Upper South Branch Kishwaukee Watershed Inventory

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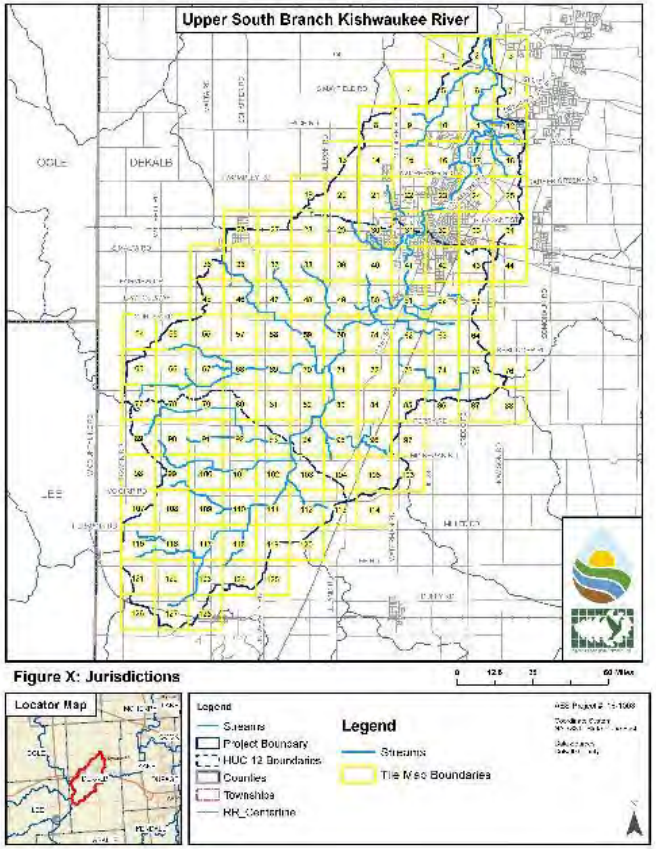
APPLIED ECOLOGICAL SERVICES, INC.

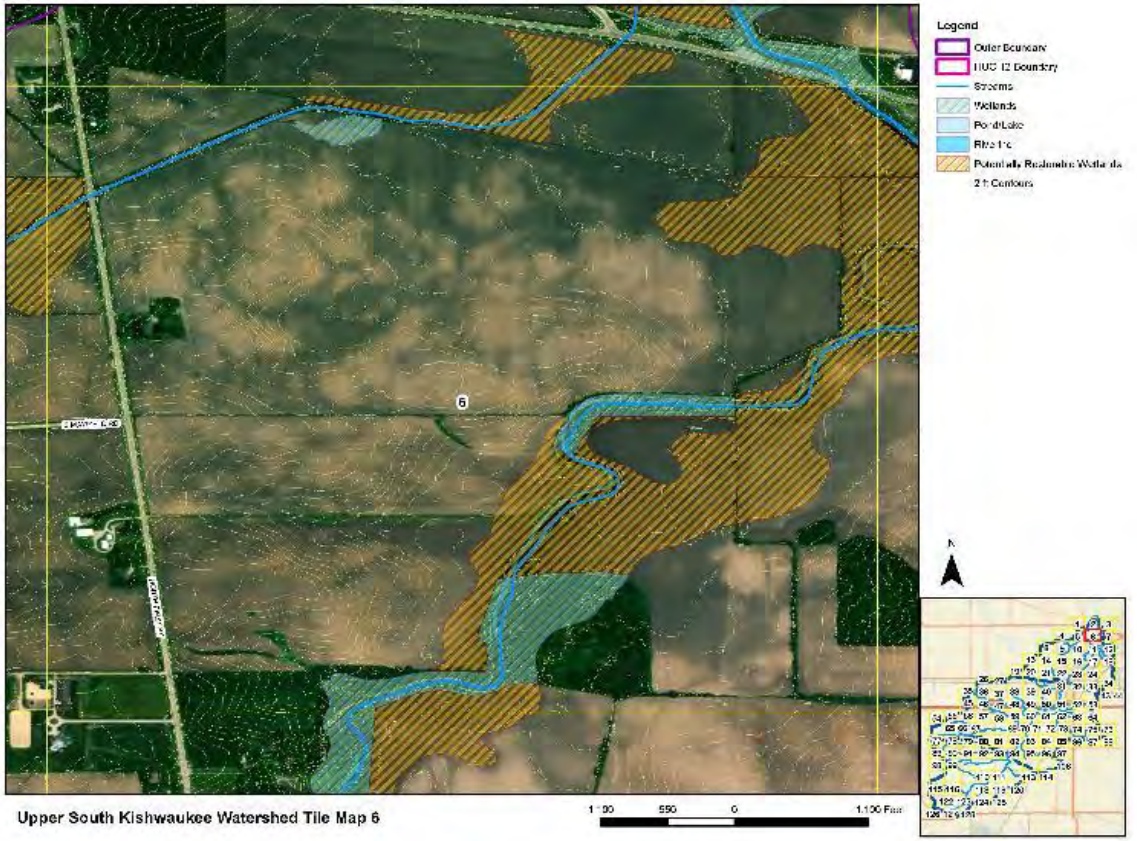
Watershed Inventory Discussion Topics

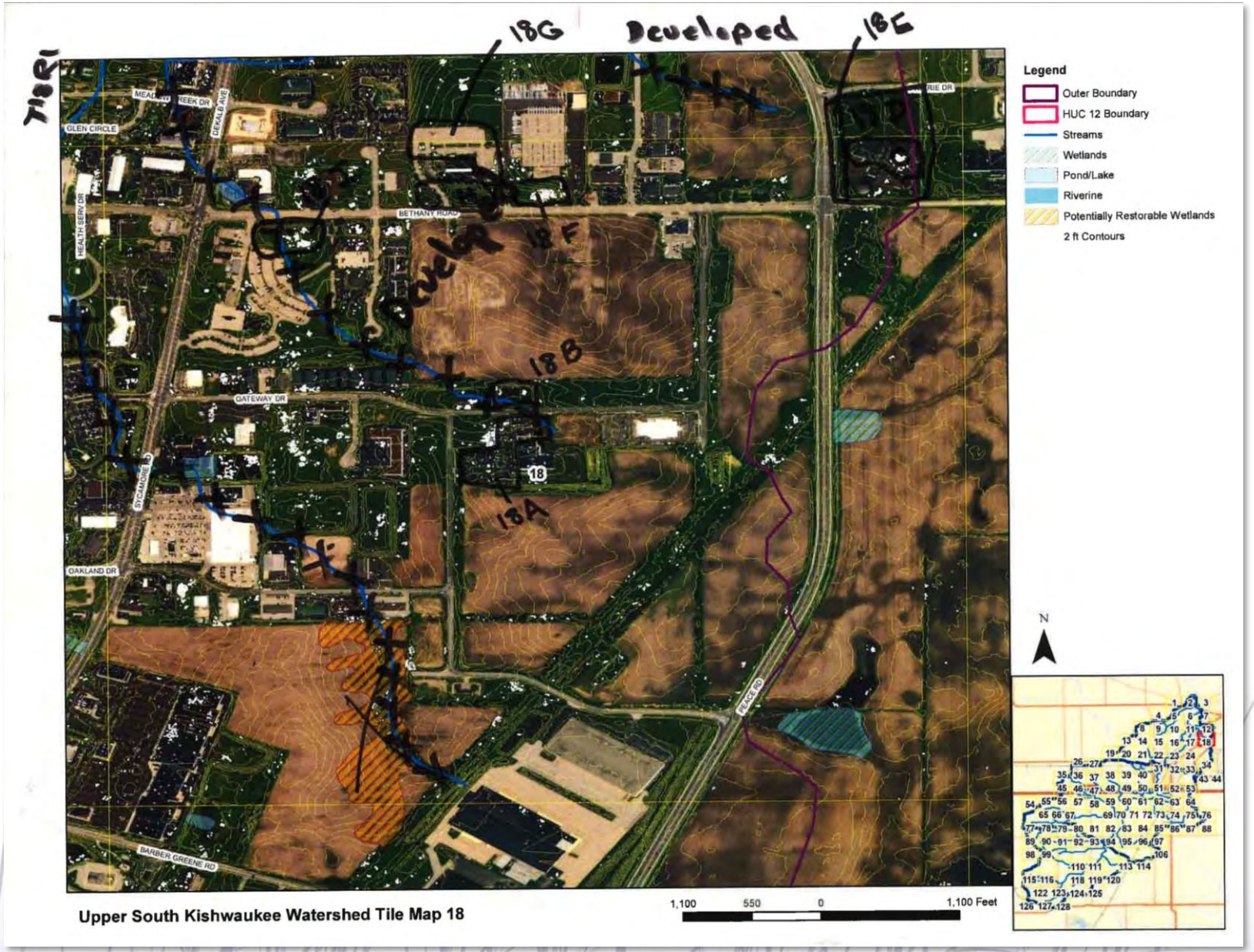
- Inventory Methodology
- South Branch Kishwaukee & Tributaries
- Streams & Riparian Areas
- Detention Basins
- Agriculture BMPs
- Natural/Open Space Areas
- Drained Wetland Sites

Watershed Inventory Methodology

- Index maps: aerial, topo, streams, wetlands, roads, etc.
- Maps were used to identify and map watershed BMPs
- Data sheets were used to document potential BMPs







Upper South Kishwaukee Watershed Tile Map 18

KISHWAUKEE WATERSHED STREAM INVENTORY/BMP FORM

STREAM NAME: SB 14754 REACH ID: 8 DATE: 4/17/19

REACH BOUNDARIES: OWNER: Private

MAP/AES# 60/61 PHOTOS 124 APPROX. LENGTH (ft): INVESTIGATOR: SZ KC

CHANNEL CONDITIONS:

CHANNELIZATION: NONE___ LOW___ MODERATE___ HIGH X

SPOILS PILES ON BANKS (Left / Right / Both)

CHANNEL SINUOSITY: NONE___ LOW X MODERATE___ HIGH___

POOL/RIFFLE DEVELOPMENT: NONE___ LOW X MODERATE___ HIGH___

DEGREE OF BANK EROSION (circle most appropriate):

NONE	LOW	MODERATE	HIGH
Stable; less than 5% of banks affected.	Moderately stable; 5-33% banks have areas of erosion.	Moderately unstable; 33-66% of banks have areas of erosion.	Unstable; 66-100% of banks highly eroded.

MEAN BANK HEIGHT & CHANNEL WIDTH (facing downstream):

LEFT BANK HEIGHT (FT)		MEAN CHANNEL WIDTH		RIGHT BANK HEIGHT (FT)	
10		20		10	

DEBRIS JAMS: INSTREAM/OVERBANK: LOW X MODERATE ____ HIGH ____

SEDIMENT ACCUMULATION: LOW X MODERATE ____ HIGH ____

RIPARIAN VEGETATION COVER (facing downstream):

BRIEFLY DESCRIBE RIPARIAN AREA: very narrow buffer of mixed grass and second growth woodies

OVERALL ECO CONDITION OF RIPARIAN AREA: GOOD:____ AVERAGE:____ POOR: X

BMP RECOMMENDATIONS:

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

BMP DETAILS: Widen narrow buffer and restore degraded Buffer improvement second growth woodland areas. Armor outside bends where most of erosion is occuring

BMP PRIORITY: CRITICAL AREA____ HIGH____ MEDIUM X LOW____

Explain Priority:

KISHWAUKEE WATERSHED MISC. WATER QUALITY BMP FORM

I. Site Name: DeKalb Market Sq. Detention Date: 5/ Photos: 27-32

Approx. Size (ac) _____ **Investigators:** _____ **Owner:** _____

Location(s): _____

AES ID# 24A-E **Map Index #** 24

II. Existing Site Conditions:

- □ 1. Woodland (dry – mesic – wet)
- □ 2. Prairie (dry - mesic – wet)
- □ 3. Old field
- □ 4. Turf/Park
- □ 5. Scrub shrub (dry – wet)
- □ 6. Marsh/Wetland
- □ 7. Agricultural/Cropland
- □ 8. Dry Bottom Detention (turf–natural)
- X 9. Wet Bottom Detention (turf-natural)
- □ 10. Wetland Bottom Detention
- □ 11. Pond/Lake
- □ 12. Brownfield (urban land)
- □ 13. Residential
- □ 14. Commercial
- □ 15. Other _____

Comments About Existing Site Conditions: All wet bottom w/turf slopes, heavily eroded toe w/ geese everywhere. 24D has become native plants left

If Detention what is ecological/water quality condition: Good_____ Average_____ Poor X

III. Potential Water Quality BMP Project(s)

- □ Rain Gardens
- □ Bioinfiltration Swales
- □ Wetland Restoration
- X Naturalization w/ Natives
- □ Green Infrastructure Connection
- □ Rain Barrels/Cisterns
- □ Agricultural BMP (ie filter strips)
- □ Level Spreader
- □ Parking Lot BMP (ie porous pavement)
- □ Grass Swale
- X Maintenance
- X Other stabilize toe

IV. Potential Water Quality BMP Project Details:

install rock toe around all basins because soil will not support wet soils. Plant buffer above rock to parking lot & don't mow

V. BMP Priority: High X Medium____ Low____ **Critical Area:** Yes X No____

If Critical Area Explain Why: high vis., horrible quality

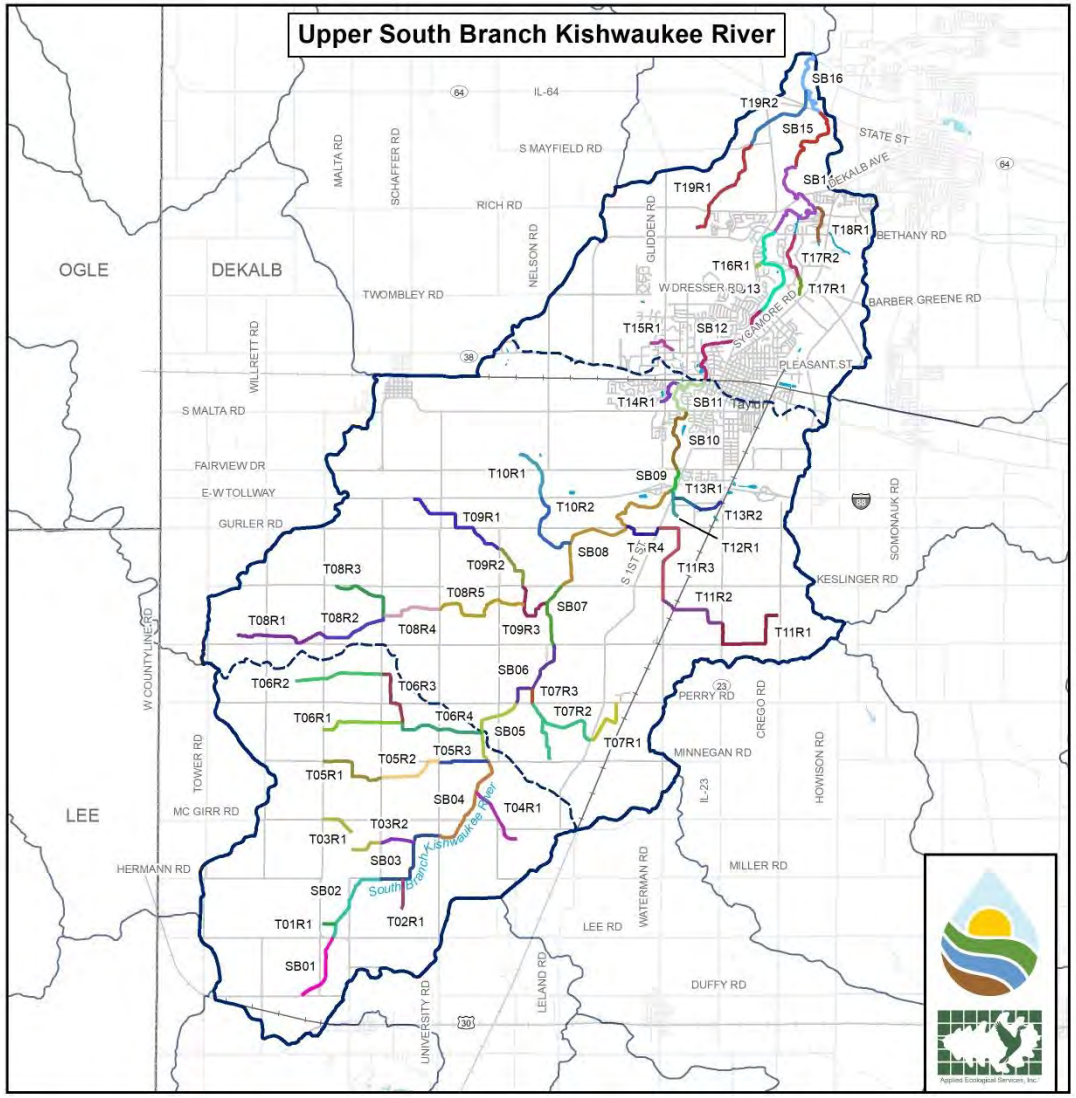
Streams Reaches Map

South Branch Kishwaukee River

- 16 Reaches
- 137,878 lf (26.1 mi)

Tributary streams

- 19 Tributaries
- 227,559 lf (43.1 mi)



South Branch Kishwaukee

SBK Reach 1

SBK Reach 8

SBK Reach 10

SBK Reach 11

SBK Reach 13

SBK Reach 16

Tributaries to South Brank Kishwaukee

Tributary 3

Tributary 6

Tributary 8

Tributary 15

Tributary 18

Tributary 20

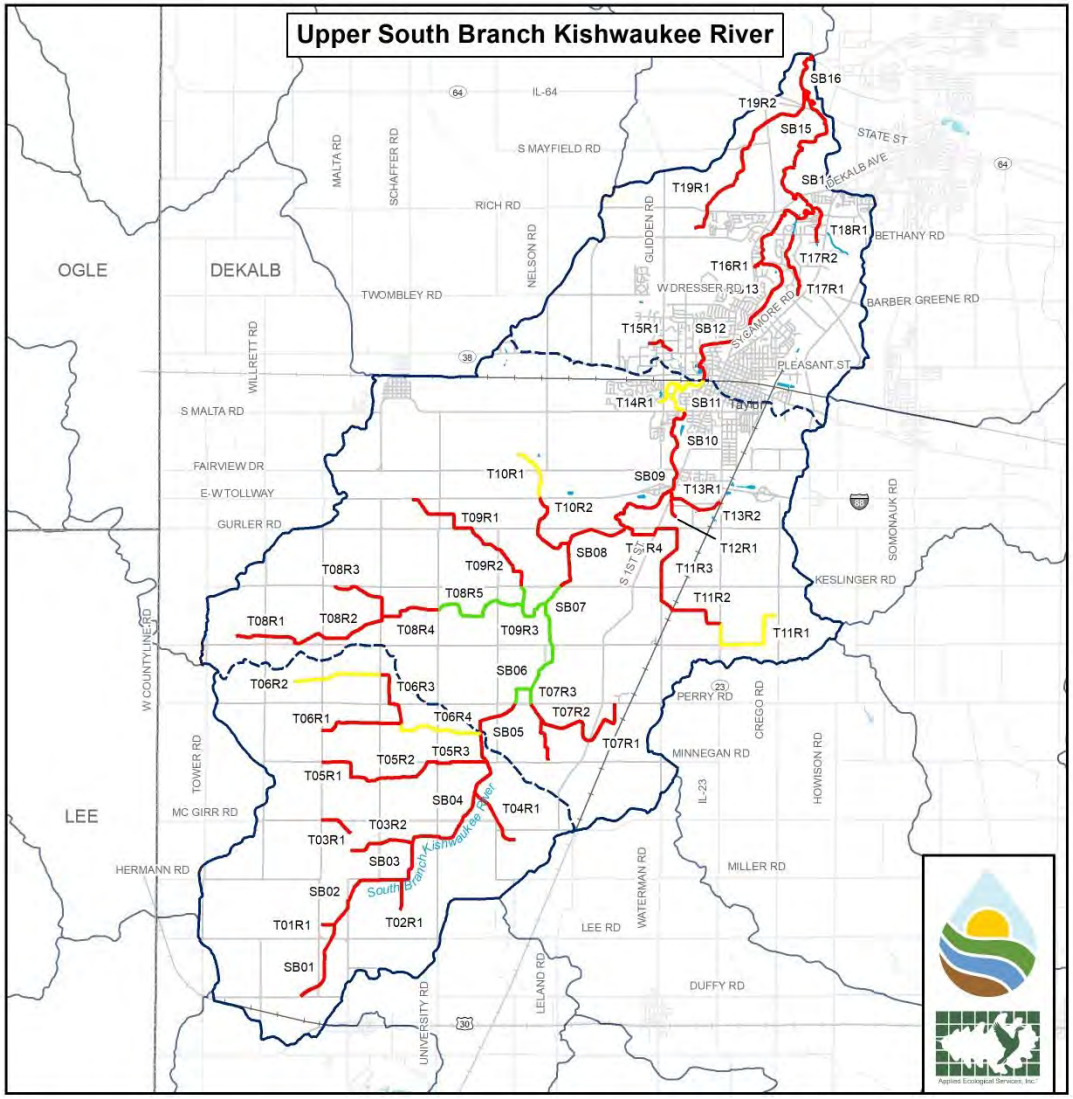
Riparian Area Condition

Riparian Area Condition

Good: 30,062 lf (8%)

Average: 40,712 lf (11%)

Poor: 294,663 lf (81%)



Riparian/Buffer Areas

Tributary 1

Tributary 4

Tributary 11

SBK Reach 10

SBK Reach 11

SBK Reach 13

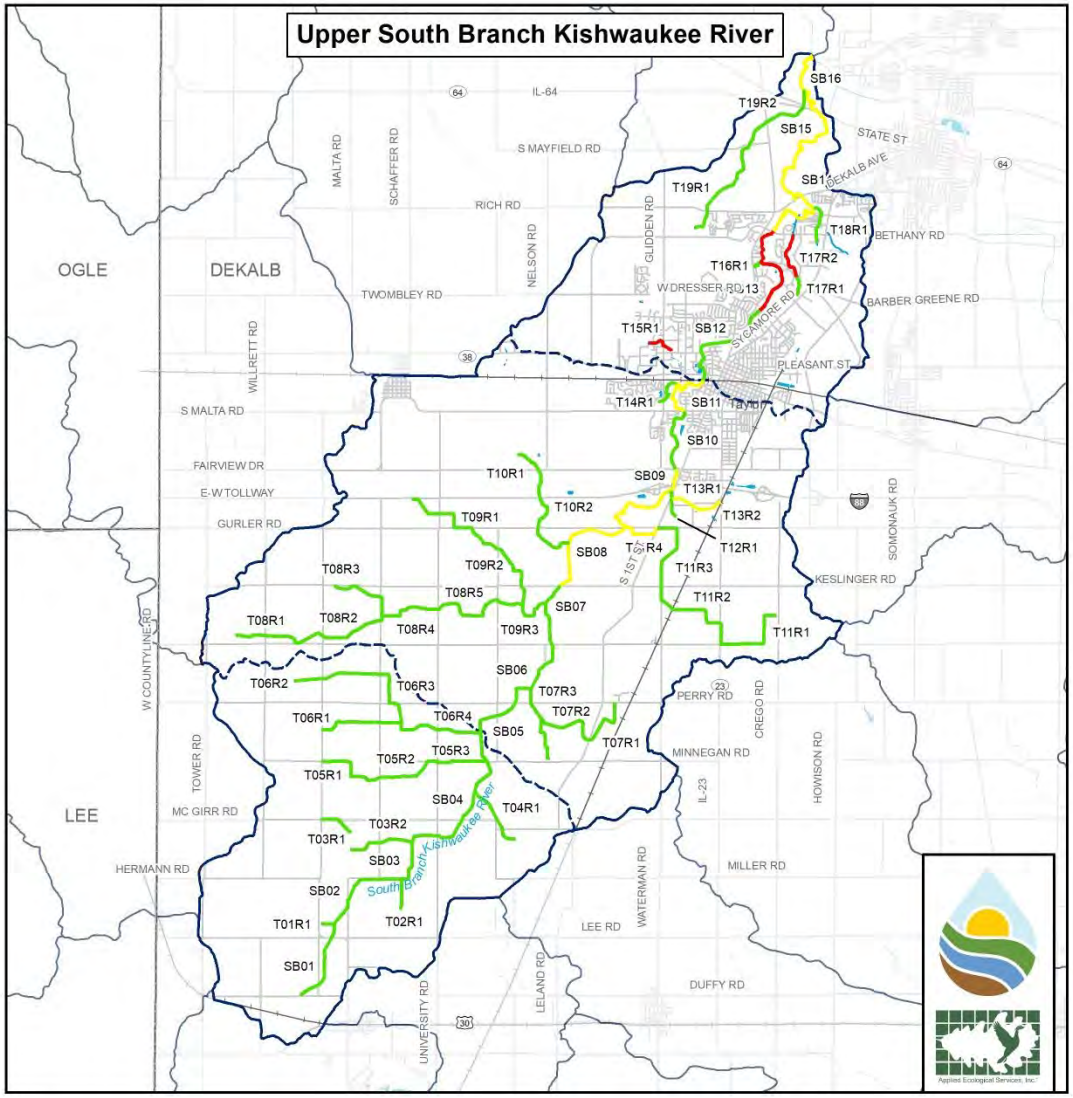
Streambank Erosion

Level of Erosion

High: 17,432 lf (5%)

Mod.: 65,516 lf (18%)

Low: 282,489 lf (77%)



Streambank Erosion

SBK Reach 13

Tributary 11

Tributary 15

Tributary 15

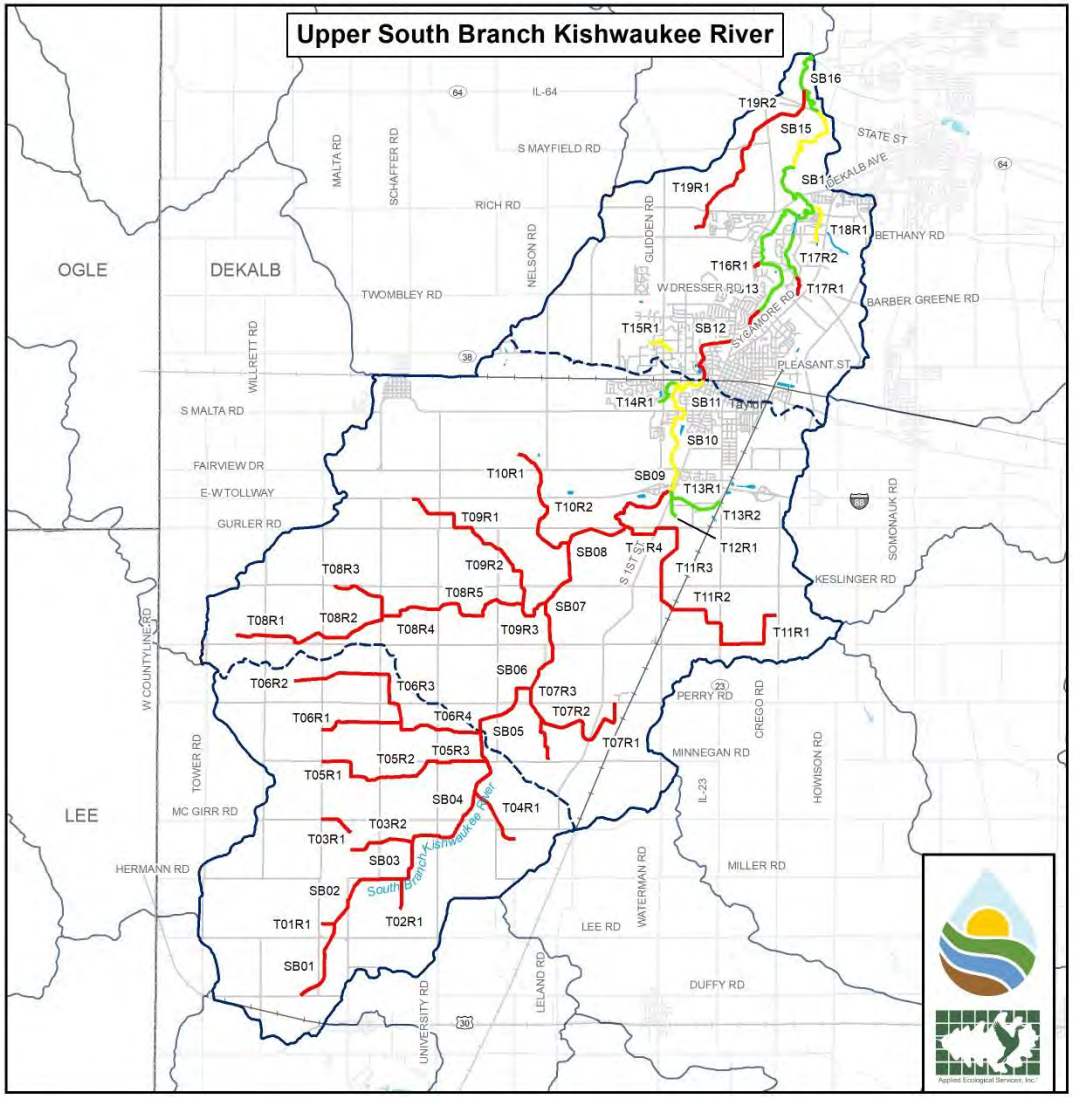
Stream Channelization

Level of Channelization

High: 288,177 lf (79%)

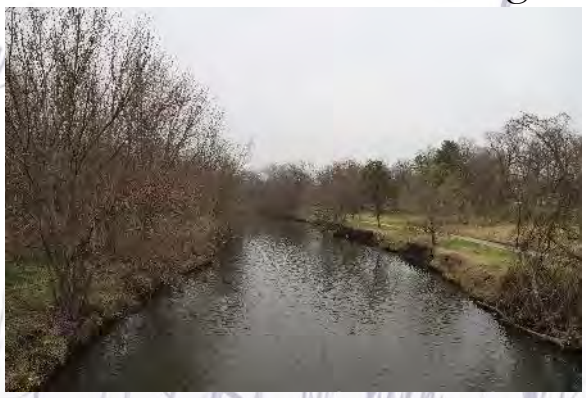
Mod.: 30,356 lf (8%)

Low: 46,905 lf (13%)



Stream Channelization

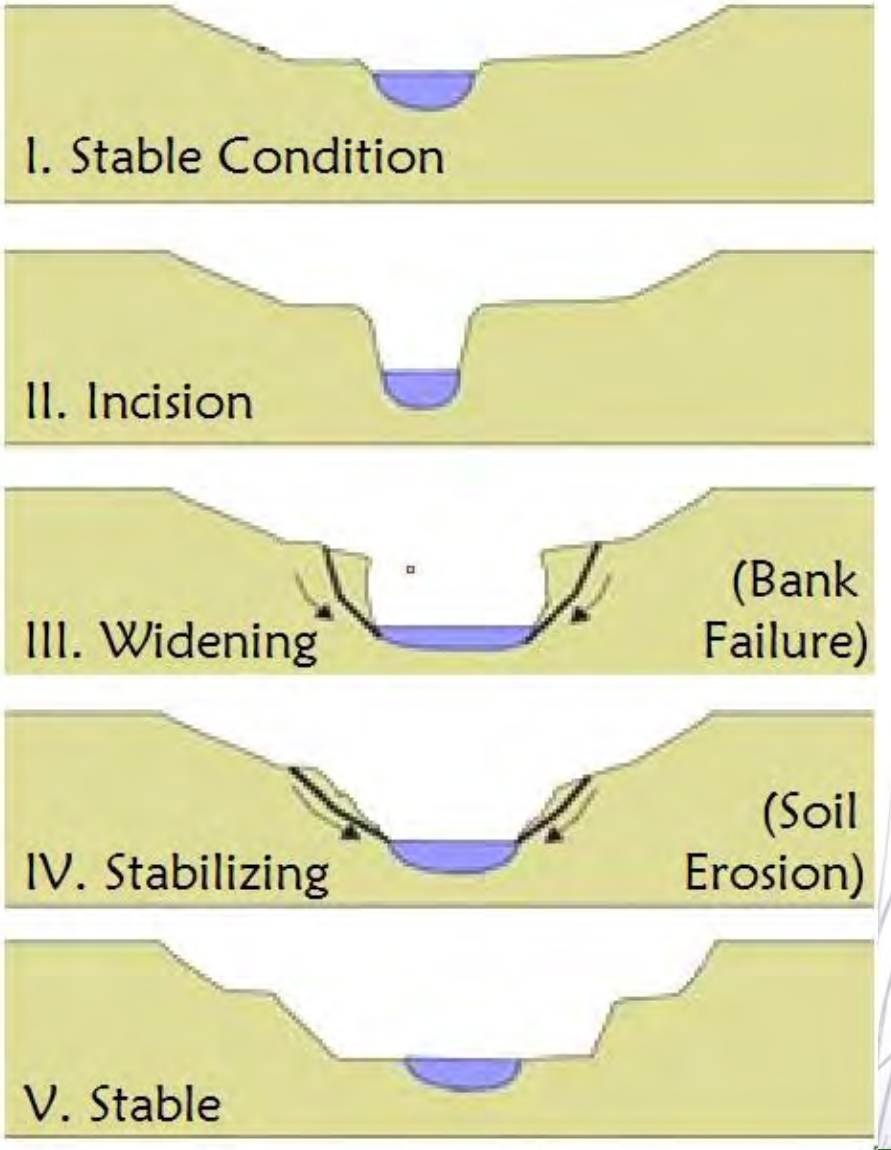
Meandering and Channelized Sections of SBK



SBK Reach 2

SBK Reach 13

What is a Recovering Stream Channel?



"Critical Area" Stream Restoration

Detention Basins Map

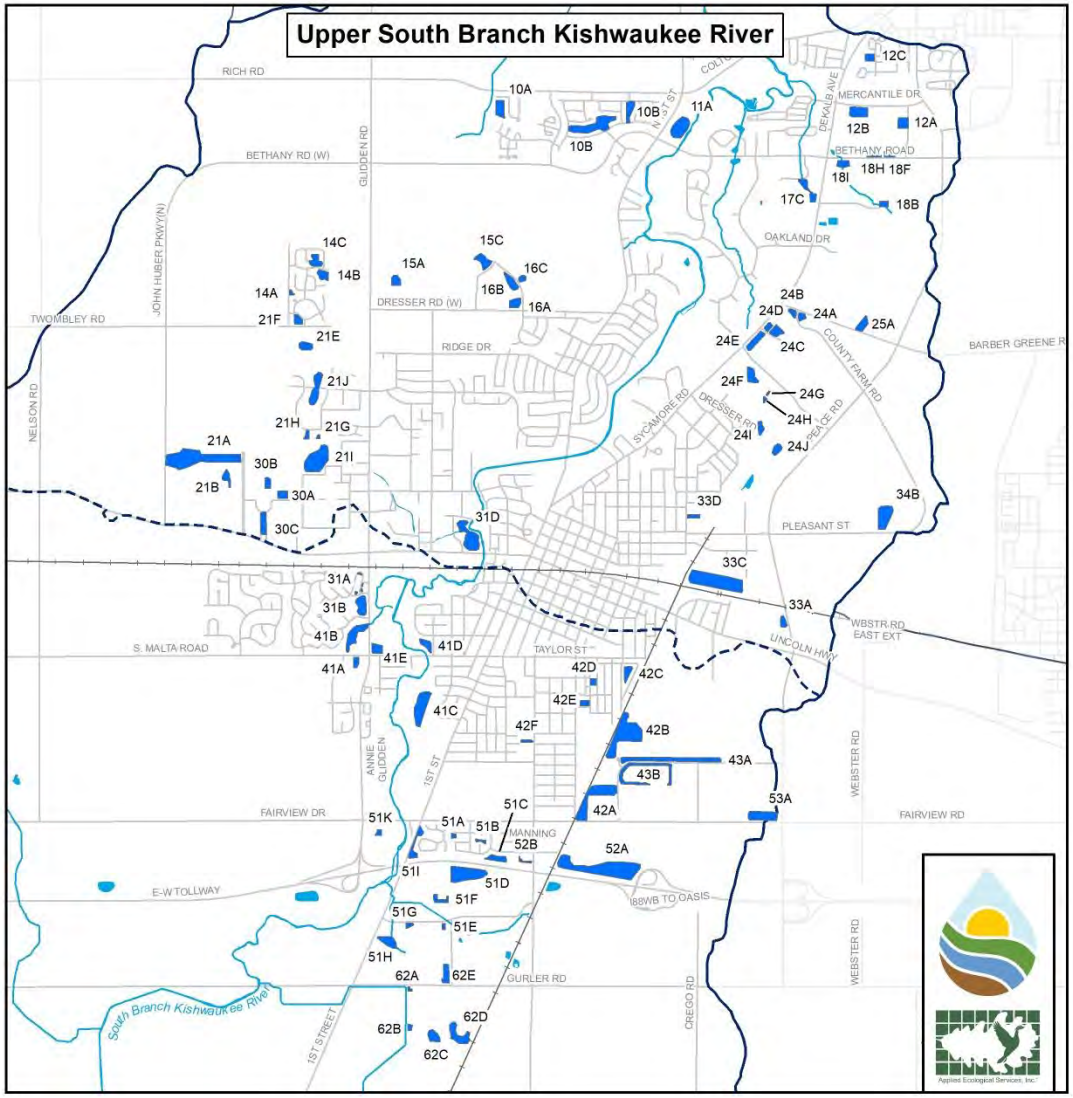
79 detention basins

Type

- 29 Dry bottom
- 42 Wet bottom
- 8 Wetland bottom

Ecological condition

- 8 Good
- 22 Average
- 49 Poor



Detention Basins

Typical Wet Bottom-Turf Slopes

Typical Dry Bottom Turf w/Channel

Typical Wet Bottom- Riprap Slope

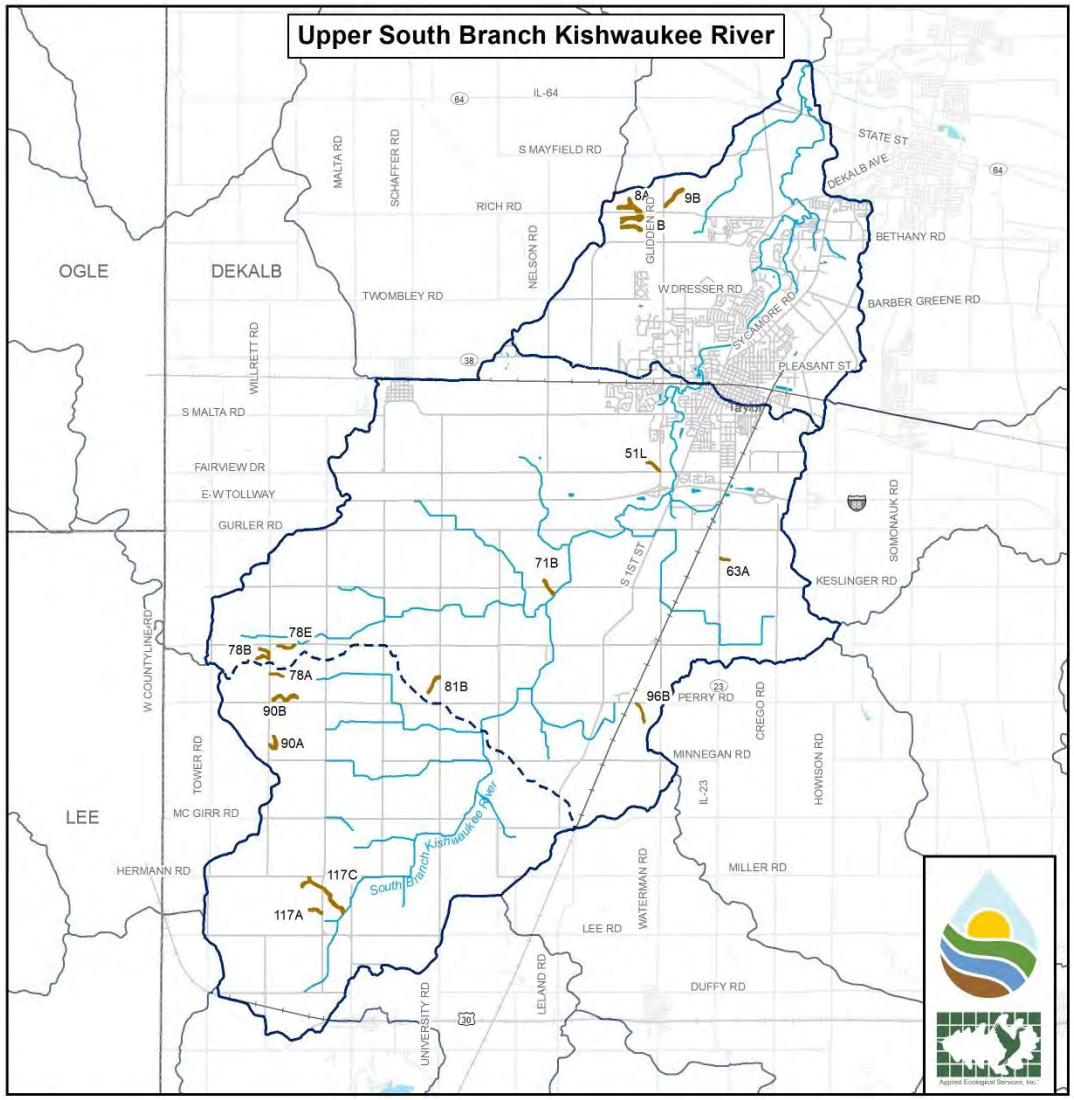
Typical Naturalized Wet Bottom

"Critical Area" Detention Basin Retrofits

Agricultural BMPs

Due to excessive rain until late in the season, will use other methods to assess agricultural field practices

Still found 15 sites in need of grass swales or waterway



Agriculture

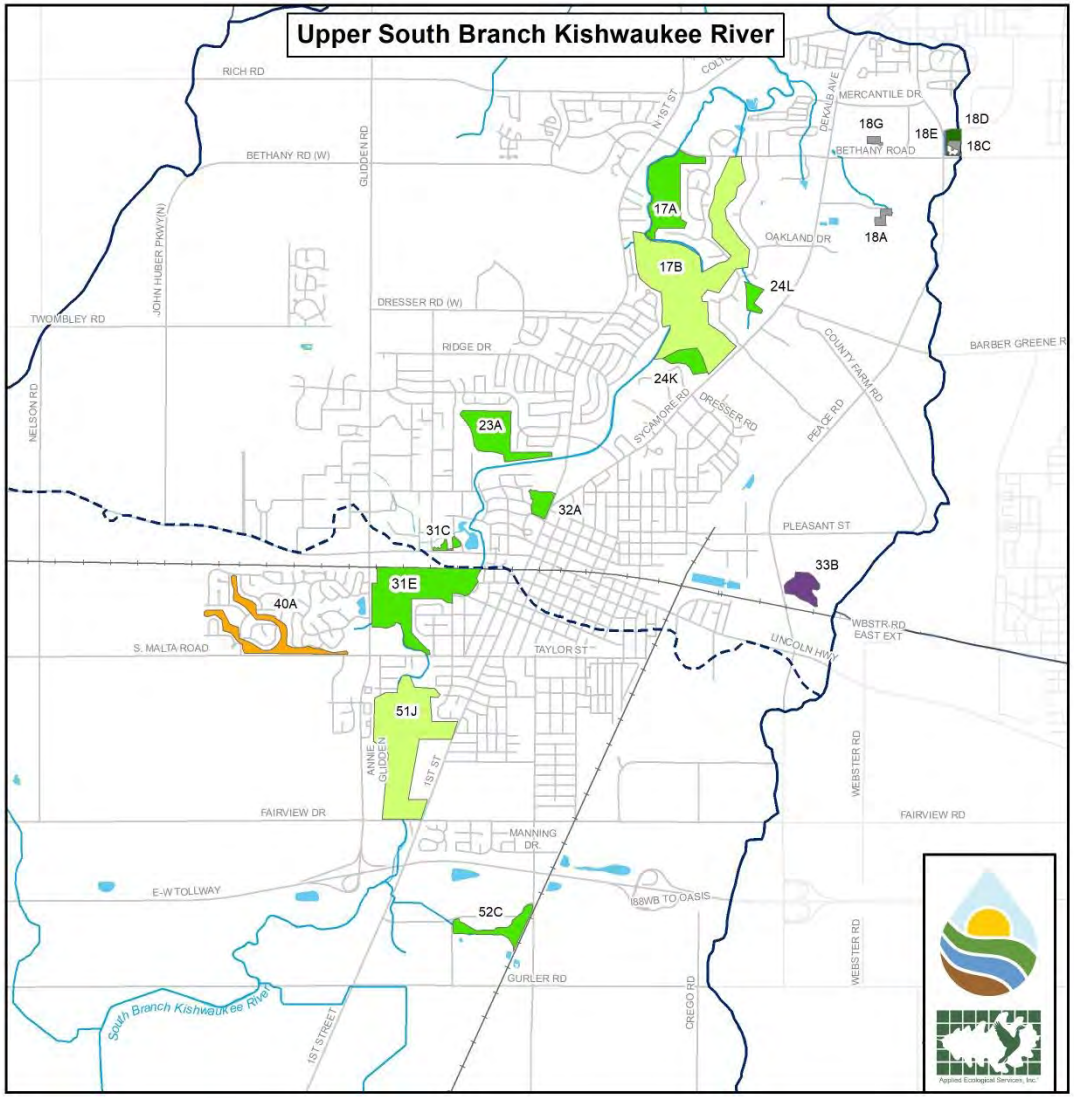
Eroded Swales

Grass Swale & Tilling

Other Management Measures

Recommendation Type

- 1 turf/park
- 8 natural areas
- 2 golf courses
- 1 marsh/wetland
- 1 swale retrofit
- 3 parking lot BMPs
- 1 maintenance



Natural Areas & Open Space

Mesic Woodland- PA
Nehring Forest Preserve

Turf Park- NIU
Engineering Hall

Turf Woodland-
Hopkins Park

Remnant Woodland-
Castle Dr. & Lincoln Hwy

Woodland- Elwood House

"Critical Area" Natural Area Restoration

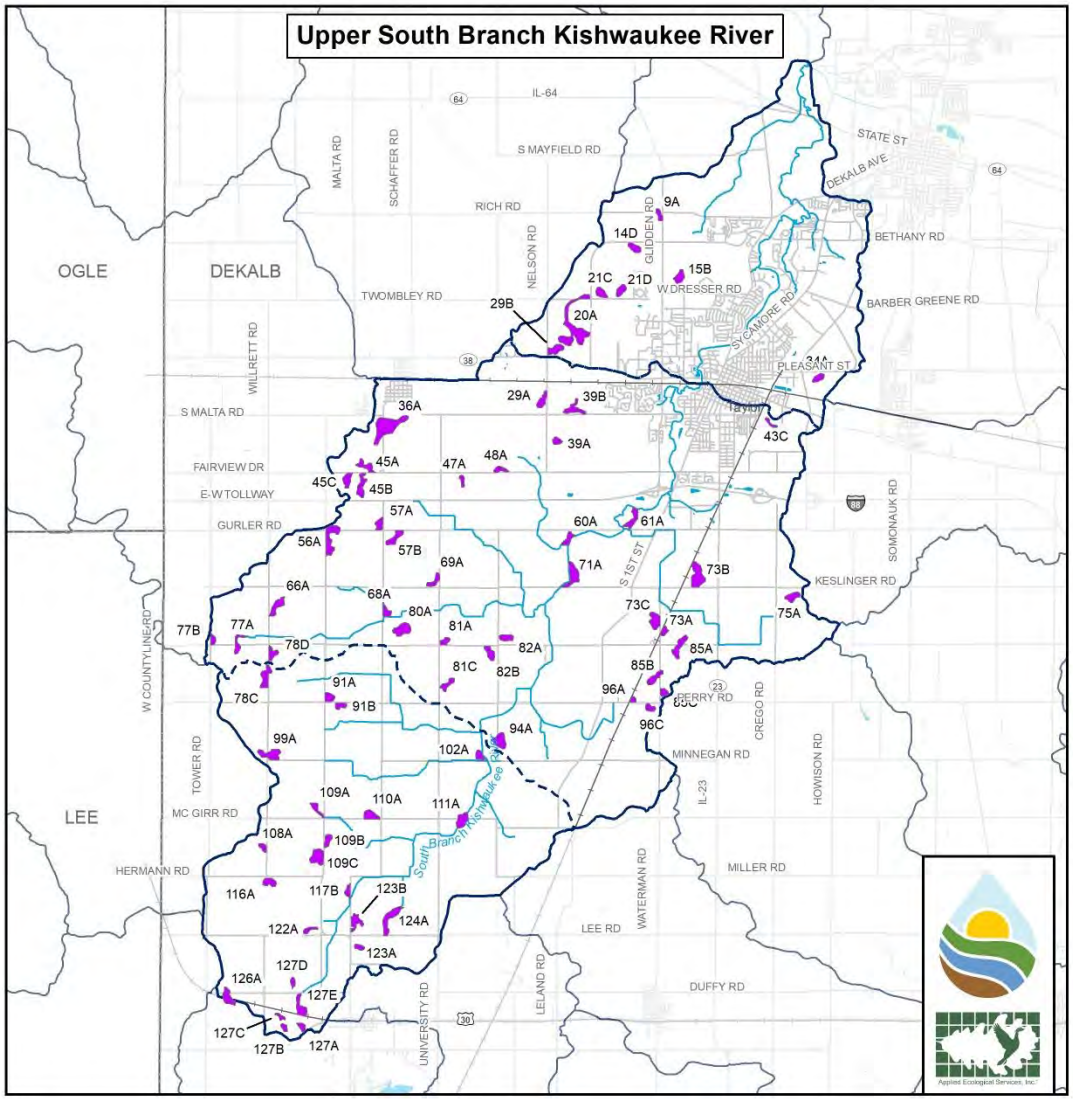
"Critical Area" Golf Courses

River Heights Golf Course

Buena Vista Golf Course

Potential Wetland Restoration Sites

68 potential wetland restoration sites



Drained Wetland Sites

Riser Structure in Wetland

Typical Farmed Wetland

"Critical Area" Wetland Restoration Sites


Questions?