

Somonauk Creek Watershed-Based Plan Kickoff Meeting

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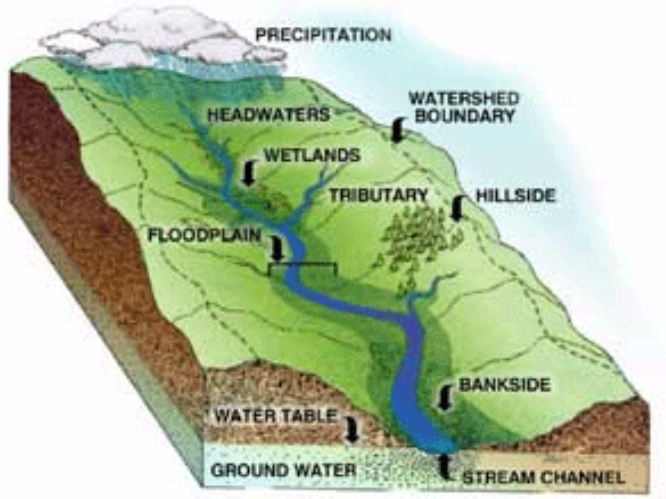
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BAXTER & WOODMAN
Consulting Engineers

What is a watershed?

- A watershed is best described as an area of land where surface water drains to a common location such as a stream, river, or lake.
- Watersheds do not follow political boundaries.
- Groundwater is not linked directly to a watershed boundary.





What is watershed planning?

A voluntary, community supported process that assesses the health of a watershed and develops strategies to improve it.

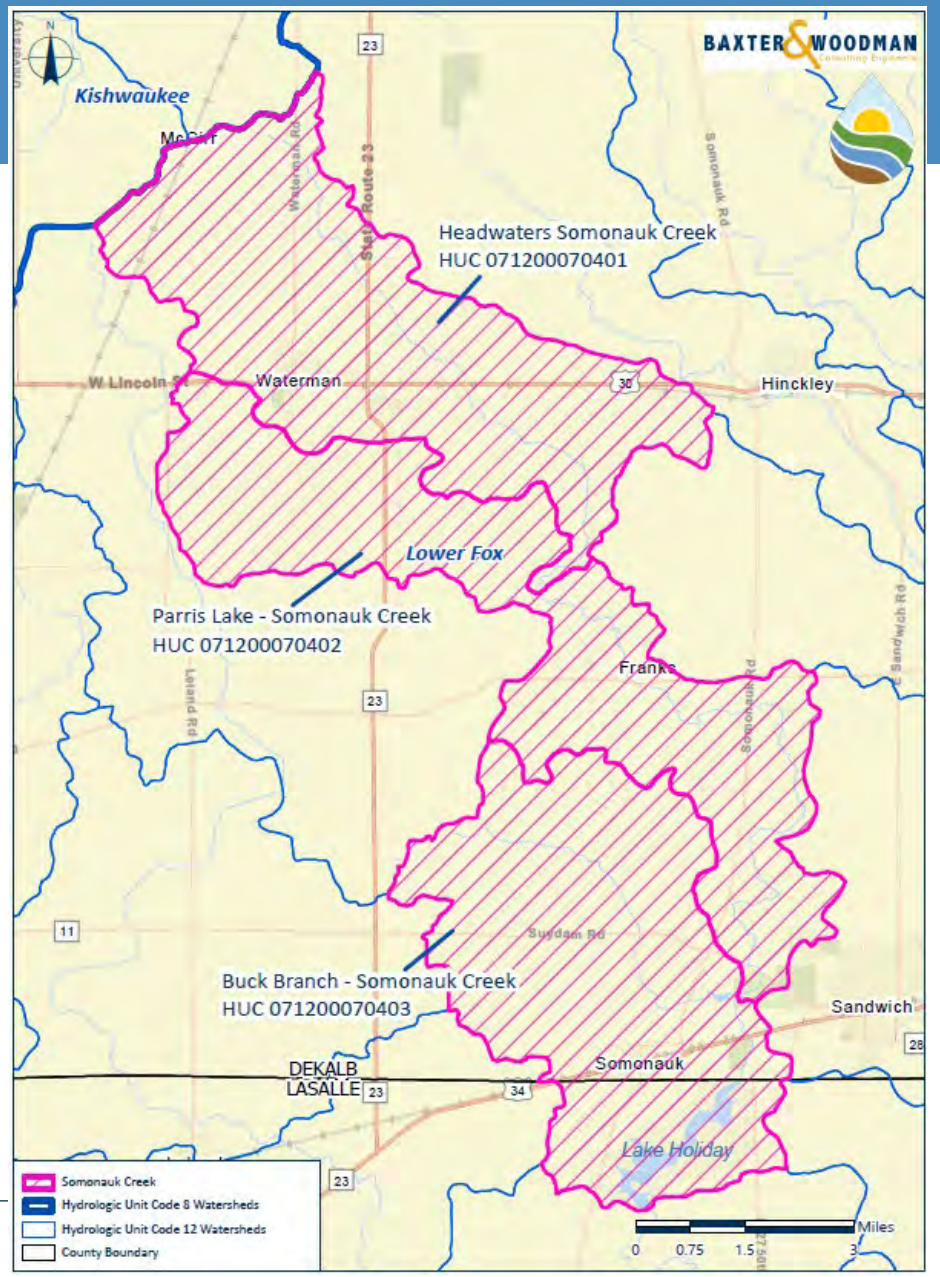
An opportunity to bring the community together and share the work and cost of restoration.



Somonauk Creek

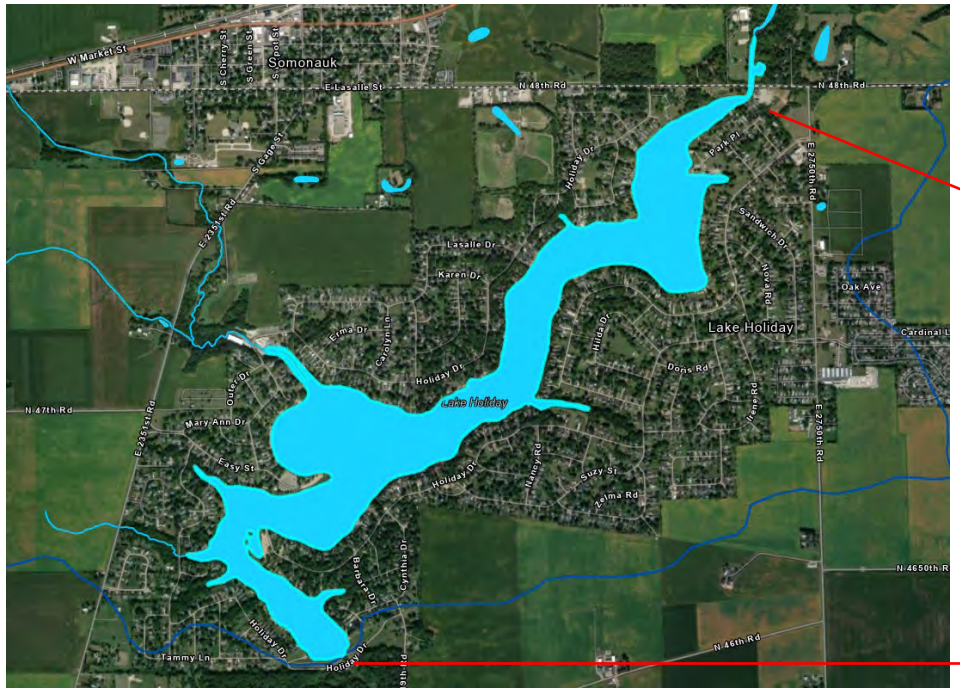
- 41,093 acres, 3 HUC 12 watersheds
- Somonauk Creek, Buck Branch, Lake Holiday, Buck Lake, and Parris Lake





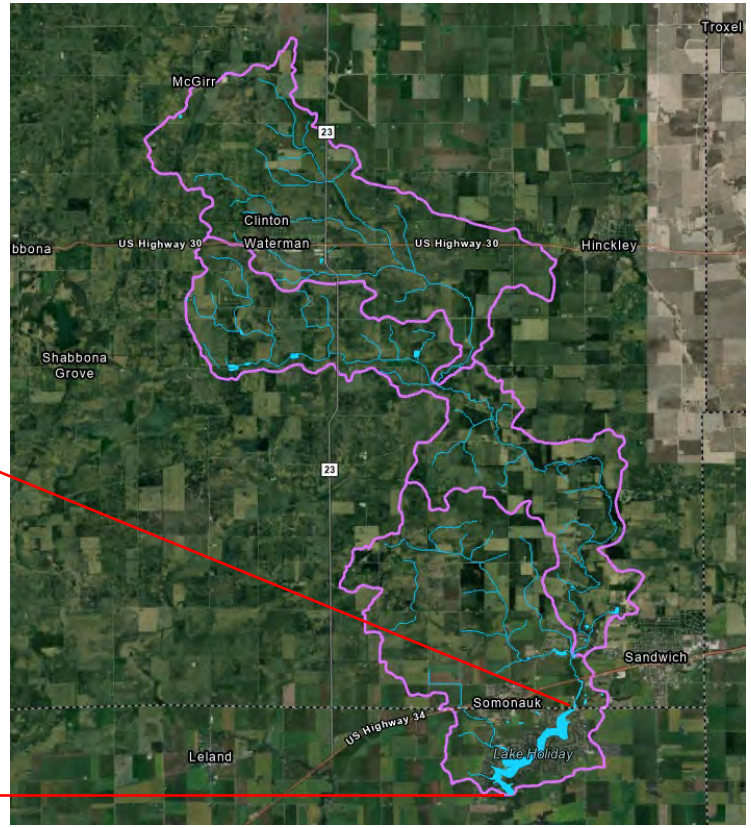
Lake Holiday

CONCURRENT LAKE MANAGEMENT PLAN



Focus on **internal lake processes**

WATERSHED-BASED PLAN



Focus on **external/landscape inputs**

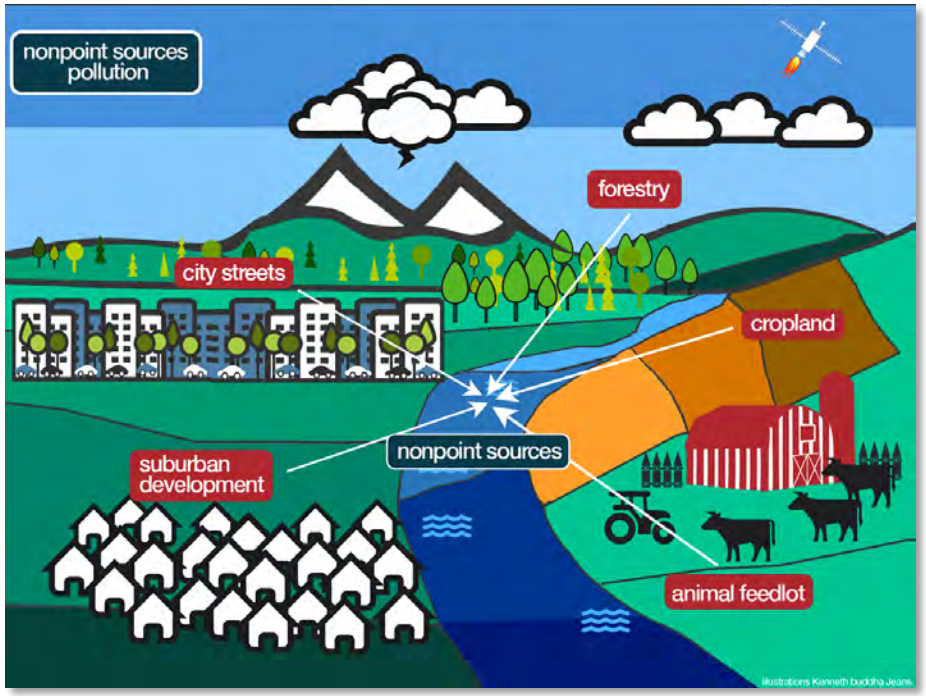
Clean Water Act – Section 319

Congress enacted Section 319 of the Clean Water Act in 1987, establishing a national program to control NPS pollution.

- **Addresses Nonpoint Source (NPS) pollution**
- **Delegated to states**
- **Encourages development of assessment reports; adoption of management programs; and implementation of those management programs.**
- **Promotes practices to protect watersheds**
- **Voluntary program – not enforceable**

Nonpoint Source (NPS) Pollution

- Caused by rainfall/snowmelt moving over and through the ground. Runoff picks up and carries away natural and human-made pollutants, depositing them into our waters.
- Any pollution that does NOT come from a pipe or discreet source (facility)
- Many diffuse sources
- Addressed via an EPA Nine Element Watershed Plan



USEPA Nine Elements

The 9 Elements aim to reduce non-point source pollution.

- Element A: Identify causes and sources of impairment.
- Element B: Estimate pollutant load reductions from Management Measures/BMPs.
- Element C: Propose Management Measures/BMPs and identify “Critical Areas”
- Element D: Identify technical and financial assistance needs.
- Element E: Complete an information/education component.
- Element F: Prepare a plan implementation schedule.
- Element G: Describe interim, measurable milestones and project outcomes.
- Element H: Develop criteria to determine if load reductions are being achieved over time.
- Element I: Develop a monitoring plan to evaluate implementation efforts over time.

Watershed Planning Process

Systematically address USEPA Nine Elements



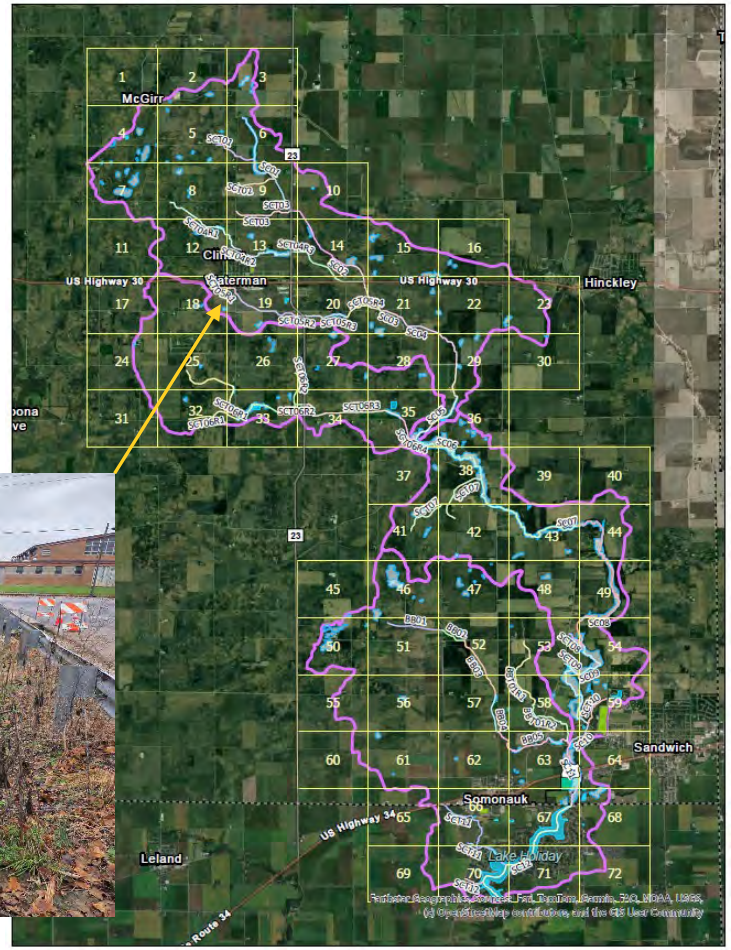
1. Watershed Field Inventory
2. Watershed Characteristics Assessment
3. Causes & Sources of Impairment
4. Vision, Goals & Objectives
5. Critical Areas & Reduction Targets
6. Action Plan
7. Plan Evaluation

Meetings held bi-monthly throughout process

Watershed Field Inventory

- **Results used to identify potential watershed improvement projects & verify existing conditions**
- **Document conditions via Field Maps**





WATERSHED-BASED PLAN STREAM INVENTORY/BMP DATA FORM

STREAM NAME: SB09 REACH ID: DATE:

REACH BOUNDARIES: Haines Creek to E Pearl St OWNER:

MAP/ID#: PHOTOS: 31-32 APPOX. LENGTH: INVESTIGATORS:

CHANNEL CONDITIONS

CHANNELIZATION NONE X LOW MODERATE HIGH

SPOIL PILES ON BANKS (Left /Right /Both (None)

CHANNEL SINUOSITY NONE LOW MODERATE X HIGH

POOL/RIFFLE DEVELOPMENT NONE LOW MODERATE X HIGH

DEGREE OF BANK EROSION/LATERAL RECESSION RATE (Circle most appropriate):

None/Slight	Moderate	Severe	Very Severe
Stable; less than 5% of banks affected.	Moderately stable; 5-33% of banks eroding; bare banks and vegetative overhang.	Moderately unstable; 33-66% of banks eroding; exposed tree roots, fallen trees	Unstable; over 66% of banks eroding; many fallen trees; culverts eroding, etc.

MEAN BANK HEIGHT & CHANNEL WIDTH (facing downstream):

Left Bank Height (FT)	Mean Channel Width	Right Bank Height (FT)
5	7	5

DEBRIS JAMS INSTREAM/OVERB LOW MODERATE X HIGH

STREAM BED EROSION: LOW X MODERATE HIGH

RIPARIAN VEGETATION COVER:

NARRATIVE DESCRIPTION OF RIPARIAN AREA: mostly has a verage

EXAMPLE

OVERALL ECOLOGICAL CONDITION OF RIPARIAN AREA: GOOD X AVERAGE POOR

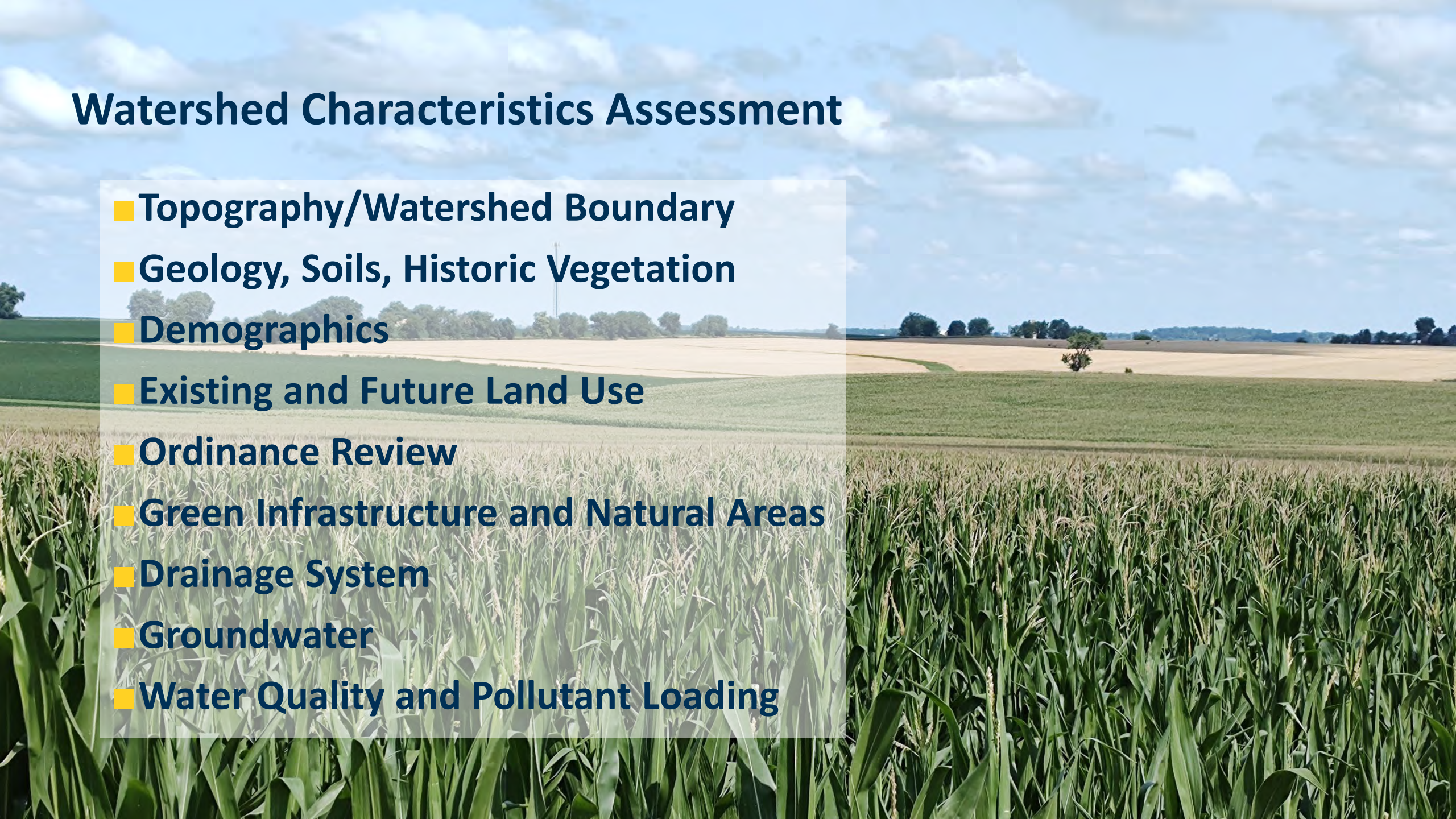
BMP RECOMMEDATIONS:

- Invasive Species Removal (Riparian
- Artificial Riffles/Pools
- Bioengineered Bank Armoring
- Soil Lifts
- Native Seeding/Plug Planting
- Native Tree/Shrub Planting
- Regrade/Reslope Stream Banks
- Hard Bank Armoring (ie Gabions)
- X Maintenance (ie debris clearing)

BMP DETAILS: maintain existing flood plain

BMP PRIORITY: CRITICAL AREA/HIGH MEDIUM X LOW

EXPLAIN BMP PRIOROTY: best floodplain forest in stud



Watershed Characteristics Assessment

- Topography/Watershed Boundary
- Geology, Soils, Historic Vegetation
- Demographics
- Existing and Future Land Use
- Ordinance Review
- Green Infrastructure and Natural Areas
- Drainage System
- Groundwater
- Water Quality and Pollutant Loading

Identify Causes and Sources of Impairment

What is causing our water quality issues?

- Nutrients, sediment, bacteria
- Eroding streambanks
- Land uses and practices
- Pollutant hotspots
- Invasive species
- Future development sites



Develop a Mission, Goals & Objectives

We'll lead a facilitated community workshop in fall of 2027, during which stakeholders will:

- **Help craft a mission statement for the watershed plan**
- **Develop and prioritize goals**
- **Places-of-the-Heart exercise**



Identify Critical Areas

- What areas are the biggest contributors to our pollutant issues?
- Where can we install practices that will give us the most water quality improvement?

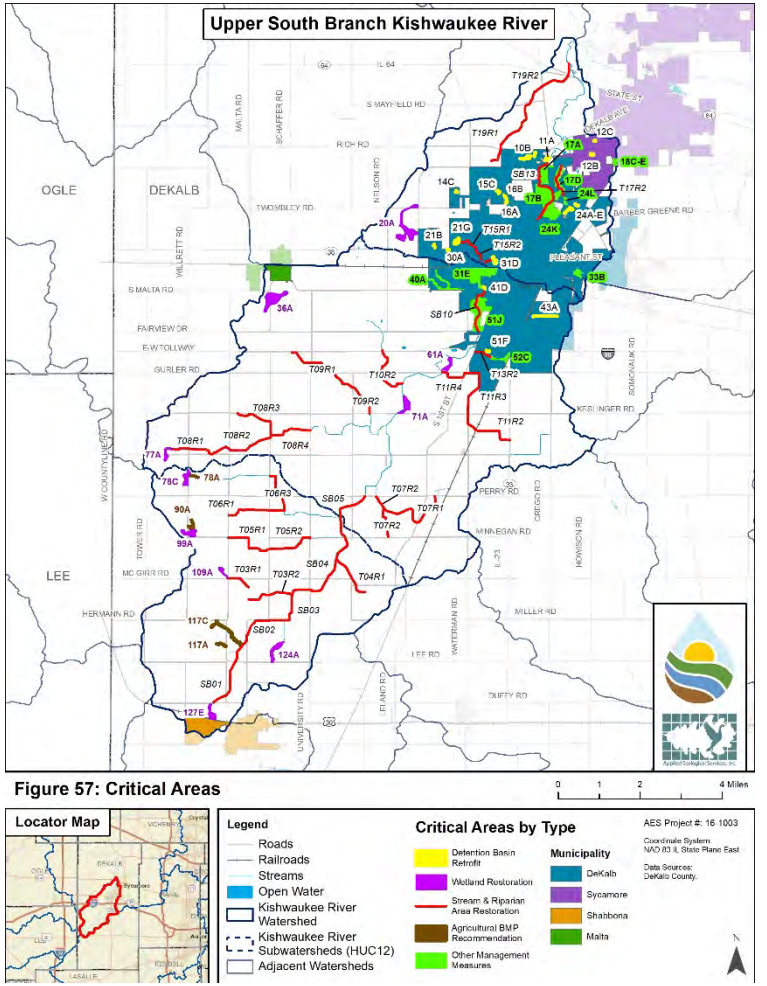


Figure 57: Critical Areas

Develop Reduction Targets

- How much do we need to reduce each pollutant in order to get our water quality back where it needs to be?
- Set pollutant Reduction Targets based on existing water quality data and numeric standards.
- Use a model to estimate pollutant reduction from addressing Critical Areas and other high-priority projects
- Are those targets attainable?

Develop an Action Plan

Programmatic Measures: general remedial, preventive, and policy watershed-wide Management Measures that can be applied across the watershed by various stakeholders.

Site Specific Measures: actual locations where Management Measure projects can be implemented to improve surface and groundwater quality, green infrastructure, and flooding.

Site-Specific Action Plan Table

CITY OF DEKALB												
ID#	Location	Units (Acres or LF)	Existing Condition	Management Measure Recommendation	Pollutant Reduction Efficiency			Priority	Owner & Responsible Entity	Sources of Technical Assistance	Cost Estimate	Implementation Schedule (Years)
					TSS (tons/yr)	TP (lbs/yr)	TN (lbs/yr)					
DETENTION BASIN RETROFITS & MAINTENANCE (SEE FIGURE 69). Technical and Financial Assistance Needs: Technical assistance needed to implement detention basin retrofits is relatively low while financial assistance needs are moderate. Private landowners will need the greatest assistance.												
10A	See Figure 69 for project location	3.1	Large wet-bottomed basin with turf side slopes, eroded toe along half, mowed on three sides in poor ecological condition	Design and implement a project to remove turf, regrade/stabilize and naturalize slopes and buffer with natives and maintain for three years to establish	2	5	17	Medium	Private Owner/ HOA	Ecological Consultant/ Contractor	$115,000 to design, permit, & construct. $9,300 to implement three-year M&M.	5-15 Years
10B	See Figure 69 for project location	12.3	Large wet-bottomed basin with turf side slopes, spot erosion evident, and poor ecological condition; geese present	Design and implement a project to remove turf, spot regrade banks where necessary, increase the size of buffer, naturalize buffer & slope with native plants and maintain for three years to establish	21	63	214	High/ Critical Area	Private Owner/ HOA	Ecological Consultant/ Contractor	$237,600 to design, permit, and construct. $18,450 to implement three-year M&M.	1-10 Years



Funding for the projects YOU want to accomplish!

Implementation Strategy

- Information & Education Program
- Water Quality Monitoring Plan & Evaluation Criteria
- Measuring Plan Progress and Success



Information & Education Program

- Change social behavior, public cooperation, and motivation to take action to meet plan goals
- Get the word out!

Education Action of Campaign	Target Audience	Communications Vehicles	Priority/ Schedule	Lead (Supporting) Organizations	Outcomes, Change in Action	Estimated Cost
Regenerative Agriculture Workshop	Farmers and Ag Industry	Social Media, Websites, local publications	Critical/ Fall/ Winter 2020/2021; biennially	SWCD (NRCS)	Understanding of the Nutrient Loss Reduction Strategy, improved water quality and soil health.	$500 per workshop (biennially)
Water Quality Educator Resources	DeKalb County Educators	Emails, Communication with School Districts	Critical/ Ongoing	U of I Extension, DeKalb County Farm Bureau Ag Literacy Coordinator, (SWCD)	Provide useful tools to educate the Educators and Students on understanding watersheds and how to improve water quality in DeKalb County	$1,265 (one time)
Name that Stream	Students in the Watershed	Emails, Letters to the School District	Critical/ Fall/ Winter 2020/2021	Watershed Steering Committee (SWCD)	Encourage student involvement and provide opportunities to discuss water quality and watersheds	$250 (one time)



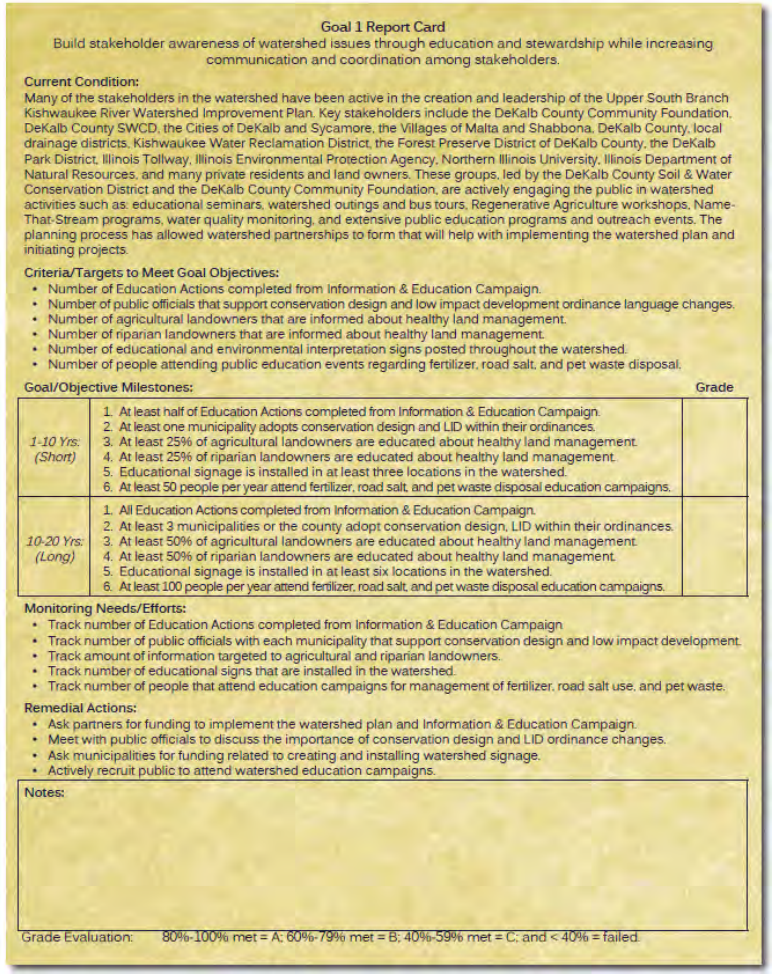
Water Quality Monitoring Plan

- Where will we monitor water quality?
- What parameters should we be monitoring?
- Develop a set of criteria to measure success.



Evaluate Implementation – Report Cards

- A progress report card will be created for each plan goal to help evaluate implementation progress.
- The progress report card is designed to be used/evaluated at least every five years.



Goal 1 Report Card

Build stakeholder awareness of watershed issues through education and stewardship while increasing communication and coordination among stakeholders.

Current Condition:

Many of the stakeholders in the watershed have been active in the creation and leadership of the Upper South Branch Kishwaukee River Watershed Improvement Plan. Key stakeholders include the DeKalb County Community Foundation, DeKalb County SWCD, the Cities of DeKalb and Sycamore, the Villages of Malta and Shabbona, DeKalb County, local drainage districts, Kishwaukee Water Reclamation District, the Forest Preserve District of DeKalb County, the DeKalb Park District, Illinois Tollway, Illinois Environmental Protection Agency, Northern Illinois University, Illinois Department of Natural Resources, and many private residents and land owners. These groups, led by the DeKalb County Soil & Water Conservation District and the DeKalb County Community Foundation, are actively engaging the public in watershed activities such as: educational seminars, watershed outings and bus tours, Regenerative Agriculture workshops, Name-That-Stream programs, water quality monitoring, and extensive public education programs and outreach events. The planning process has allowed watershed partnerships to form that will help with implementing the watershed plan and initiating projects.

Criteria/Targets to Meet Goal Objectives:

- Number of Education Actions completed from Information & Education Campaign.
- Number of public officials that support conservation design and low impact development ordinance language changes.
- Number of agricultural landowners that are informed about healthy land management.
- Number of riparian landowners that are informed about healthy land management.
- Number of educational and environmental interpretation signs posted throughout the watershed.
- Number of people attending public education events regarding fertilizer, road salt, and pet waste disposal.

Goal/Objective Milestones: **Grade**

1-10 Yrs: (Short)	1. At least half of Education Actions completed from Information & Education Campaign. 2. At least one municipality adopts conservation design and LID within their ordinances. 3. At least 25% of agricultural landowners are educated about healthy land management. 4. At least 25% of riparian landowners are educated about healthy land management. 5. Educational signage is installed in at least three locations in the watershed. 6. At least 50 people per year attend fertilizer, road salt, and pet waste disposal education campaigns.	
10-20 Yrs: (Long)	1. All Education Actions completed from Information & Education Campaign. 2. At least 3 municipalities or the county adopt conservation design, LID within their ordinances. 3. At least 50% of agricultural landowners are educated about healthy land management. 4. At least 50% of riparian landowners are educated about healthy land management. 5. Educational signage is installed in at least six locations in the watershed. 6. At least 100 people per year attend fertilizer, road salt, and pet waste disposal education campaigns.	

Monitoring Needs/Efforts:

- Track number of Education Actions completed from Information & Education Campaign
- Track number of public officials with each municipality that support conservation design and low impact development.
- Track amount of information targeted to agricultural and riparian landowners.
- Track number of educational signs that are installed in the watershed.
- Track number of people that attend education campaigns for management of fertilizer, road salt use, and pet waste.

Remedial Actions:

- Ask partners for funding to implement the watershed plan and Information & Education Campaign.
- Meet with public officials to discuss the importance of conservation design and LID ordinance changes.
- Ask municipalities for funding related to creating and installing watershed signage.
- Actively recruit public to attend watershed education campaigns.

Notes:

Grade Evaluation: 80%-100% met = A; 60%-79% met = B; 40%-59% met = C; and < 40% = failed.

Executive Summary and Final Report

- Will create a brochure-style Executive Summary
- Get the word out about the plan and its recommendations
- Draft Report and Executive Summary to IEPA Feb 2028



What is a watershed?

A watershed is the area of land where all the rain that falls on the surface drains to a common location such as a stream or lake, similar to a bathtub where all the water that falls within flows to the drain. Despite the simple definition, there is a complex interaction at play between natural elements (such as climate, surface water, vegetation, and wildlife) and human elements (such as development). Watersheds follow topography, not political boundaries.

This plan is for the Central South Branch Kishwaukee River watershed. It is large, covering 103 square miles of rural, northern DeKalb County extending into Boone County.

Source: Be Water Friendly

- Includes Deer Creek (HUC 070900060604), Town of Five Points-South Branch Kishwaukee (HUC 070900060605), and Bull Run - South Branch Kishwaukee River (HUC 070900060608) subwatersheds.
- Begins in south near Sycamore and flows north to Genoa, then turns west, flowing through Kingston, Kirkland, and Kishwaukee River State Fish & Wildlife Area.
- Picks up Deer Creek, Haines Creek, Bull Run, and 13 unnamed tributaries on the way.

Planning Process

Watershed planning is a voluntary, community supported approach to protecting and improving water quality in streams, lakes, and wetlands, protecting groundwater resources, restoring habitat, providing recreational & educational opportunities, and improving quality of life for people. The Central South Branch Kishwaukee River (CSBKR) watershed planning process is supported by DeKalb County Soil and Water Conservation District, DeKalb County Community Foundation, DeKalb County Government, DeKalb County Forest Preserve District, the City of Genoa, and the Villages of Kirkland and Kingston, among others. The planning process involved countless volunteers hours from these partners, local residents, and technical experts. All of the partners recognize the value of addressing non-point source pollution.

The mission of the watershed plan is to improve water quality by reducing nonpoint source pollution, while preserving agricultural lands and improving habitat, along with increasing our knowledge to help improve the stewardship of the Central South Branch Kishwaukee River watershed.

Goals

1. *Encourage agricultural techniques and soil conservation practices that will protect and conserve topsoil, improve soil health, and protect our water resources.*
2. *Improve surface water quality to meet water quality standards.*
3. *Build stakeholder awareness of watershed issues through education and stewardship while increasing communication and coordination among stakeholders.*
4. *Protect and manage natural and cultural components of the Green Infrastructure Network and improve fish and wildlife habitat.*
5. *Protect groundwater quantity and quality.*



Inventory Highlights

Headwater Conditions



Inventory Highlights

Headwater Conditions



Inventory Highlights

Waterman





Inventory Highlights

Somonauk Creek Reach 1 – Waterman Winery



Inventory Highlights

Somonauk Creek Reach 7



Inventory Highlights

Somonauk Creek Reach 10



Inventory Highlights

Buck Branch
Reach 5



Inventory Highlights

Buck Lake



Inventory Highlights

Confluence of Somonauk Creek and Lake Holiday @ County Line Road



Inventory Highlights

Ravine draining to Lake Holiday



Inventory Highlights

Lake Holiday



Inventory Highlights

Lake Holiday



Inventory Highlights

Lake Holiday Spillway



Watershed Planning Schedule

Meetings generally every other month over the next 1.5 yrs:

- **January ‘27 – Water Resources Inventory Results**
- **March ‘27 – Watershed Characteristics Assessment, Part 1**
- **May ‘27 – Watershed Characteristics Assessment, Part 2**
- **June ‘27 – Bus Tour**
- **September ‘27 – Water Quality, Initial Modeling Results, Goals Workshop**
- **November ‘27 – Critical Areas and Action Plan**
- **January ‘28 – Implementation and Outreach Plan**

We need your help!

We want your feedback, knowledge, and data!

- **Important resources/areas to protect or preserve**
- **What projects do you need additional funding for?**
- **Water quality data – chemical, physical, biological**
- **Habitat information**
- **Rare, threatened or endangered species information**

What do you know about this watershed that we don't?