



South Fork Kent Creek Watershed Based Plan Stakeholder Meeting #1

Prepared by Alyssa Robinson

July 11, 2019



Olson Ecological
Solutions, LLC



Brief History

- ◆ 2016-Rockford Park District partners with Olson Ecological Solutions and JadEco Natural Resources to address water quality impairments on park district-owned lands (204 acres)
- ◆ 2017-“A Cleaner Levings Lake: Putting Nature to Work”
- ◆ Levings Lake Concerns:
 - ◆ Algae blooms
 - ◆ Beach closings
 - ◆ Turbid water (cloudy or hazy water due to stirred up sediment)
 - ◆ Shallow and silty bottom



Brief History

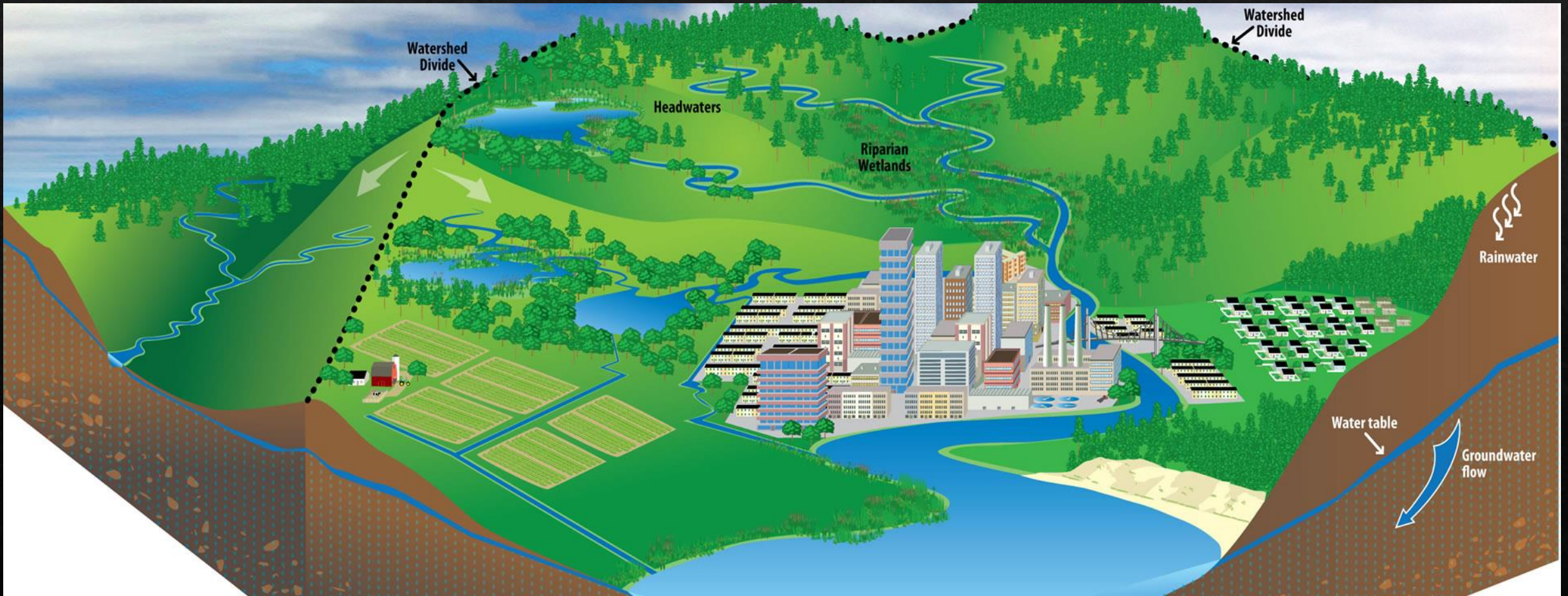
- ◆ Implemented Recommendations
 - ◆ Floating islands
 - ◆ Filter strips
 - ◆ One constructed wetland
 - ◆ Muck pellet treatment (current)
- ◆ Plan limitations: only addresses issues on park district-owned lands
- ◆ More comprehensive and sustainable solution → address problems upstream



A Cleaner Levings Lake: Putting Nature to Work, page 36

What is a Watershed?

- ◇ A geologic area within the boundary of a drainage divide
- ◇ Watershed health=a reflection of land use and land management within the watershed



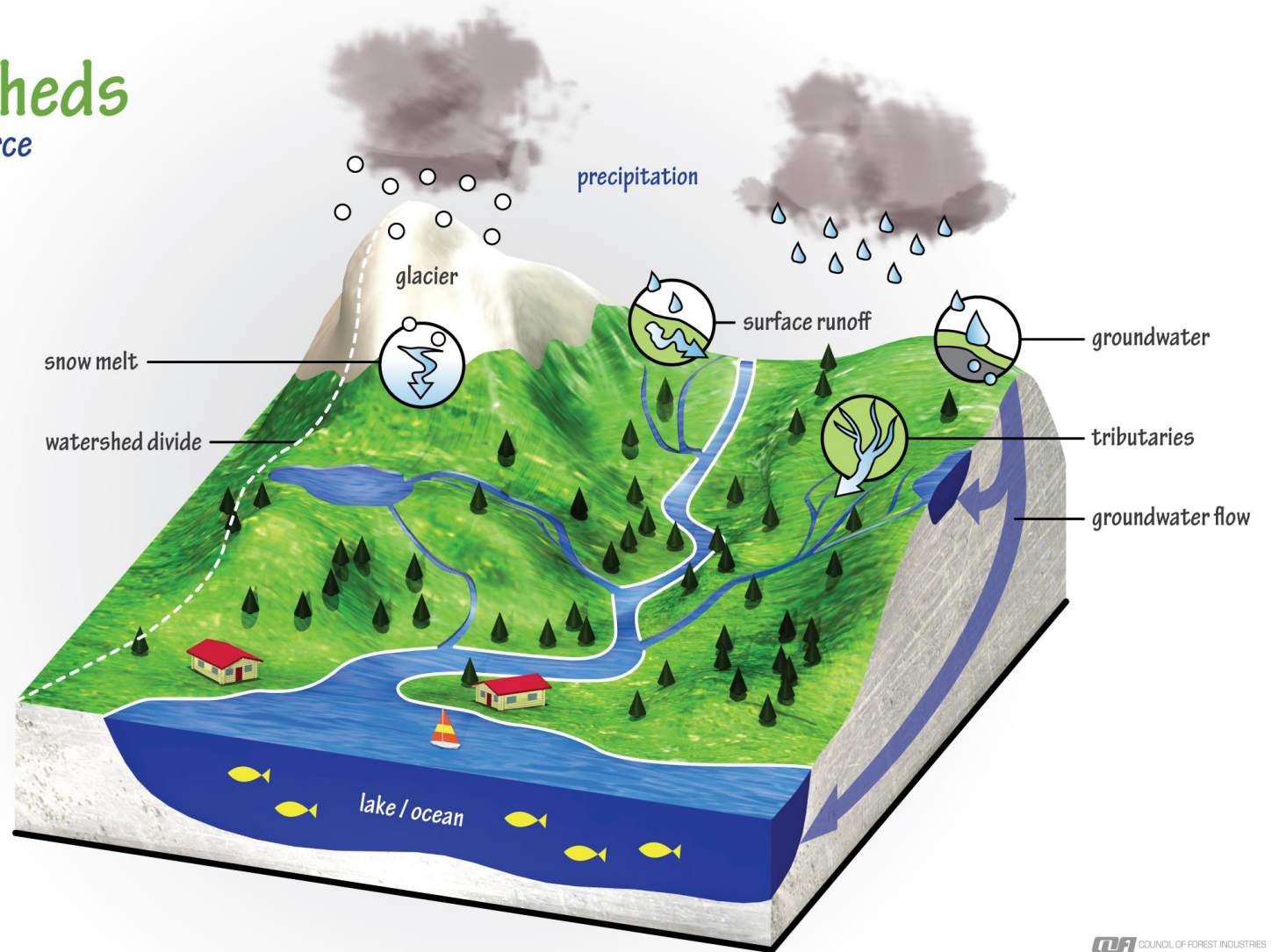
Mississippi Watershed Management Organization

What is a Watershed?

watersheds

our water source

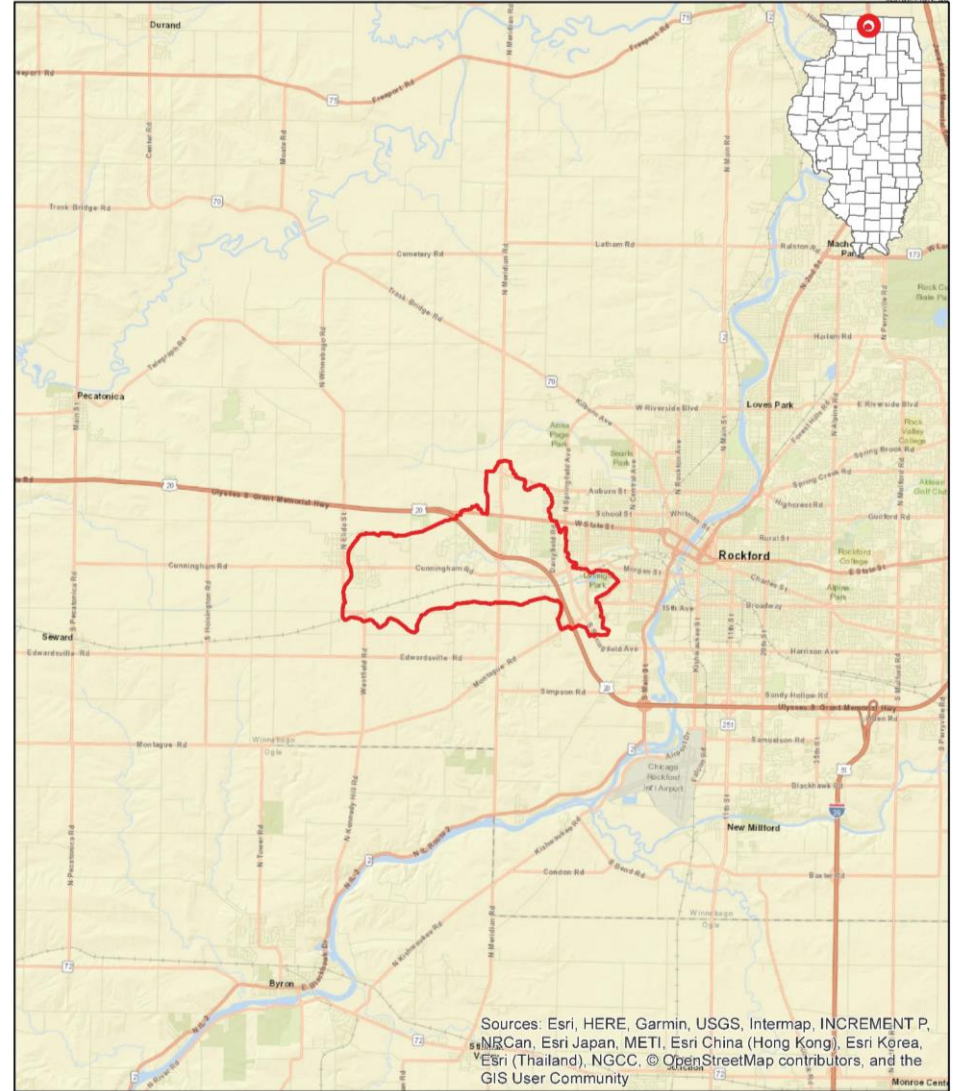
-  snow melt
-  surface runoff
-  tributaries
-  groundwater



Project Location: South Fork Kent Creek Watershed

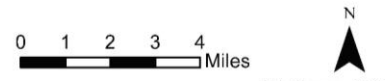
- 7,400 acre watershed
- Winnebago County
- West side of Rockford
- West of the Rock River
- Includes Levings Lake

South Fork Kent Creek Watershed Location



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

 SFKC Watershed



Data Sources: ESRI
Edited: February 7, 2019
Map created by Kristin Adams with Tallgrass Restoration, LLC

South Fork Kent Creek Watershed Watershed Boundary



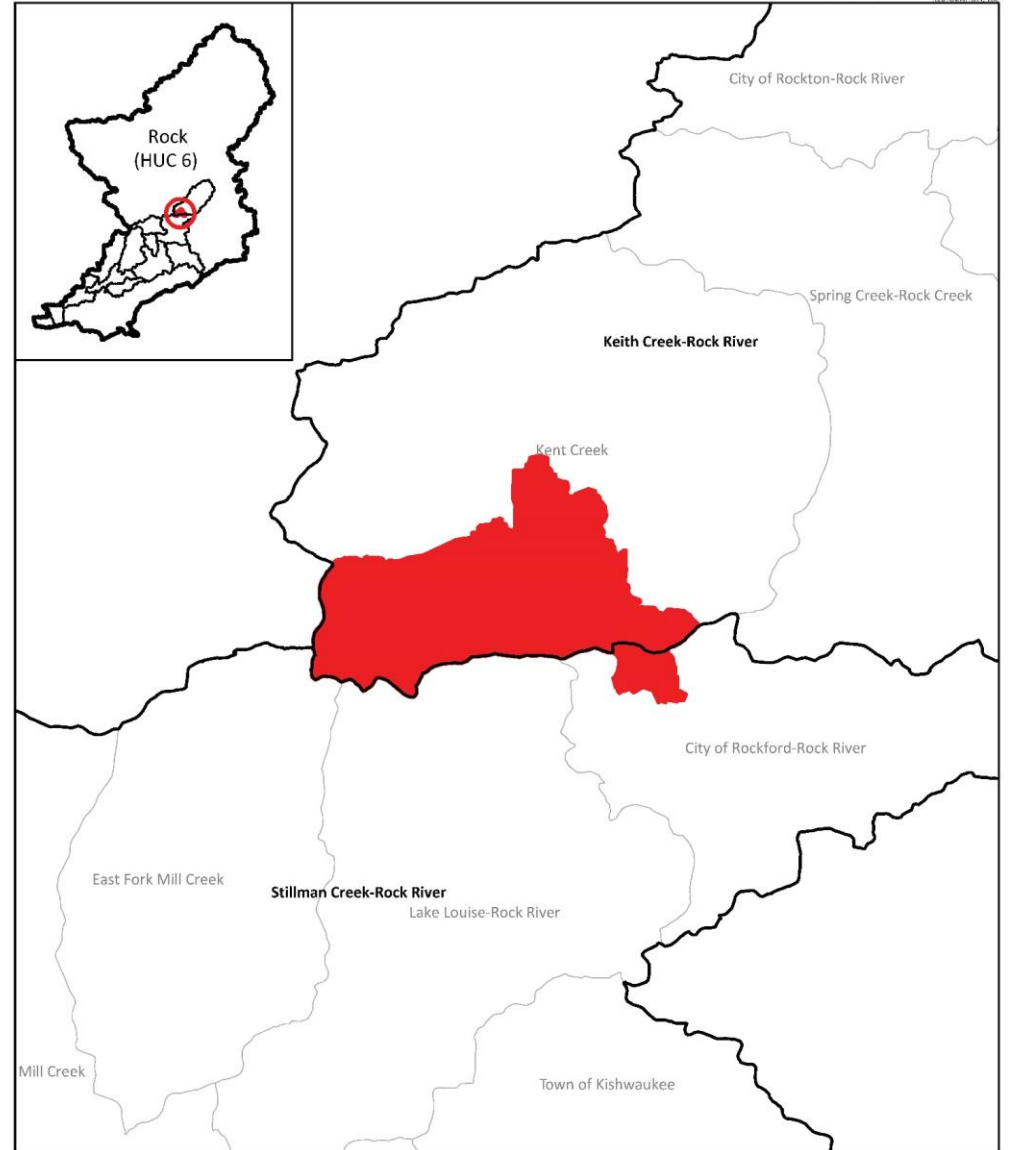
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community




 Final SFKC Watershed



Map created by Kristin Adams with Tallgrass Restoration, LLC
Data Sources: ESRI
Aerial Date: July 30, 2017
Edited: 3/6/2019

South Fork Kent Creek Watershed Watershed Locations



 HUC10
 HUC12
 SFKC Watershed

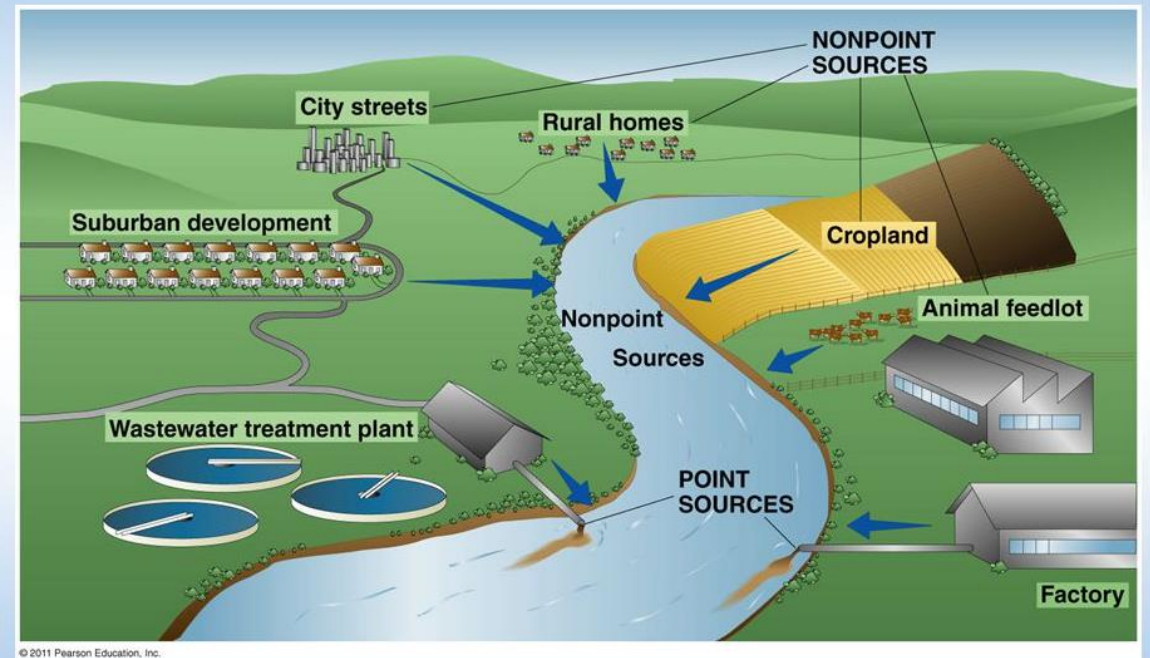


Data Sources: USGS
Edited: February 7, 2019
Map created by Kristin Adams with Tallgrass Restoration, LLC

Illinois EPA Section 319 Grant

- ◇ IL EPA receives federal funding
- ◇ Section 319 Nonpoint Source Management Program of the Clean Water Act
- ◇ Projects that prevent or diminish water quality impairments caused by nonpoint source pollution
- ◇ Not regulatory, voluntary participation and implementation
- ◇ Competitive-Successful applicants show the greatest potential to improve water quality.
- ◇ 60:40 match
 - ◇ IL EPA provides 60% of grant funding, while grant recipient must provide 40% via money spent or in-kind services

Point and nonpoint sources

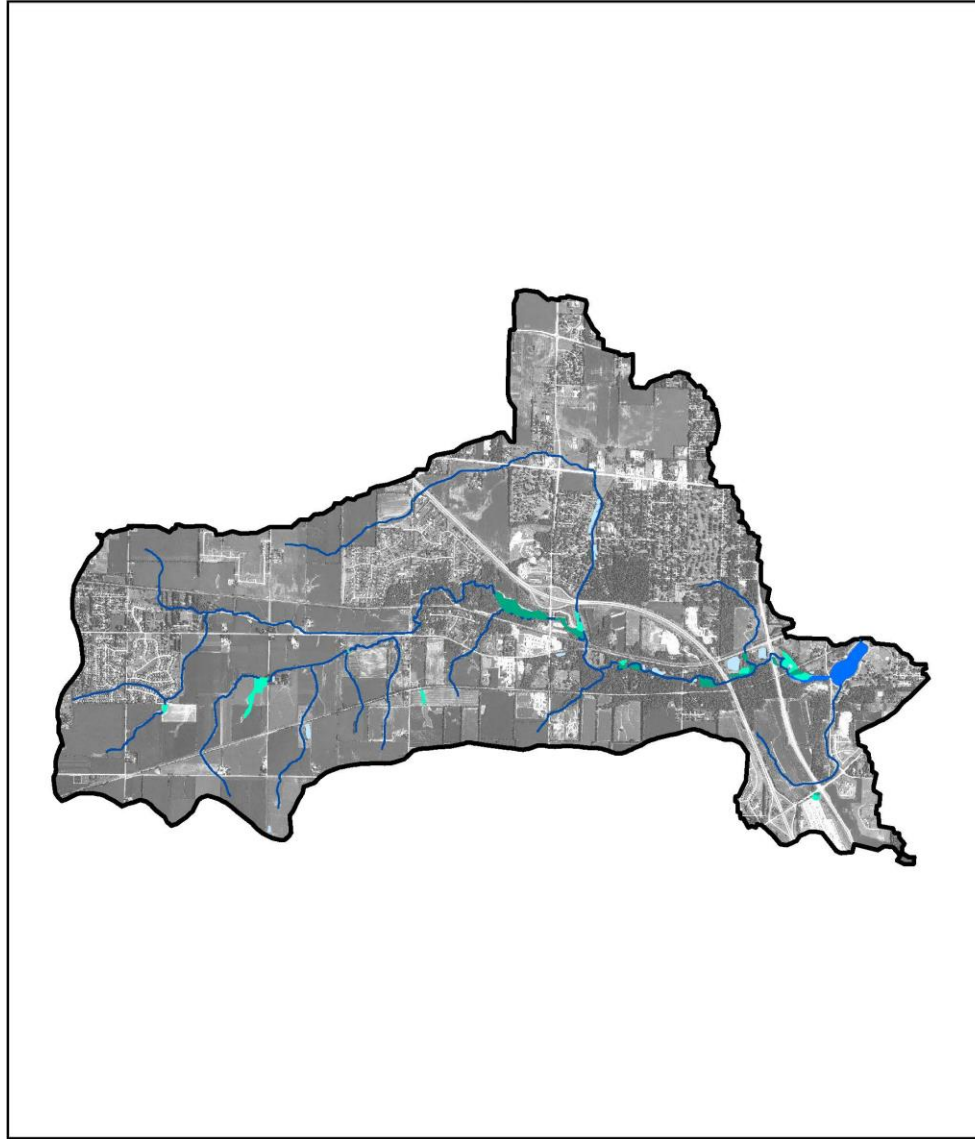


Pearson Education, 2011

What is a Watershed Based Plan?

- ◆ Natural Resource Inventory
 - ◆ Assessment of historical and current conditions, features, and land uses
- ◆ Stakeholder Involvement
- ◆ Technical Guidance
- ◆ Identification of Problems and Concerns
- ◆ Recommendations
- ◆ Implementation Schedule
- ◆ Financial and Technical Resources
- ◆ Monitoring Strategy

South Fork Kent Creek Watershed National Wetlands Inventory



- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine
- SFKC Watershed

0 0.4 0.8 1.2 1.6 Miles



Data Sources: USGS, FWS
Aerial Date: July 30, 2017
Edited: July 9, 2019

Map created by Kristin Adams with Tallgrass Restoration, LLC

South Fork Kent Creek Watershed FEMA Flood Hazard



- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- ▬ Floodway
- SFKC Watershed

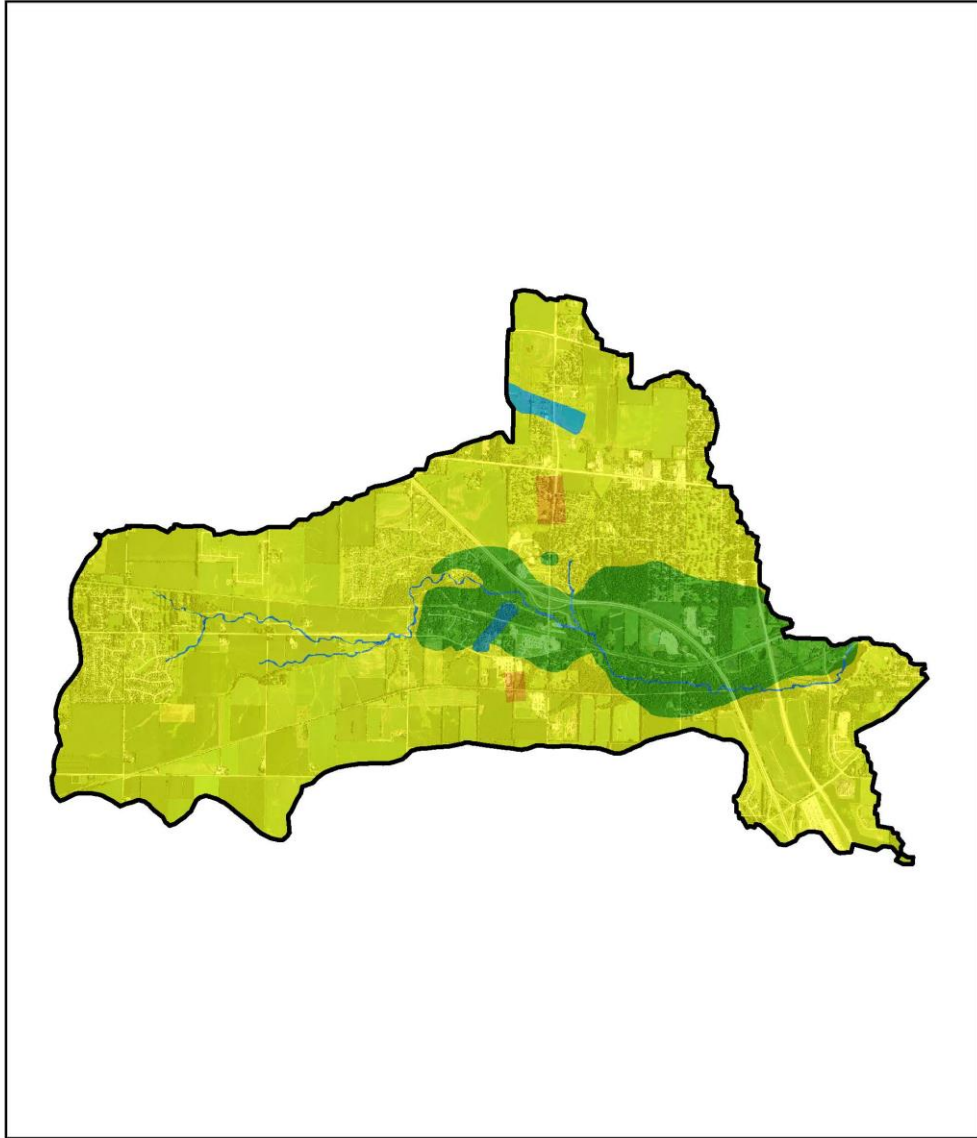
0 0.4 0.8 1.2 1.6 Miles



Data Sources: FEMA, USGS
Aerial Date: July 30, 2017
Edited: July 9, 2019

Map created by Kristin Adams with Tallgrass Restoration, LLC

South Fork Kent Creek Watershed 1800 Historic Land Use



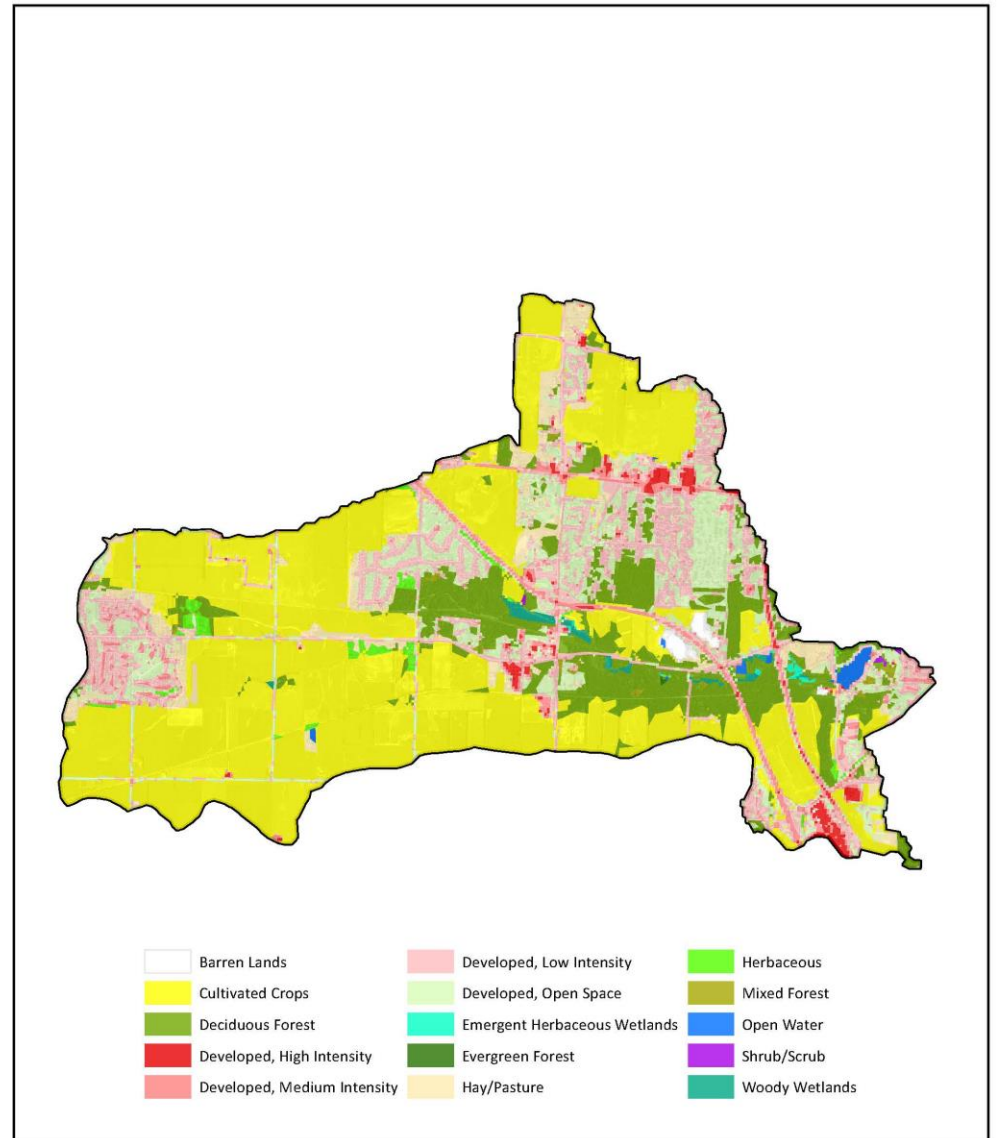
- SFKC Watershed
- River
- Field
- Slough
- Marsh
- Spring
- Prairie
- Timber



Data Sources: USGS, ISGS
Aerial Date: July 30, 2017
Edited: July 9, 2019

Map created by Kristin Adams with Tallgrass Restoration, LLC

South Fork Kent Creek Watershed 2016 NLCD Land Use



- | | | |
|---|---|---|
| Barren Lands | Developed, Low Intensity | Herbaceous |
| Cultivated Crops | Developed, Open Space | Mixed Forest |
| Deciduous Forest | Emergent Herbaceous Wetlands | Open Water |
| Developed, High Intensity | Evergreen Forest | Shrub/Scrub |
| Developed, Medium Intensity | Hay/Pasture | Woody Wetlands |

- SFKC Watershed



Data Sources: USGS, USDA
Aerial Date: July 30, 2017
Edited: July 9, 2019

Map created by Kristin Adams with Tallgrass Restoration, LLC

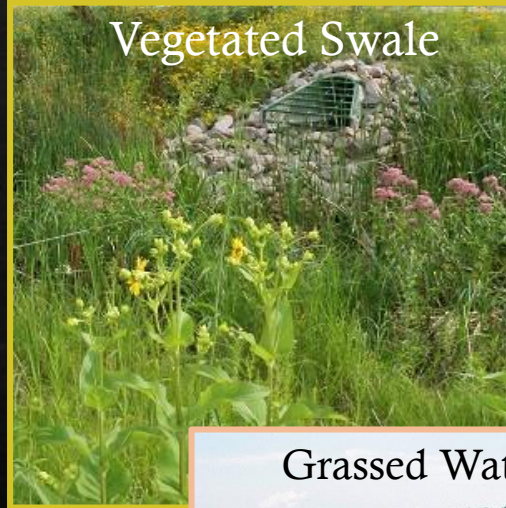
Examples of Best Management Practices (BMPs)

- ◆ Dependent on concerns and pollution sources
- ◆ Grassed waterways
- ◆ Stream stabilization
- ◆ Vegetated swales
- ◆ Filter strips
- ◆ Native planting
- ◆ No till/reduced till
- ◆ Cover crops
- ◆ Porous pavement

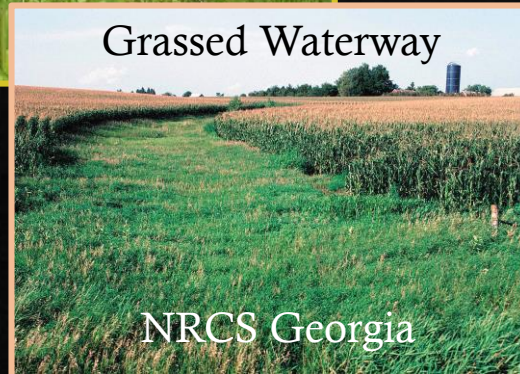
Ephemeral gullies and rill erosion. USDA, NRCS.



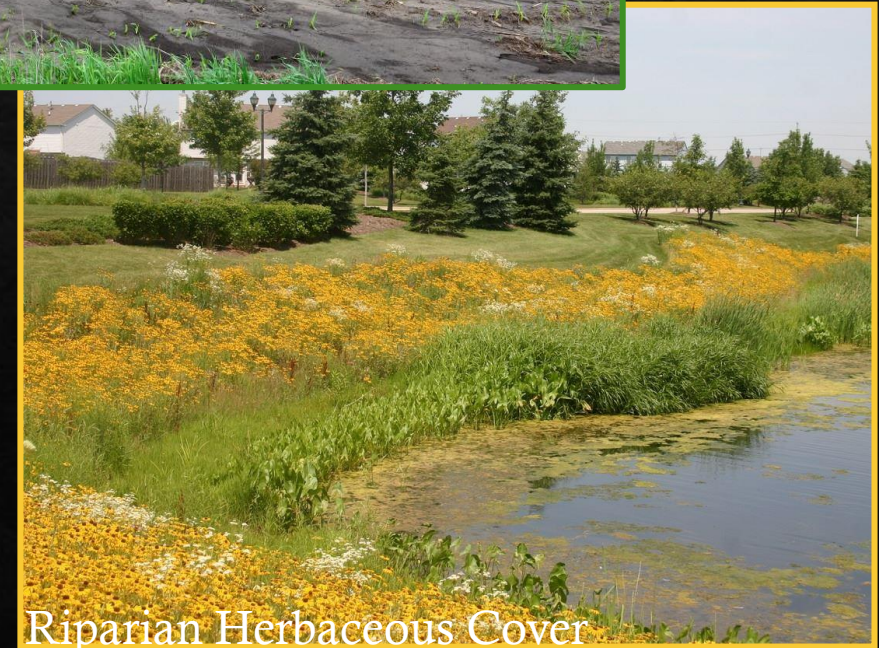
Vegetated Swale



Grassed Waterway



NRCS Georgia



Riparian Herbaceous Cover

Importance of a Watershed Based Plan

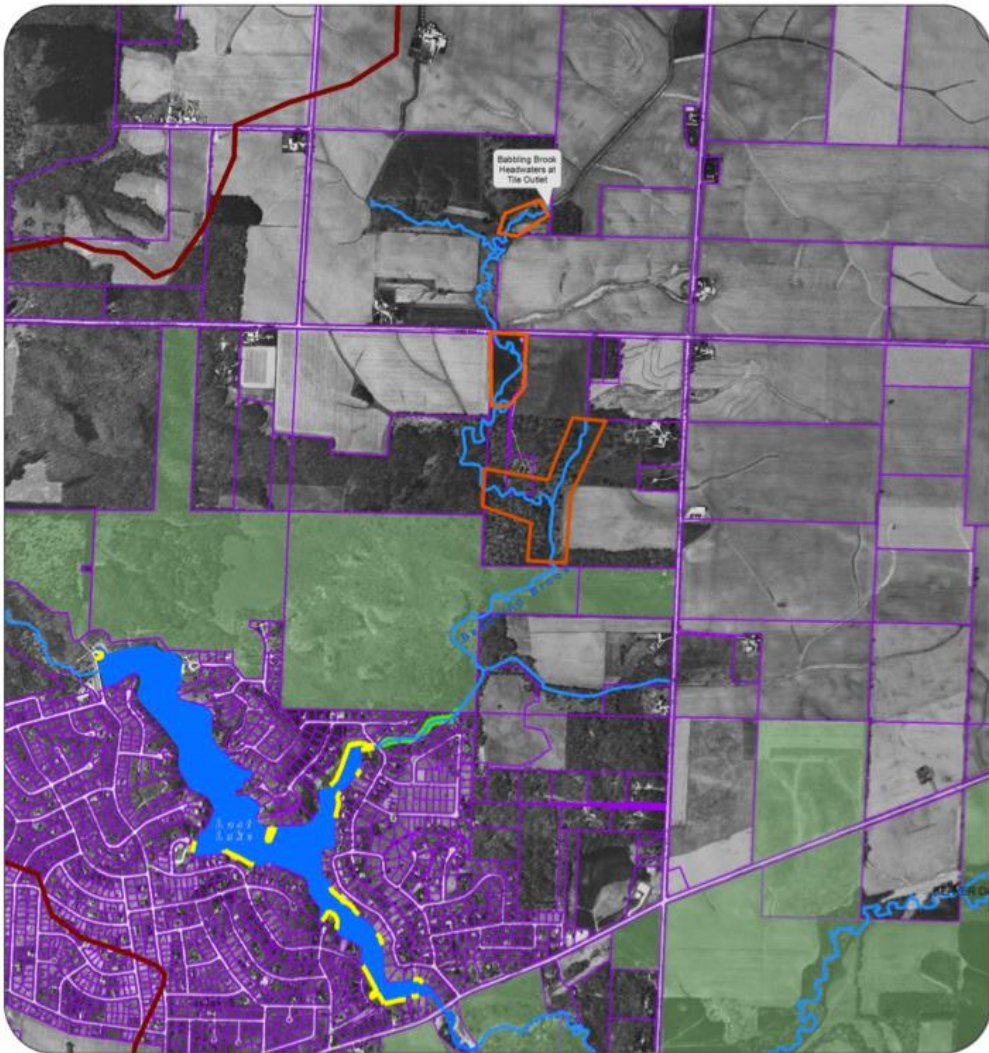
- ◇ Why create a WBP?
 - ◇ DISCOVER most probable causes & sources of water quality impairments
 - ◇ CREATE course of action to address impairments
 - ◇ PROVIDE funding and technical assistance options for implementation
 - ◇ MONITOR and EVALUATE progress

Example of Watershed
Planning & Implementation
Success

Lost Lake

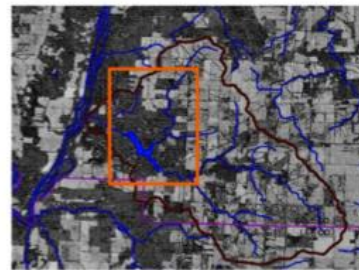
Planning and Implementation Success

Exhibit B: Upper Babbling Brook Multi BMP Project Site Map and Related Projects



Legend

- Clear Cr Watershed
- Streams
- Lost Lake
- Multi BMP Project Area
- Completed Bank Stabilization
- Completed Shore Stabilization
- Parcels
- The Nature Conservancy



0 1,000 2,000 4,000 Feet

Map Produced for OES, LLC by Nathan Hill July 2012 using Ogle County GIS, Illinois Department of Natural Resources and created data. No warranty as to the accuracy is expressed or implied. For planning purposes only.

- ◇ Clear Creek Watershed Plan – Lost Lake RCD: 2009 – 2011
- ◇ Babbling Brook Implementation- Lost Lake RCD: 2010 - 2012
- ◇ Upper Babbling Brook Implementation – Lost Lake RCD and Private Farmer: 2013 - 2015

Babbling Brook 2009



Babbling Brook 2014



Upper Babbling Brook

Partnering with a private property farmer to
implement a water-quality improvement
project recommended in the WSP

Grant – Defined

- ◇ Budget: \$600,000
- ◇ 60 / 40 Split for funding
 - ◇ 60% Federal 319 Funds (\$ 360,000)
 - ◇ 40% Match Funds
 - ◇ \$120,000 RCD
 - ◇ \$120,000 Owner *



* Actual Cash Match: Less than \$50,000

Grant – Defined

- ◆ Project represents 77% of total stream length
- ◆ BMP's place on 3.18 miles of stream reach
- ◆ Eliminates erosion on 5,369ft of streambank
- ◆ Creation of a 2.55 acre sediment basin









Project Goals for the grant

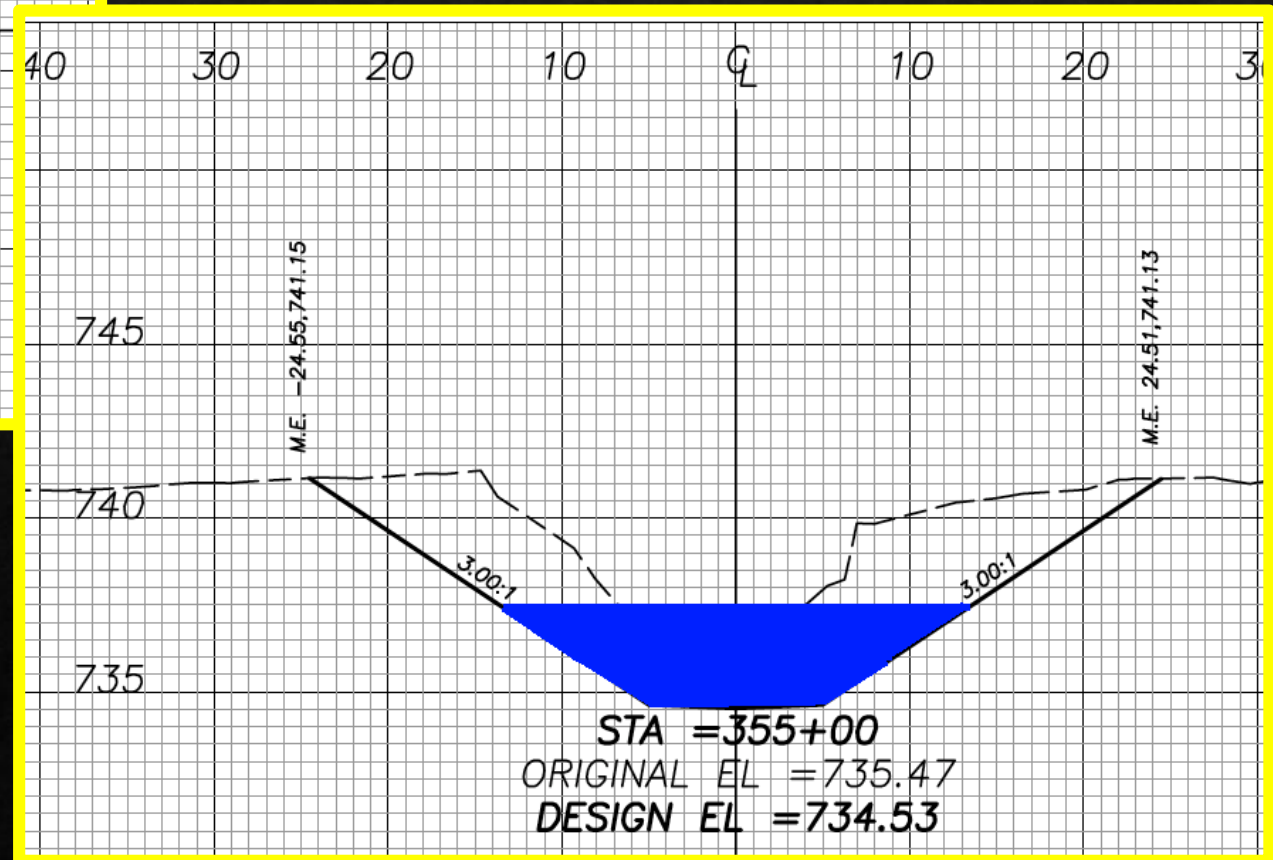
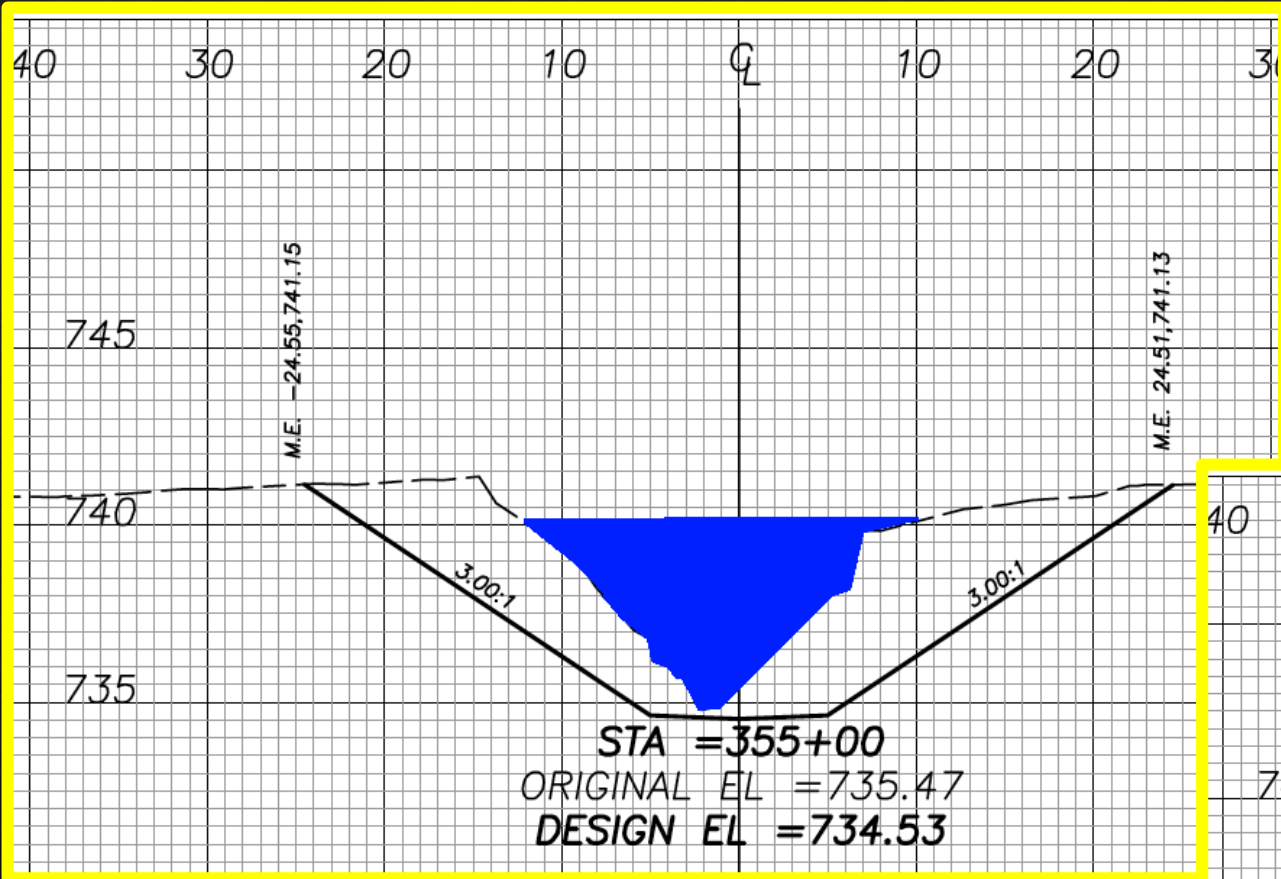
- ◇ Reduce Flash Flooding
- ◇ Stabilize highly eroded banks
- ◇ Reduce nutrient loading that degrades water quality
 - ◇ Sediment
 - ◇ Phosphorus
 - ◇ Nitrogen



Methods to Achieve Program Goals

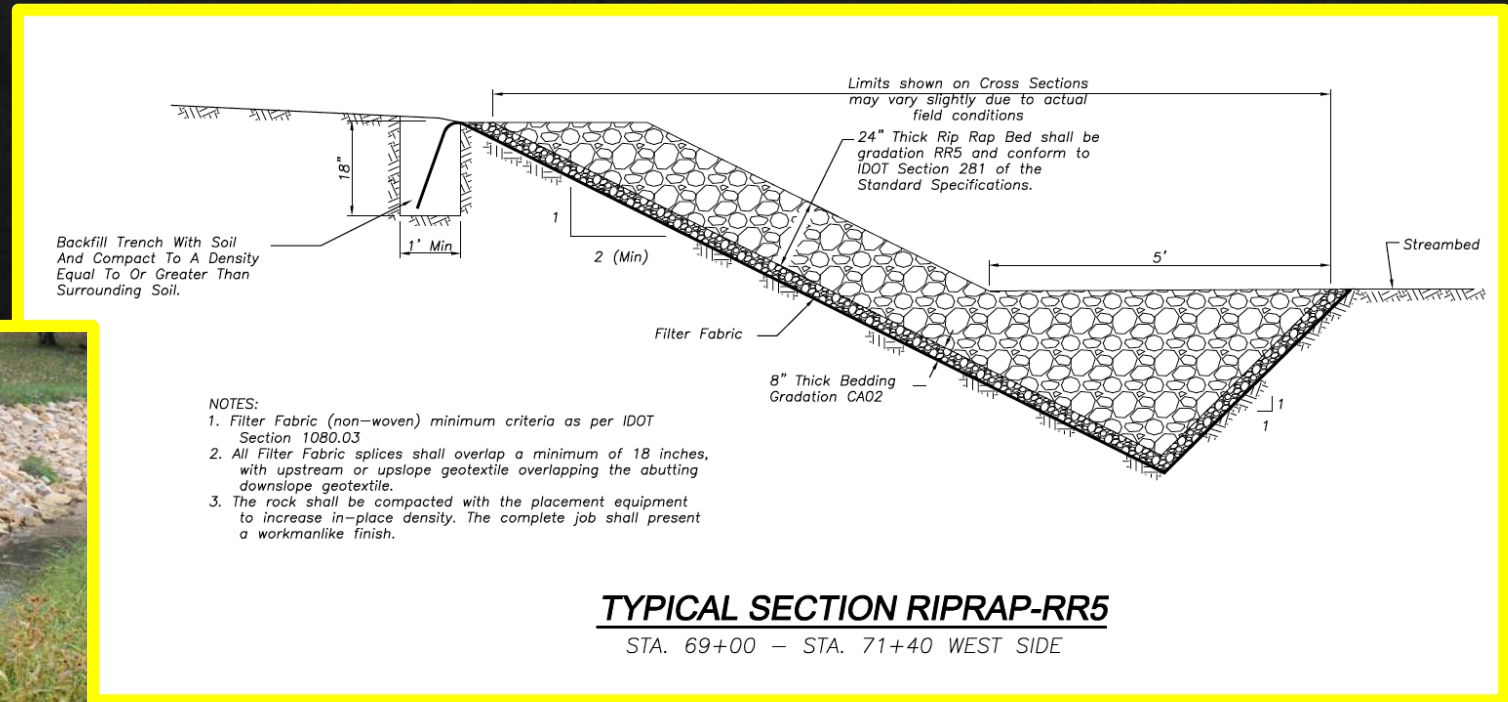
- ◆ Utilize meanders with 3:1 or better slopes to allow for establishment of native vegetation, and to slow water velocities & reduce flash flood event impacts





Methods to Achieve Program Goals

- ◆ Installation of rip rap on outside bends to create turbulence to reduce water velocities and stabilize soils



Methods to Achieve Program Goals

- ◆ Installation of turf reinforcement mats and native seeding to stabilize soils and utilize nutrients





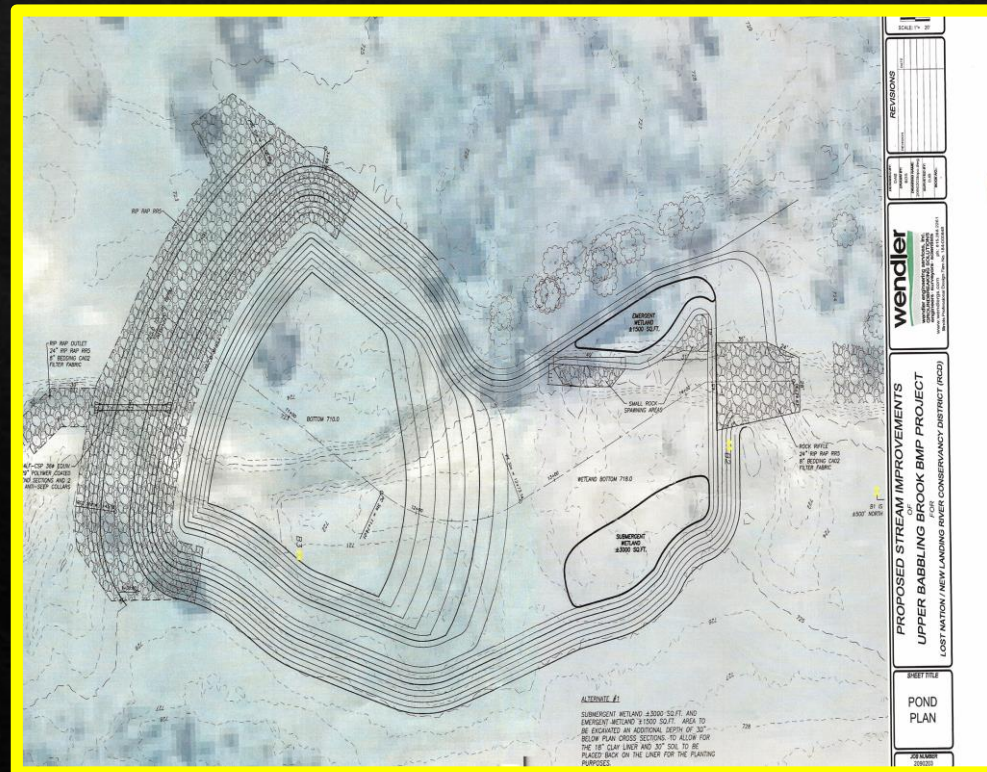
Before Treatment



After Treatment

Methods to Achieve Program Goals

- ◆ Installation of a sediment basin to back up water, settle suspended sediments, and meter water flow through slow release



Before Treatment



After Treatment

Input, Planning, & Guidance

Stakeholders

- ◇ Who: those who live, work, and play within the watershed
- ◇ First-hand experience with concerns and problems
- ◇ Valuable input:
 - ◇ direction/vision for the watershed
 - ◇ tangible and economically feasible goals
 - ◇ reasonable and acceptable implementation projects
- ◇ Voluntary participation and implementation

Technical Advisors

- ◇ Who: Local professionals in natural resources, water quality, agriculture, and planning & zoning
- ◇ Analyze natural resources and stakeholder concerns to make recommendations about potential causes and solutions
- ◇ Ensure stakeholder decisions are scientifically sound and comprehensive

OES Consultants

- ◇ Aid in watershed planning process
- ◇ Compile Watershed Natural Resource Inventory
- ◇ Share natural resources and water quality data for decision making
- ◇ Write the Watershed Plan based on ideas and input from stakeholders and technical advisors






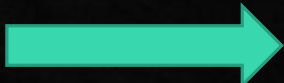
Overall Project Goals

- ◇ Develop a Watershed Based Plan for implementation guidance and to apply for financial assistance
- ◇ Involve and educate stakeholders
- ◇ Implement plan recommendations

Roadmap of Planning Process

- ◇ Recruit stakeholder involvement and planning participants
- ◇ Create success statement
- ◇ Set goals and objectives for the watershed
- ◇ Choose projects and programs
- ◇ Choose education and outreach opportunities
- ◇ Determine monitoring and evaluation strategies
- ◇ Schedule projects, programs, education, outreach efforts
- ◇ Estimate costs for selected projects, programs, education, outreach
- ◇ Review draft watershed plan and executive summary
- ◇ Approve final watershed plan and executive summary
- ◇ Transition from planning to implementation phase

Due Dates Timeline

- ◆ Draft of Watershed Resource Inventory  December 1, 2019
- ◆ Final of Watershed Resource Inventory  January 1, 2020
- ◆ Draft of Watershed-Based Plan &
Executive Summary  September 30, 2020
- ◆ Final of Watershed-Based Plan,
Executive Summary, & Self-Assessment  December 31, 2020
- ◆ EPA Section 319 Implementation
Grant Application  August 1, 2021
- ◆ Stakeholder Involvement  Ongoing

Today's Agenda

Stakeholder Meeting #1

July 11, 2019

1. Overview of watershed-based plan and process
2. Determine stakeholder concerns and problems within the watershed
3. Recruit stakeholder participation

Sources

- ◇ <https://govappsqa.illinois.gov/gata/csfa/Program.aspx?csfa=378>
- ◇ <https://enviroatlas.epa.gov/enviroatlas/datafactsheets/pdf/Supplemental/HUC.pdf>

Thank you for your time!
Questions?

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