half of the waterways (or 104 of 234 stream miles) in the Hanging Fork watershed were shown to be unsafe for human wading/swimming use after comparing the sampling results to the Kentucky Division of Water's water quality standard.
- Sampling results indicated that <u>concentrations of E. coli often ranged from ten to 1,000</u> times greater than the statewide limit for safe wading/swimming. At their highest levels, some locations in the Hanging Fork watershed displayed E. coli levels similar to those found in the inflow to a sewage treatment plant.
- Overall, E. coli concentrations were much higher in the southern portion of the watershed, averaging nearly double those found in the northern portion. This area includes <u>Hustonville</u>, Chicken Bristle, McKinney and McCormack Church.
- Despite the dominant agricultural land use of the watershed, <u>human inputs were</u>
 overwhelmingly shown to be the source of fecal inputs at the ten sites at which DNA testing
 was conducted. Generally, human inputs were found to contribute 75 percent of the fecal
 bacteria in the watershed. (Cattle were identified as the second most abundant source.)
- The most significant human health impact in Hanging Fork is human fecal pollution of the watershed.
- Septic system failure in this rural watershed is identified as main cause of this water quality problem. Of the approximately 2,700 septic systems in the watershed, it is estimated that 37% are failing.
- The 2009 Watershed Plan's recommendations for reducing pathogen levels in the Hanging Fork Watershed are:
 - Replacement of septic systems with sewer collection and treatment
 - o Rehabilitation of failing septic systems
 - Restriction of cattle from waterways

Thank you!

CREEC UPDATES

-PRESTON MILES-

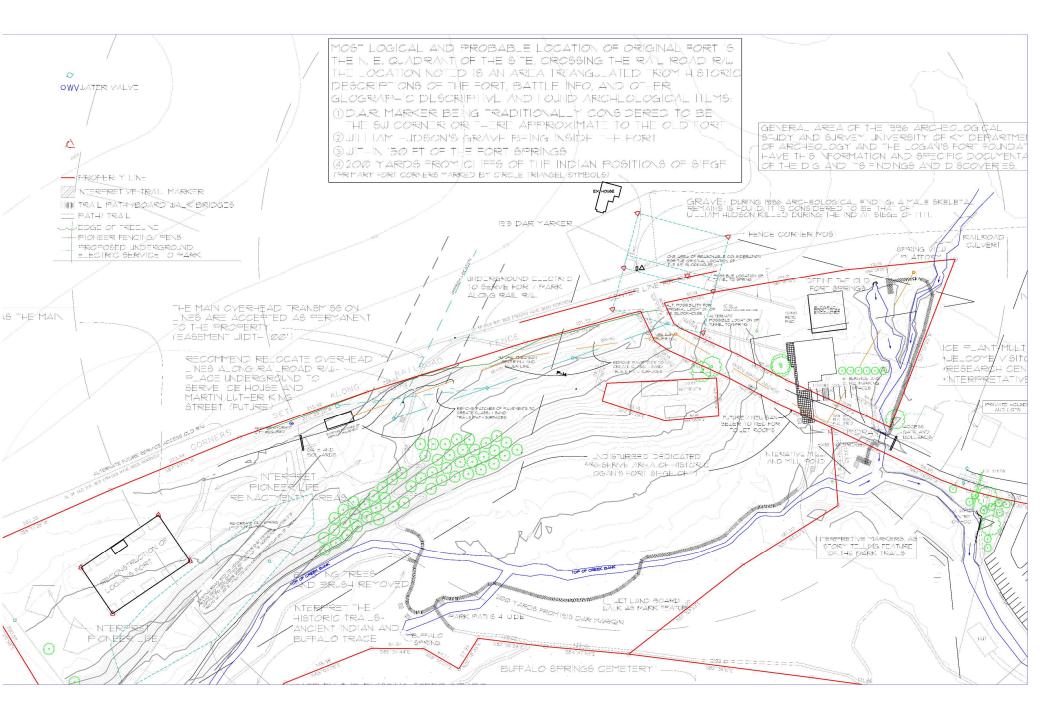
CENTRE ENVIRONMENTAL ASSOCIATION PROJECTS

-BRETT WERNER-

LOGAN'S FORT TRAIL UPDATE

-JANE VANHOOK-

LOGAN'S FORT PARK MASTER PLAN



BREAKOUT SESSIONS

MESSAGE BOX ACTIVITY

COMPASSIM MESSAGE BOX

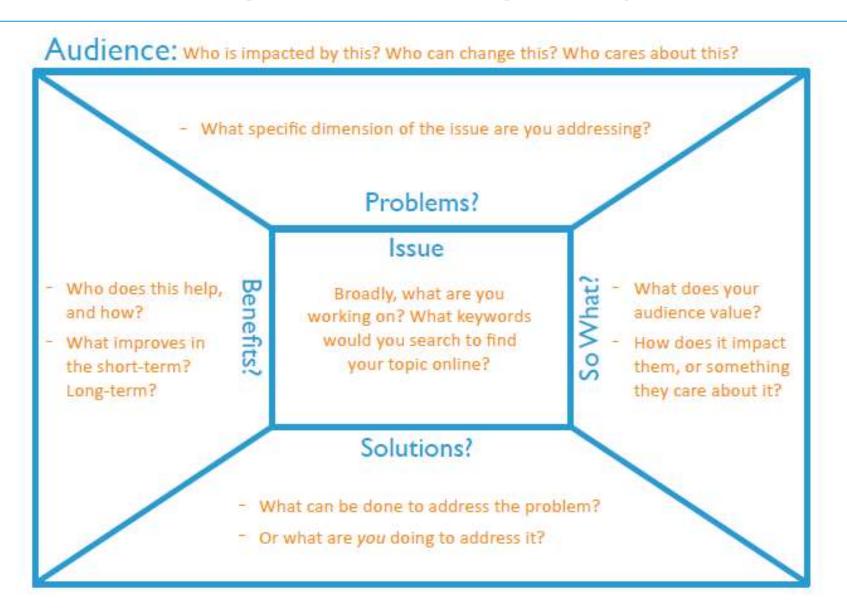
- A tool created to help scientists better communicate their findings and research
- We can use as a tool to think through our different messages and how they communicate the particular issues we want to focus on in the watershed

LOOK GI.	
■ Target Audience	☐ So What
□ Issue	Benefits

Look at

CÔMPASS

HOW IT WORKS



HOW IT WORKS

COMPASSTM 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)

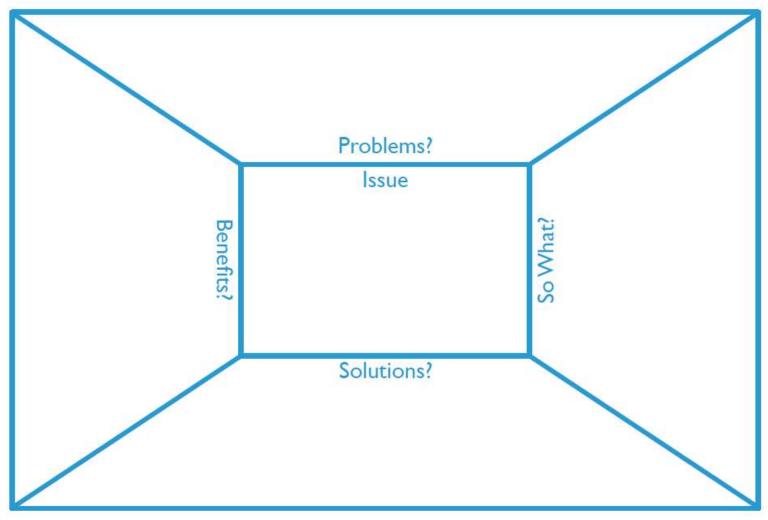
BREAKOUT SESSIONS

COMPASSTM 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

COMPASSTM 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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BGGREENSOURCE.ORG 859-266-1572







