

# Watershed Inventory

Steve Zimmerman, M.S., Senior Ecologist  
Cecily Cunz, AICP, Environmental Planner



APPLIED ECOLOGICAL SERVICES, INC.

# Watershed Inventory Discussion Topics

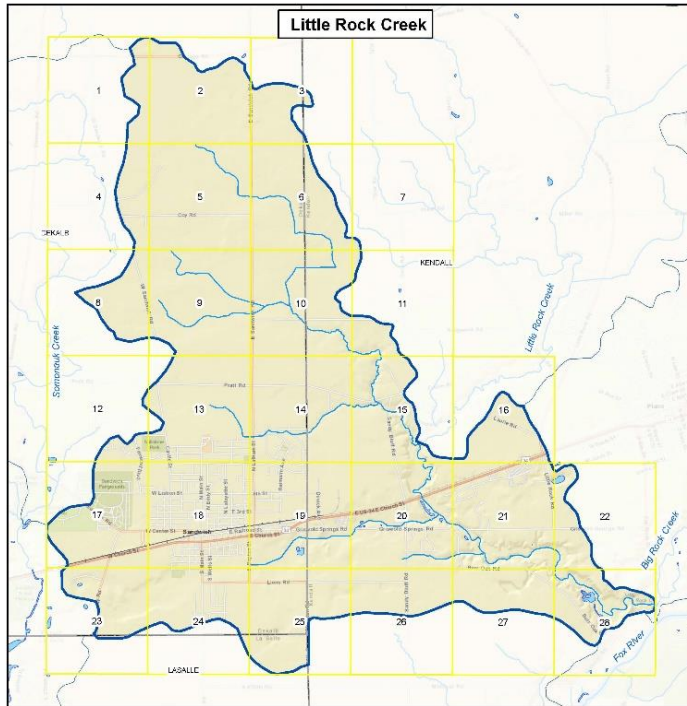
- Inventory Methodology
- Little Rock Creek & Tributaries
- Streambank Erosion
- Riparian Area Condition
- Stream Channelization
- Detention Basins
- Priority Green Infrastructure Protection Areas
- Potential Wetland Restoration Sites
- Other Areas



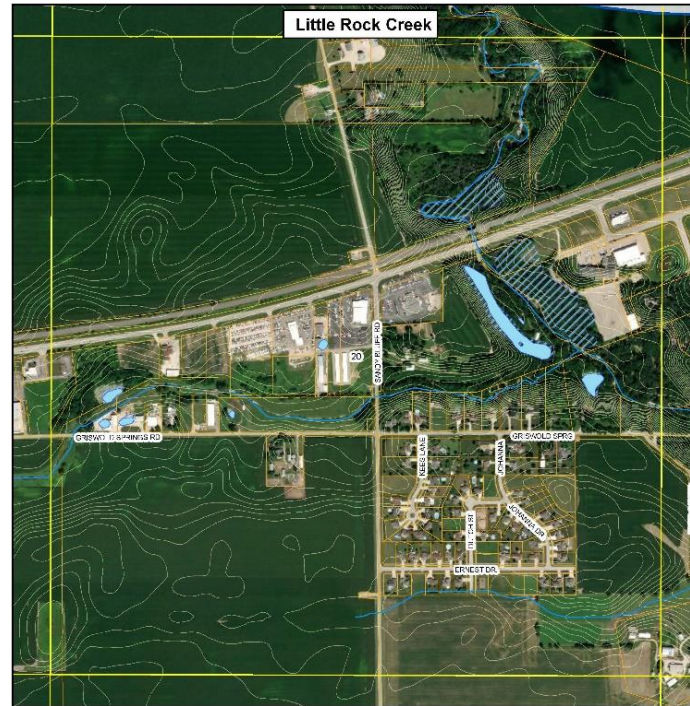
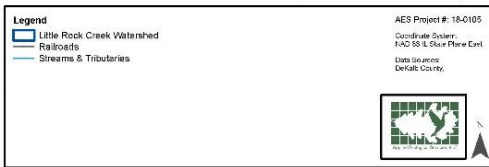


# Watershed Inventory Methodology

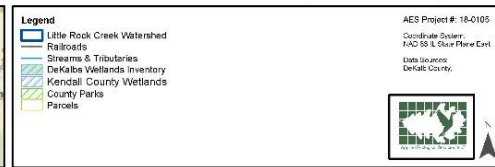
- Index maps: aerial, topo, streams, wetlands, roads, etc.
- Maps were used to identify and map watershed BMPs
- Data sheets were used to document potential BMPs



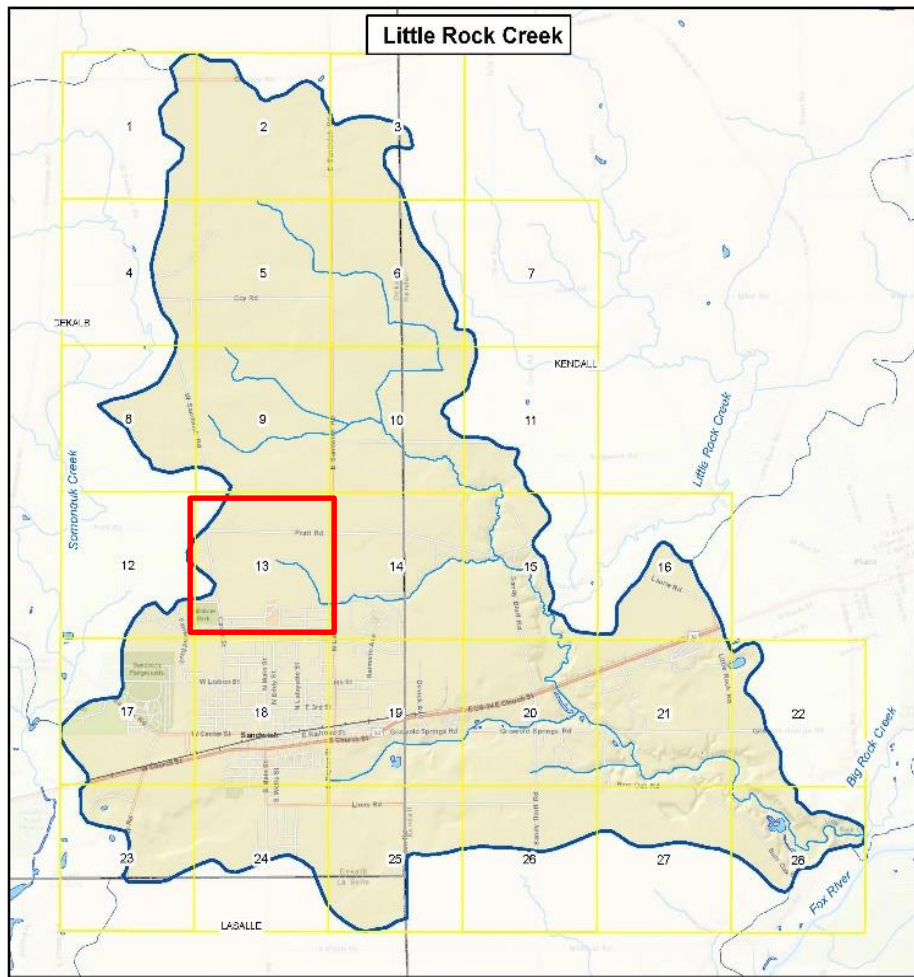
Field Inventory Map, Cover



Field Inventory Map, Tile 20







Field Inventory Map, Cover

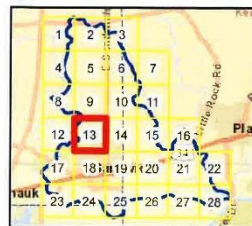


- Legend**
- Little Rock Creek Watershed
  - Railroads
  - Streams & Tributaries

AES Project #: 18-0105  
 Coordinate System:  
 NAD 83 IL State Plane East  
 Data Sources:  
 DeKalb County



Field Inventory Map, Tile 13



- Legend**
- Little Rock Creek Watershed
  - Railroads
  - Streams & Tributaries
  - DeKalbs Wetlands Inventory
  - Kendall County Wetlands
  - County Parks
  - Parcels

AES Project #: 18-0105  
 Coordinate System:  
 NAD 83 IL State Plane East  
 Data Sources:  
 DeKalb County



# LITTLE ROCK CK WATERSHED MISC. WATER QUALITY BMP FORM

I. Site Name: Latham St Flooding problem Date: 11/5/19 Photos: 19, 22  
 Approx. Size (ac) \_\_\_\_\_ Investigators: SZKC Owner: \_\_\_\_\_  
 Location(s): E of Sandhurst and S of Latham  
 AES ID# 13B Map Index # 13, 14

- 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)
  - 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:  
Large low lying cropland W of Latham that drains to corner  
of Latham + Sandhurst, area is a significant flood  
problem, also 2 dry bottom turf grass basins

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
  - Naturalization w/ Natives
  - Green Infrastructure Connection
  - Rain Barrels/Cisterns
  - Agricultural BMP (ie filter strips)
  - Level Spreader
  - Parking Lot BMP (ie porous pavement)
  - Grass Swale
  - Maintenance
  - Other \_\_\_\_\_

IV. Potential Water Quality BMP Project Details:  
create extensive water/wetland storage area west  
of Latham + naturalize two existing turf grass basins

V. BMP Priority: High X Medium \_\_\_\_\_ Low \_\_\_\_\_ Critical Area: Yes X No \_\_\_\_\_  
 If Critical Area Explain Why: major flood problem, most important  
project in the watershed

# LITTLE ROCK CREEK WATERSHED STREAM INVENTORY/BMP FORM

STREAM NAME: Little Rock Creek trs REACH ID: 3 DATE: 11/6/19  
 REACH BOUNDARIES: Frazier to junction with HUC 12 OWNER: \_\_\_\_\_  
Watershed to East  
 MAP/AES# 15 PHOTOS 24-28 APPROX. LENGTH (ft): \_\_\_\_\_ INVESTIGATOR: SZKC

CHANNEL CONDITIONS:  
 CHANNELIZATION: NONE X LOW \_\_\_\_\_ MODERATE \_\_\_\_\_ HIGH \_\_\_\_\_  
 SPOILS PILES ON BANKS (Left / Right / Both) None

CHANNEL SINUOSITY: NONE \_\_\_\_\_ LOW \_\_\_\_\_ MODERATE \_\_\_\_\_ HIGH X

POOL/RIFLE DEVELOPMENT: NONE \_\_\_\_\_ LOW \_\_\_\_\_ MODERATE \_\_\_\_\_ HIGH X

DEGREE OF BANK EROSION (circle most appropriate):

NONE	<u>LOW</u>	MODERATE	HIGH
Stable; less than 5% of banks affected.	Moderately stable; 5-33% of 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)
<u>2.5</u>	<u>12</u>	<u>2.5</u>

DEBRIS JAMS: INSTREAM/OVERBANK: LOW X MODERATE \_\_\_\_\_ HIGH \_\_\_\_\_

SEDIMENT ACCUMULATION: LOW X MODERATE \_\_\_\_\_ HIGH \_\_\_\_\_

RIPARIAN VEGETATION COVER (facing downstream):  
 BRIEFLY DESCRIBE RIPARIAN AREA: Composed of mixture of Oak  
Savanna/Woodland and marsh/sedge meadow. All  
is somewhat degraded

OVERALL ECO CONDITION OF RIPARIAN AREA: GOOD: \_\_\_\_\_ AVERAGE: X POOR: \_\_\_\_\_

- BMP RECOMMENDATIONS:
- 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)
  - Maintenance (ie debris clearing)

BMP DETAILS: control invasive species and thin/  
remove second growth trees and shrub species

BMP PRIORITY: CRITICAL AREA \_\_\_\_\_ HIGH \_\_\_\_\_ MEDIUM X LOW \_\_\_\_\_  
 Explain Priority: \_\_\_\_\_



# Streams Reaches

## Little Rock Creek

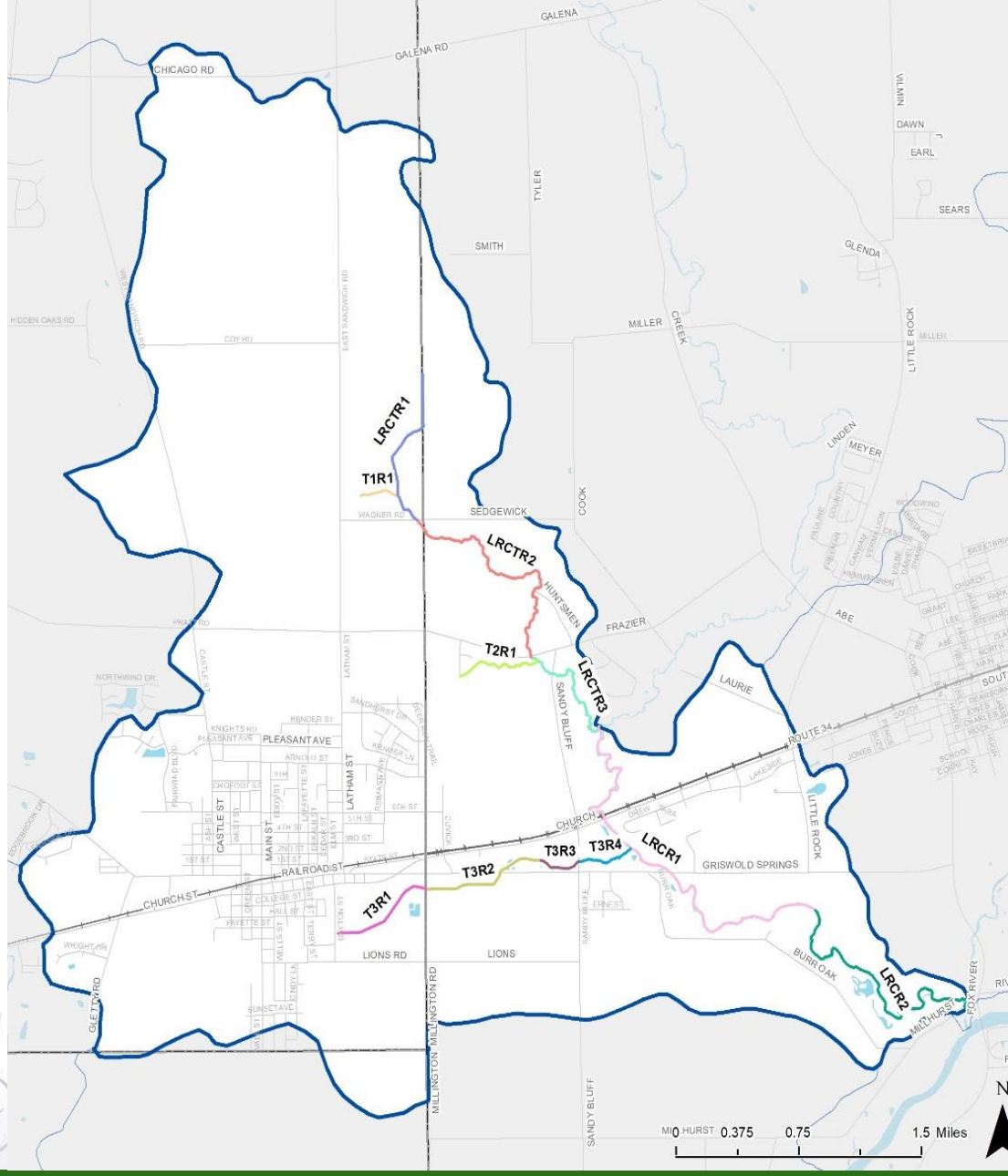
- 2 Reaches
- 23,528 lf (4.5 mi)

## Little Rock Creek Tributary

- 3 Reaches
- 18,150 lf (3.4 mi)

## Tributary streams

- 3 Tributaries
- 14,914 lf (2.8 mi)



# Little Rock Creek & Tributaries



LRCTR Reach 1



LRCTR Reach 2



LRCTR Reach 3



LRC Reach 1



LRC Reach 2





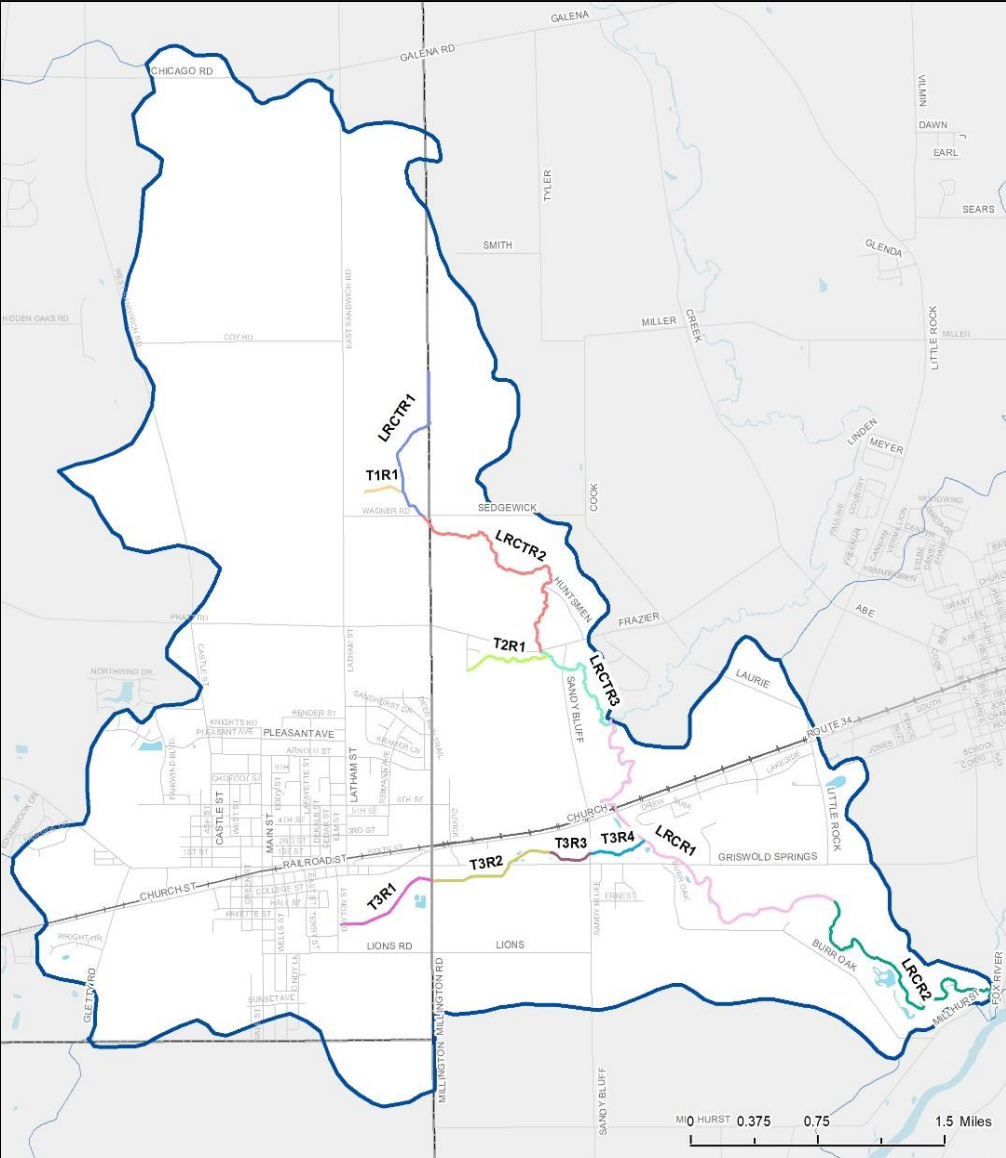
# Secondary Tributaries to Little Rock Creek



Tributary 2



Tributary 3





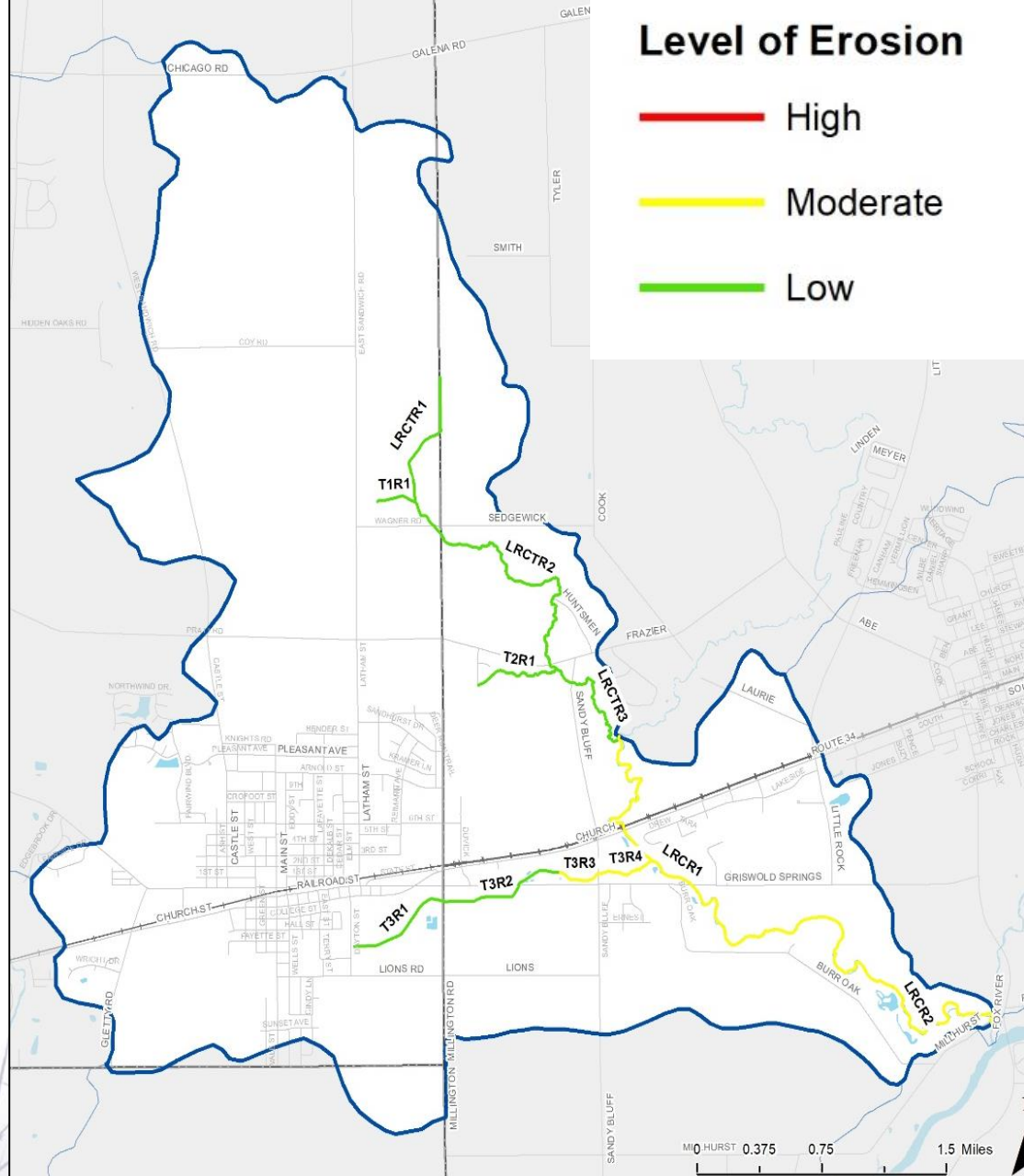
# Streambank Erosion

## Level of Erosion

**High:** 0 lf (0%)

**Mod.:** 26,797 lf (47%)

**Low:** 29,796 lf (53%)



# Streambank Erosion



Tributary 3



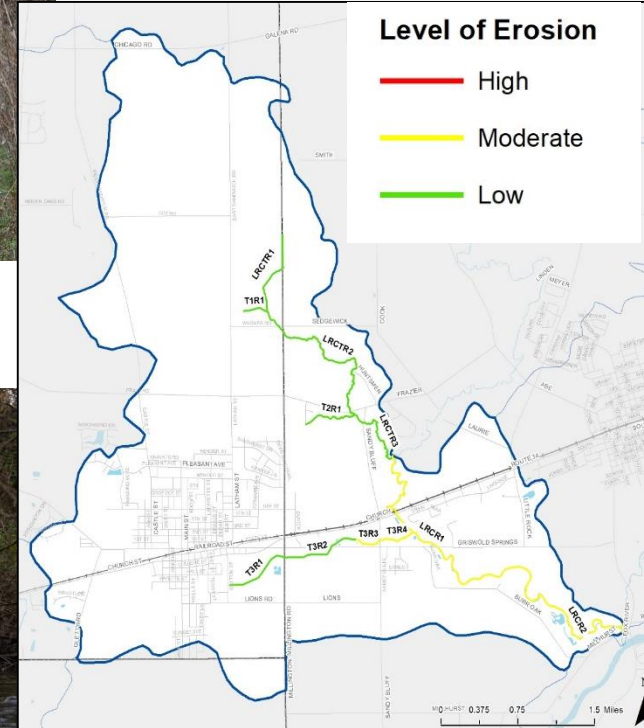
LRCTR Reach 3



LRC Reach 1



LRC Reach 2





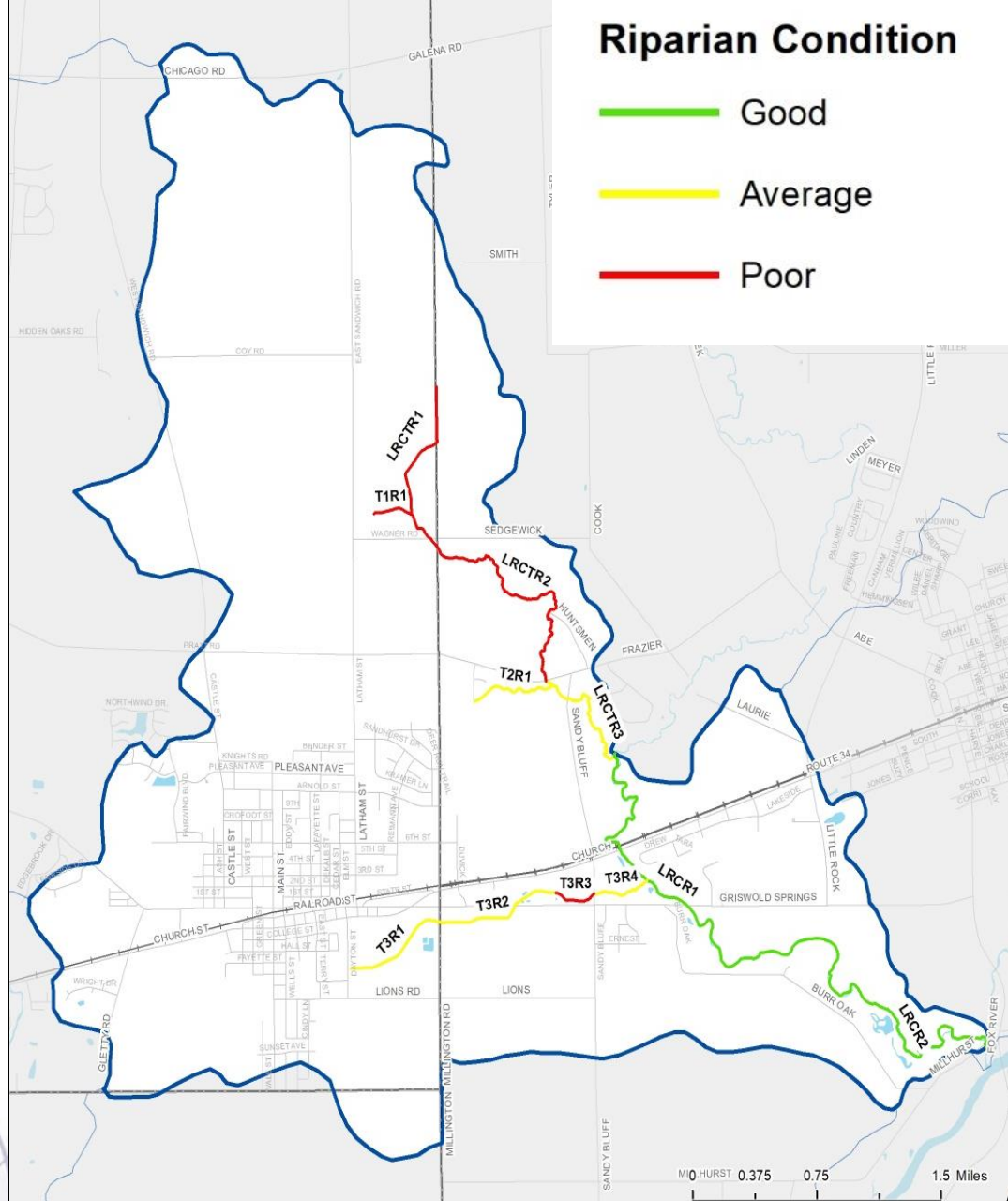
# Riparian Areas

## Riparian Area Condition

**Good:** 23,528 lf (42%)

**Average:** 16,611 lf (29%)

**Poor:** 16,453 lf (29%)





# Riparian Areas



**Tributary 2**



**Tributary 3**



**LRCTR Reach 2**



**LRCTR Reach 3**



**LRC Reach 1**



**LRC Reach 2**





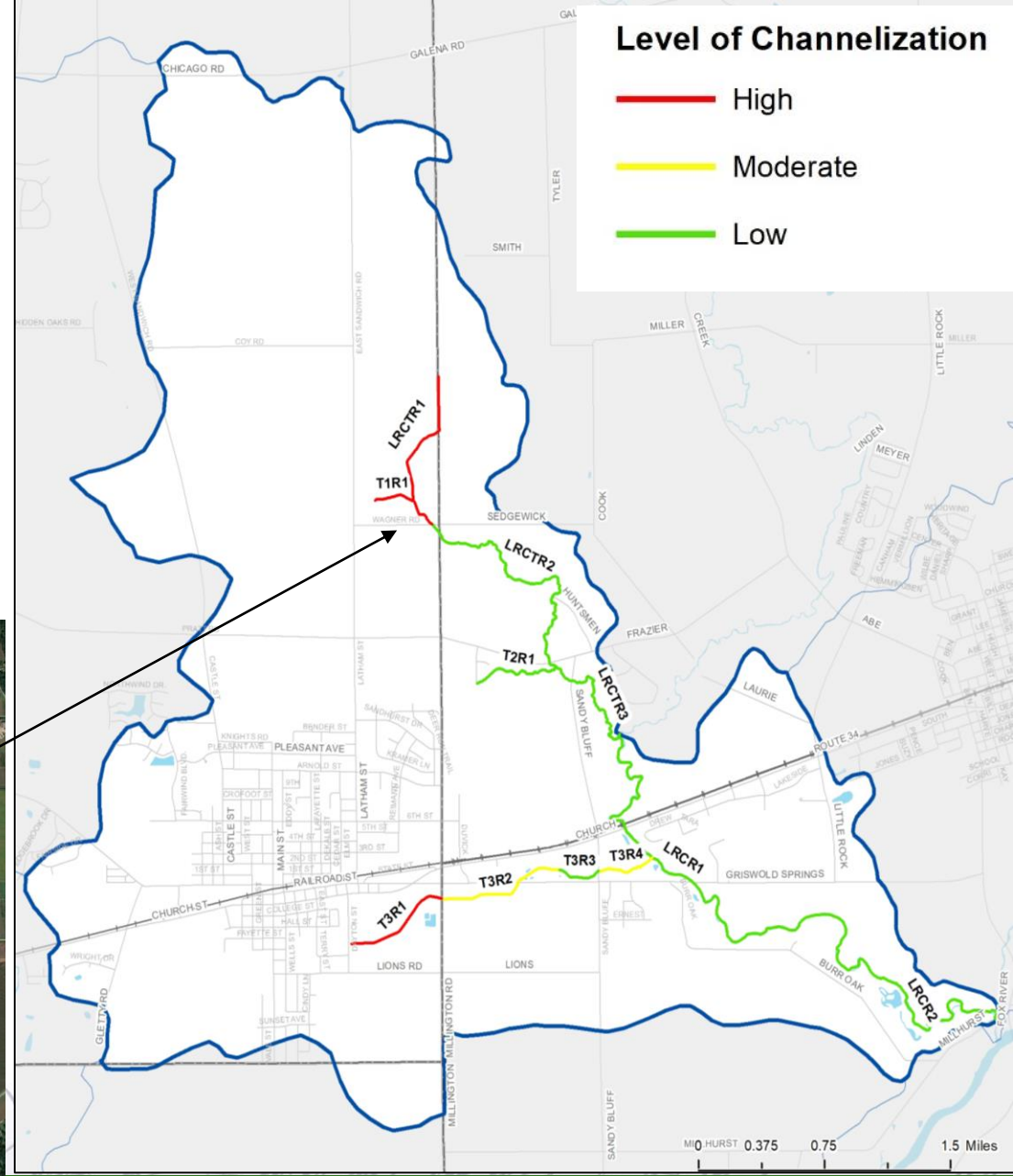
# Stream Channelization

## Level of Channelization

**High:** 9,835 lf (17%)

**Mod.:** 5,982 lf (11%)

**Low:** 40,776 lf (72%)





# “Critical Area” Stream Restoration





# Detention Basins

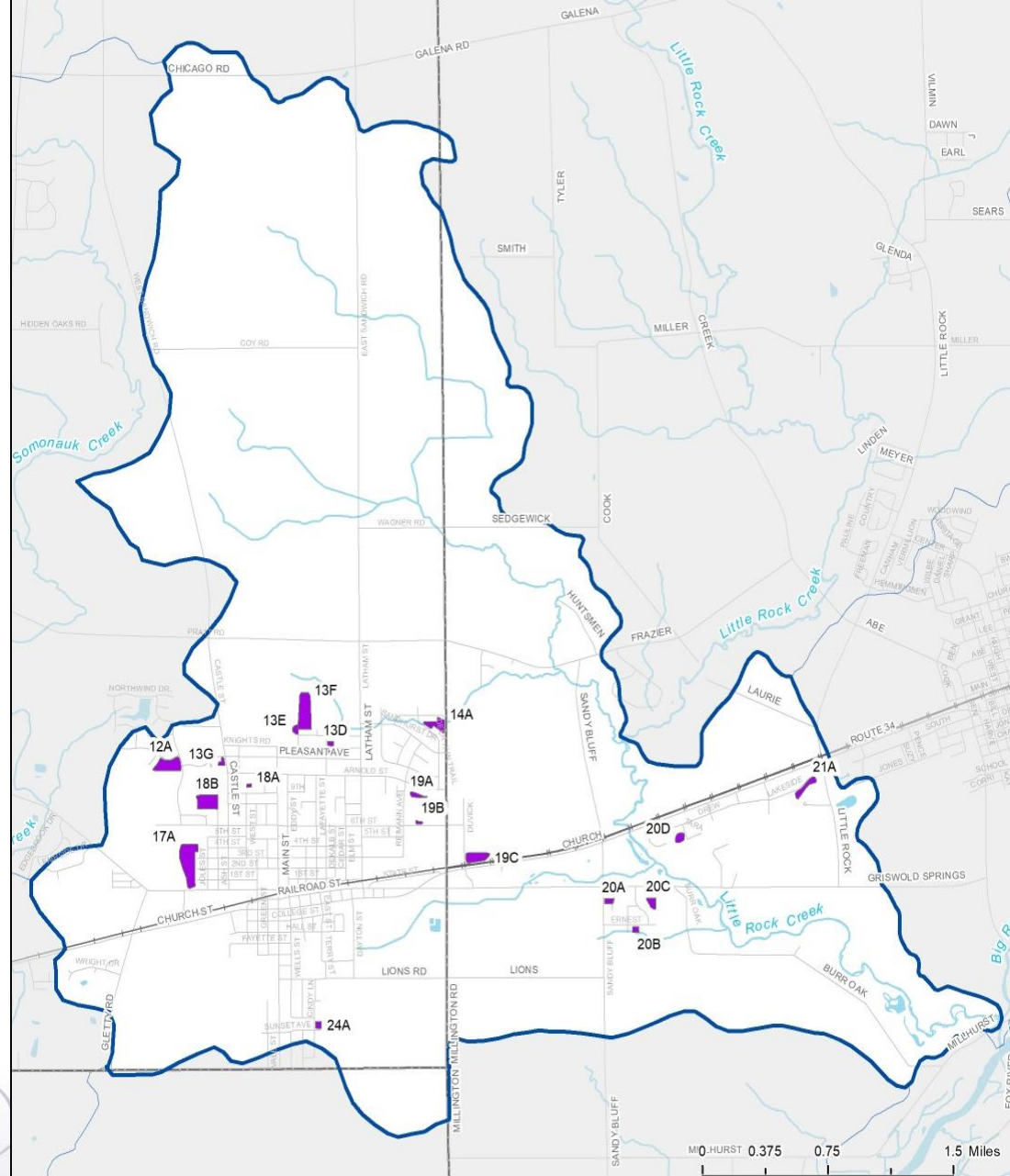
18 detention basins

## Type

- 12 Dry bottom
- 5 Wet bottom
- 1 Wetland bottom

## Ecological condition

- 0 **Good**
- 6 **Average**
- 12 **Poor**



# Detention Basins



Typical Dry Bottom Turf Grass



Typical Naturalized Wetland Bottom

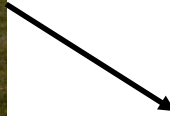


Typical Naturalized Wet Bottom





# “Critical Area” Detention Basin Retrofits

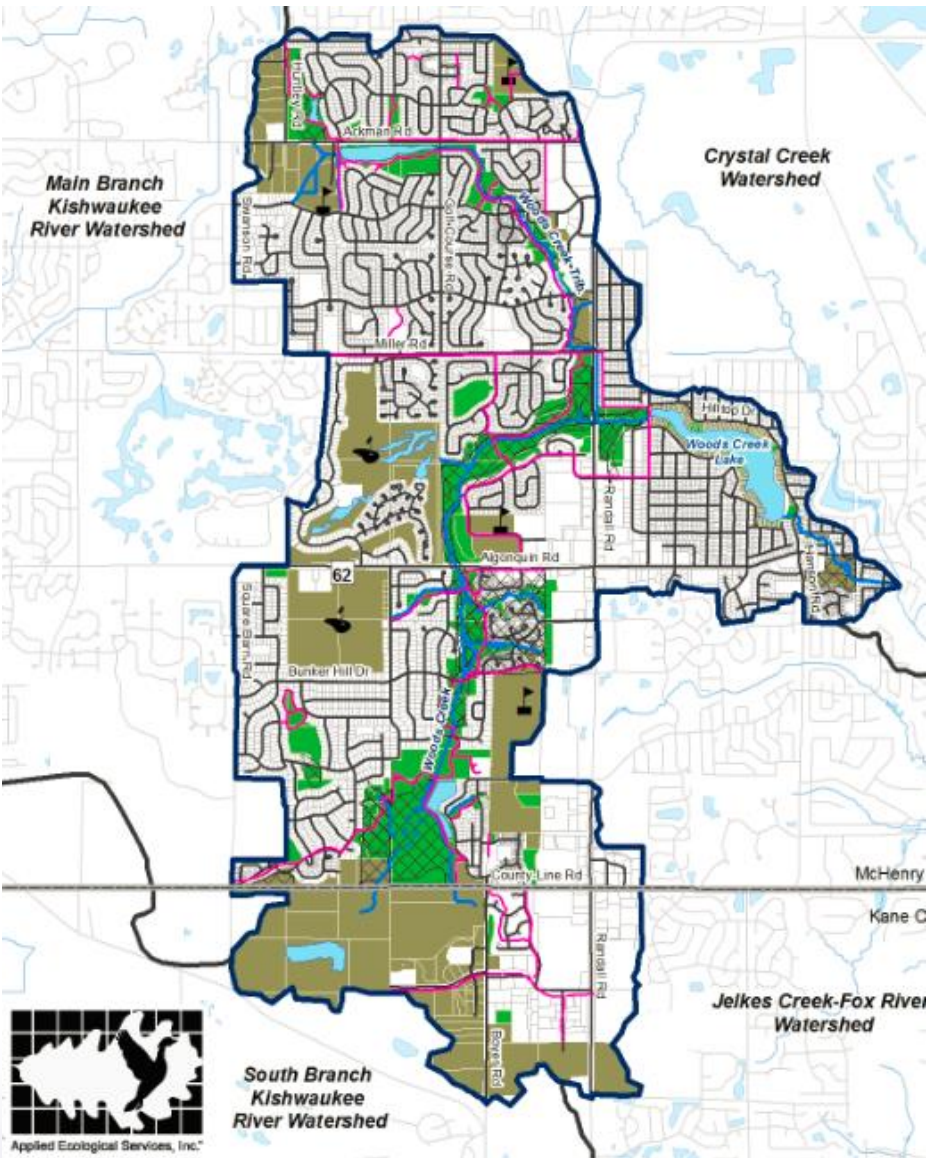








# Woods Creek GI Example





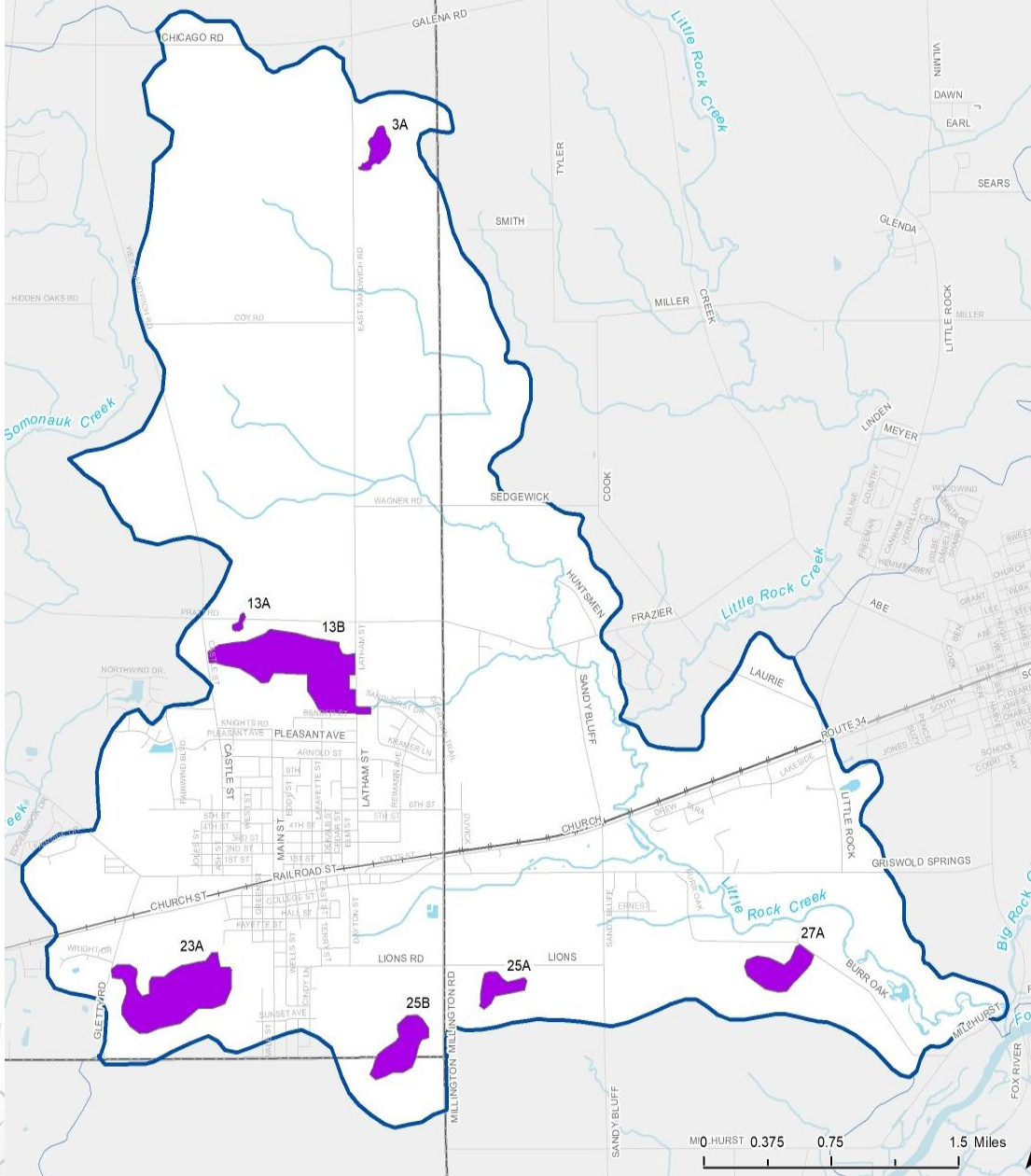
# “Critical Area” Dam & Bridge Removal Little Rock Creek Forest Preserve





# Potential Wetland Restoration Sites

7 potential wetland restoration sites located on agricultural land





# “Critical Area” Wetland Restoration Sites





# Additional Info Needed

- Water quality sampling to account for inputs from upstream reaches of Little Rock Creek
- Future coordination with Conservation Foundation
- Schedule next meeting...





# Watershed Planning Schedule

*March '20*– Watershed Characteristics Assessment, Part 1

*May '20* – Watershed Characteristics Assessment, Part 2

*July '20* – Water Quality, Initial Modeling Results

*September '20* – Watershed Goals & Prioritization

*November '20* – Critical Areas and Action Plan

*January '21* – Outreach Plan, Monitoring Plan, & Milestones





# Discussion

