

An Assessment Method for Determining Water Quality and Restoration Potential in an Urban Stream

Shipbuilders Creek in Monroe County, NY



**Andy Sansone
Monroe County
Dept. of Environmental Services**

Why do Watershed Assessments ?

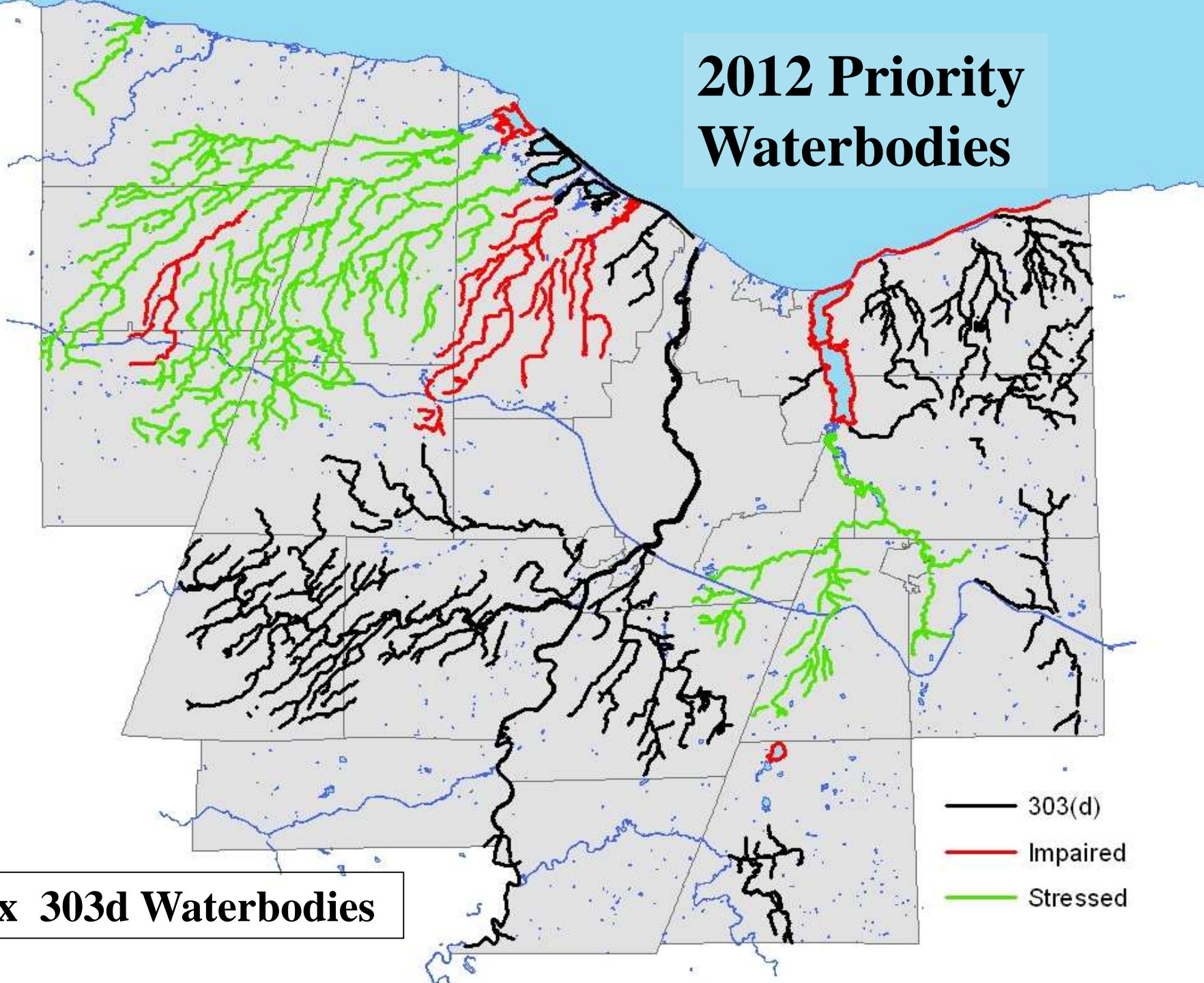


- **Impaired Waterbodies**
- **Stormwater Permit Requirements**
- **County Stormwater Master Plan**

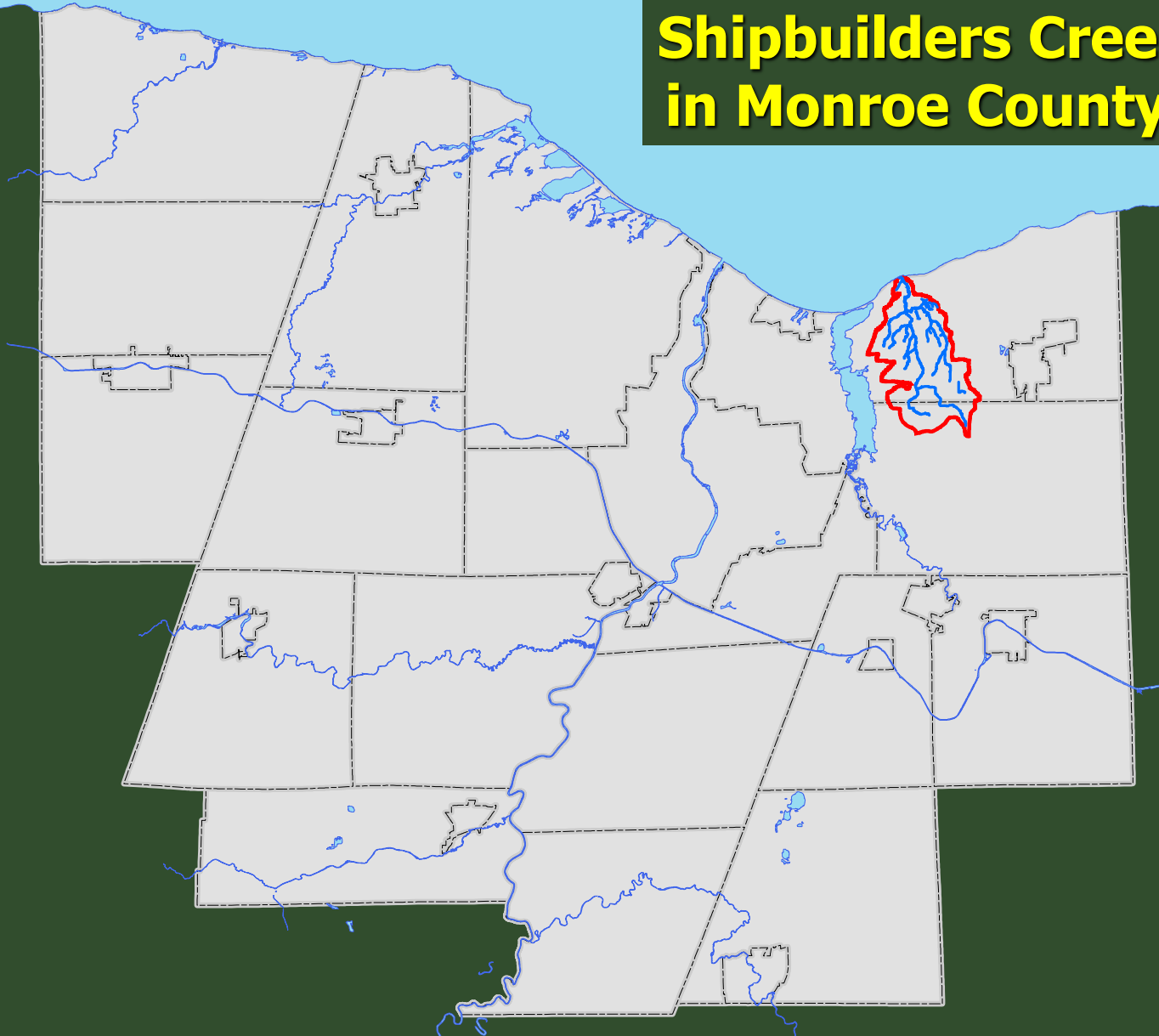
2012 Priority Waterbodies

17 x 303d Waterbodies

- 303(d)
- Impaired
- Stressed

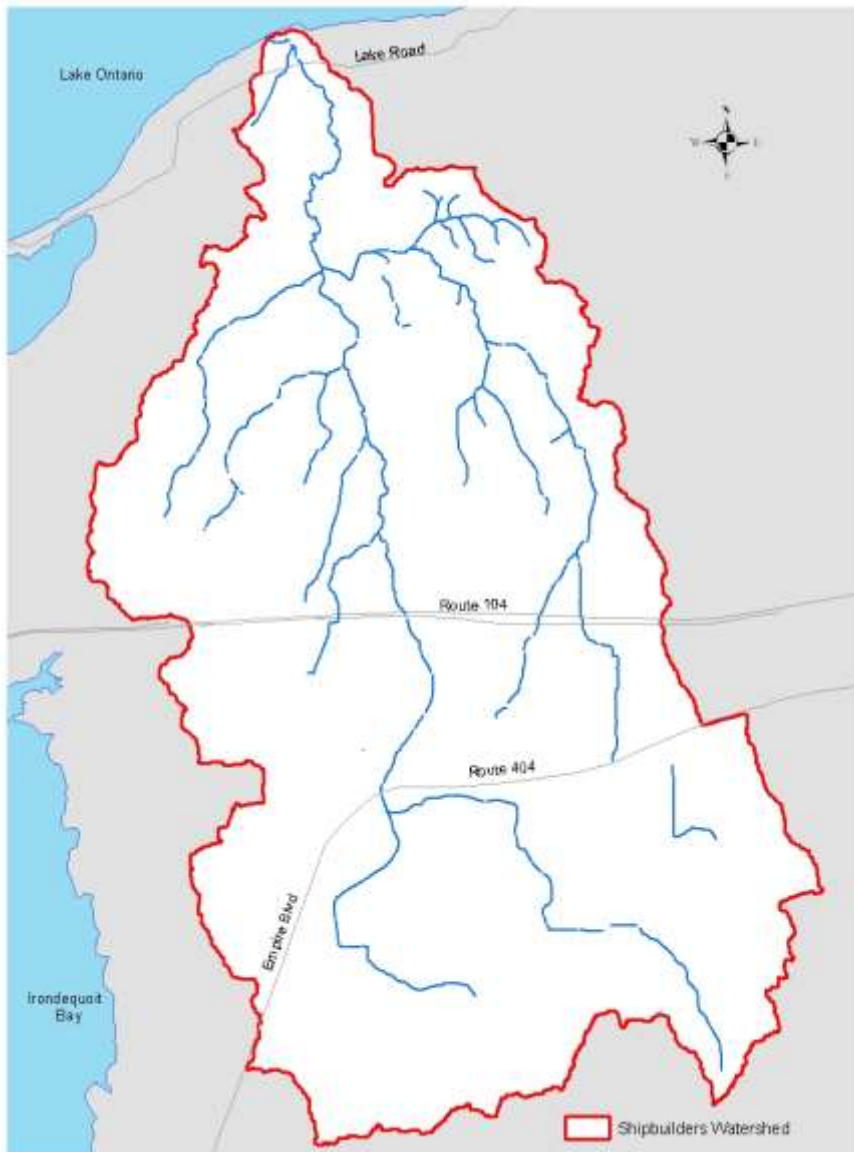


Shipbuilders Creek in Monroe County



Watershed Characterization

- **Flows to Lake Ontario AOC**
- **5,000 Acre Watershed**
- **303(d) Stream**
- **Pathogens and Phosphorus**
- **Primarily Residential Land Use**
- **2 x Municipalities**



Methods

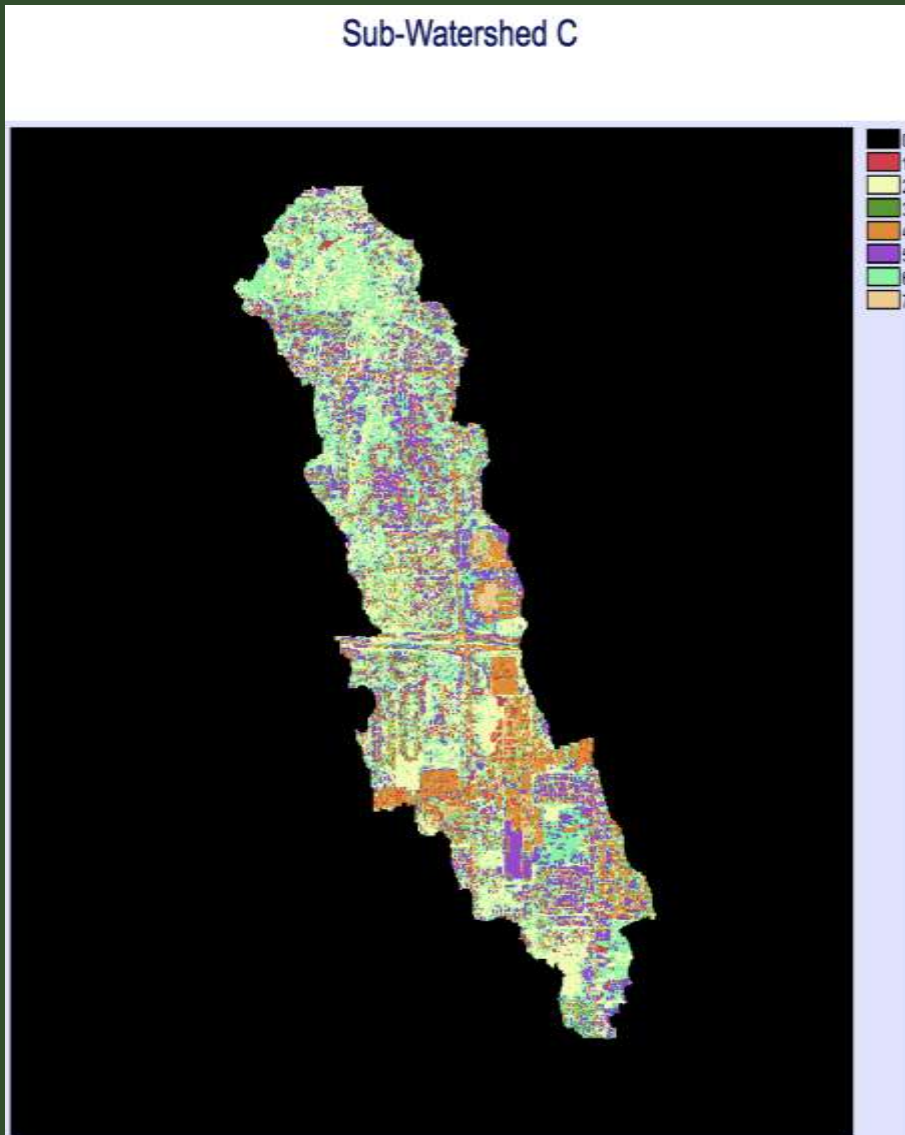


- **GIS Desktop Assessment**
- **Stream Corridor Walk**
- **Upland Land Survey**
- **Sampling**
- **Restoration Inventory**



Desktop Assessment

- **Watershed Boundaries**
- **Impervious Cover**
- **Land Use**



	Sub Watershed C in Percent
Water	2.38%
Forest	30.67%
Wetland	1.22%
Impervious	17.49%
Grass	17.02%
Agriculture	24.71%
Bare Earth	6.52%
Total Percent	100.00%



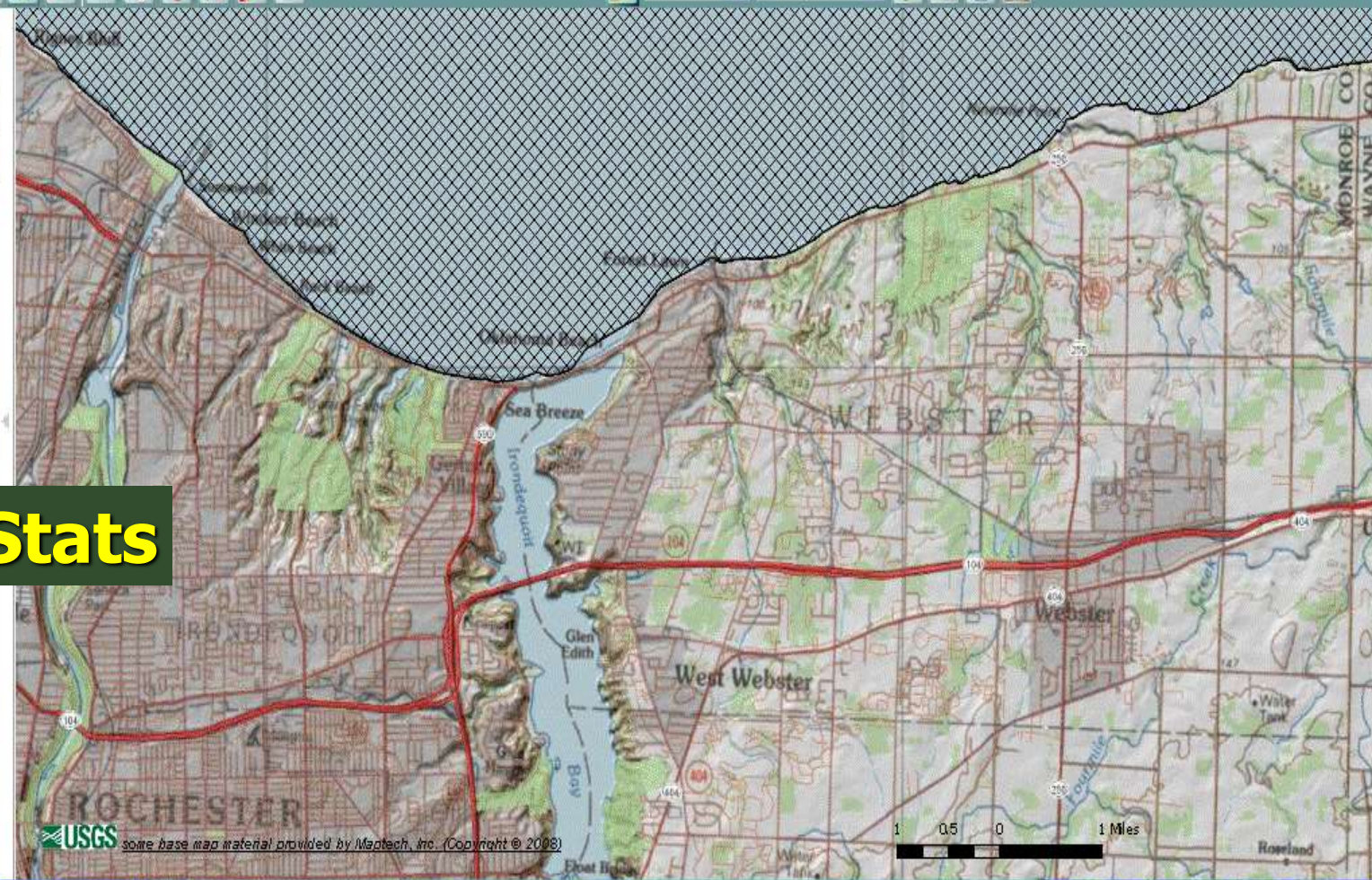
New York Streamstats



Zoom To: 1:80,000

- Results >>
- Map Contents >>
- Navigation >>
- Overview >>

StreamStats



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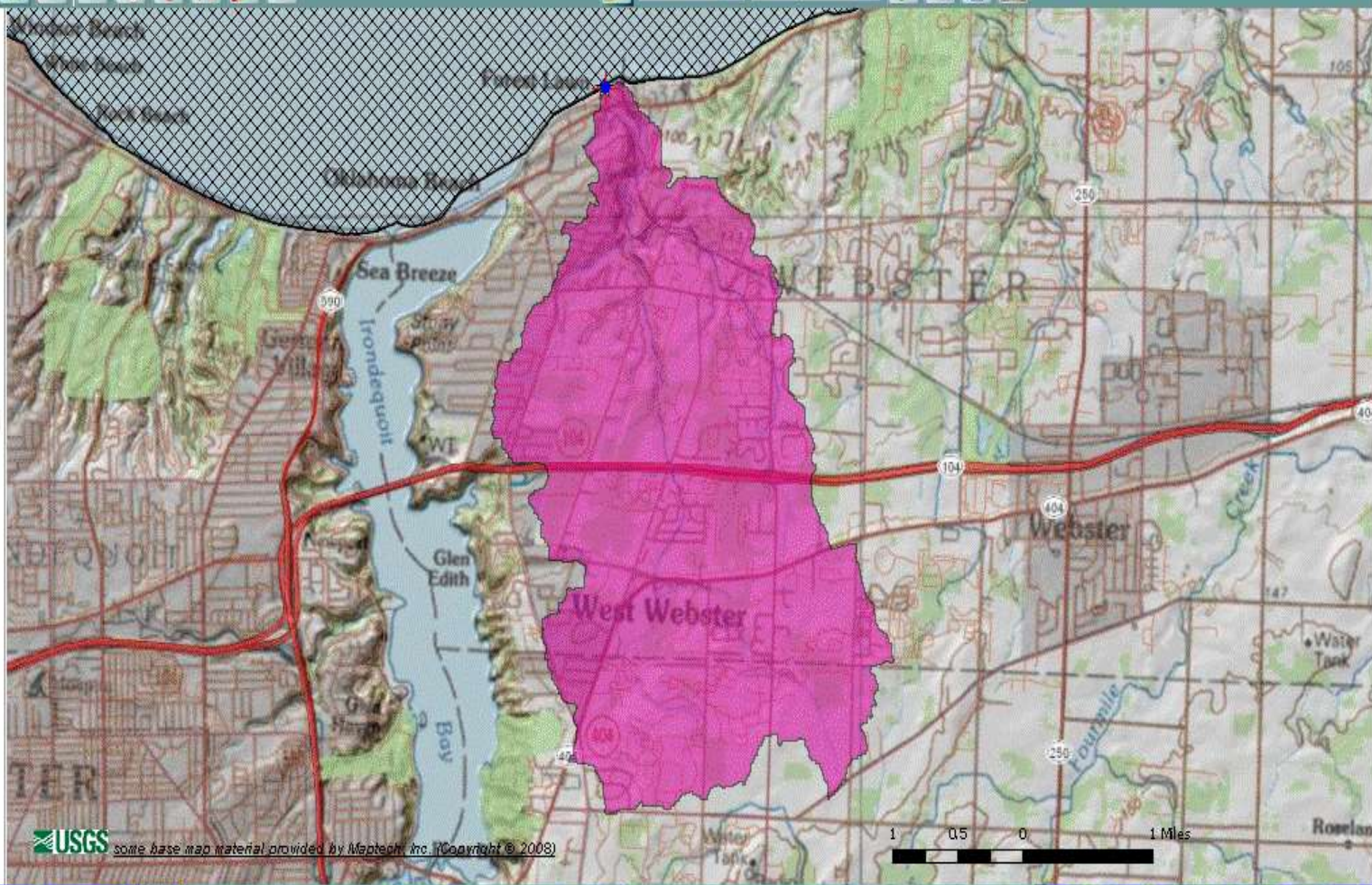


New York Streamstats



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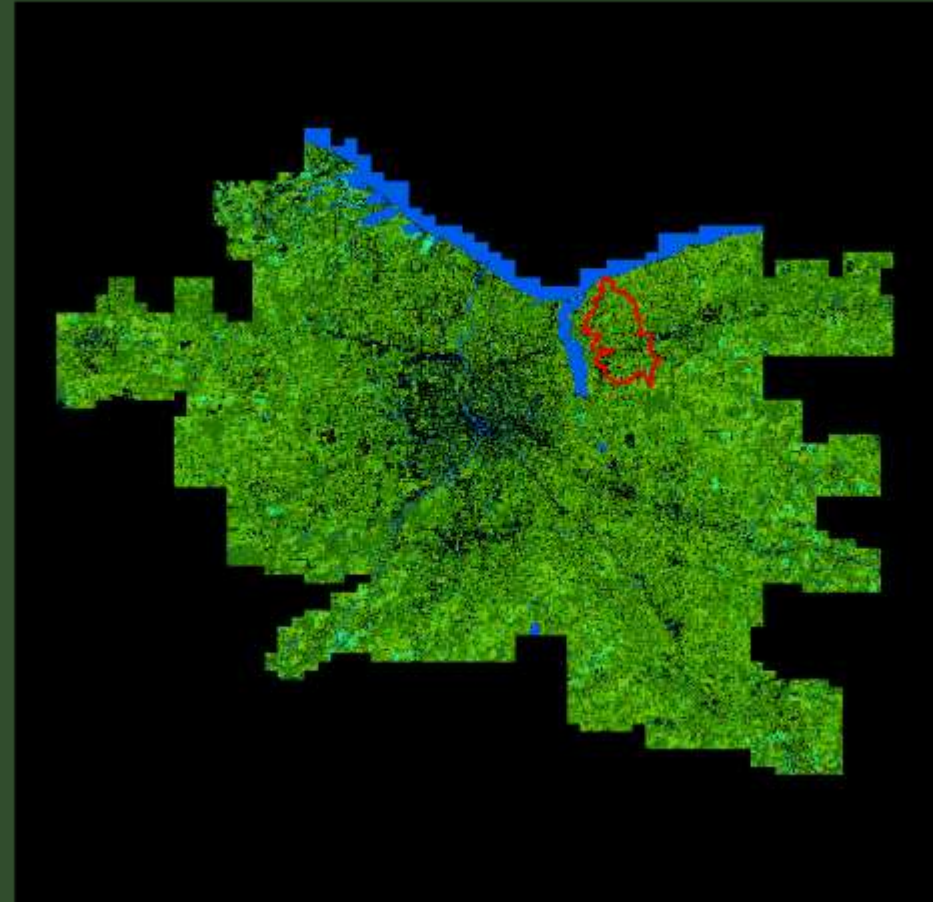
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Subwatershed Impervious Cover

- Was created in part from the 2005 Monroe County Land Cover Model
- The Model had a resolution of 12 feet per pixel
- The model was developed using a supervised classification

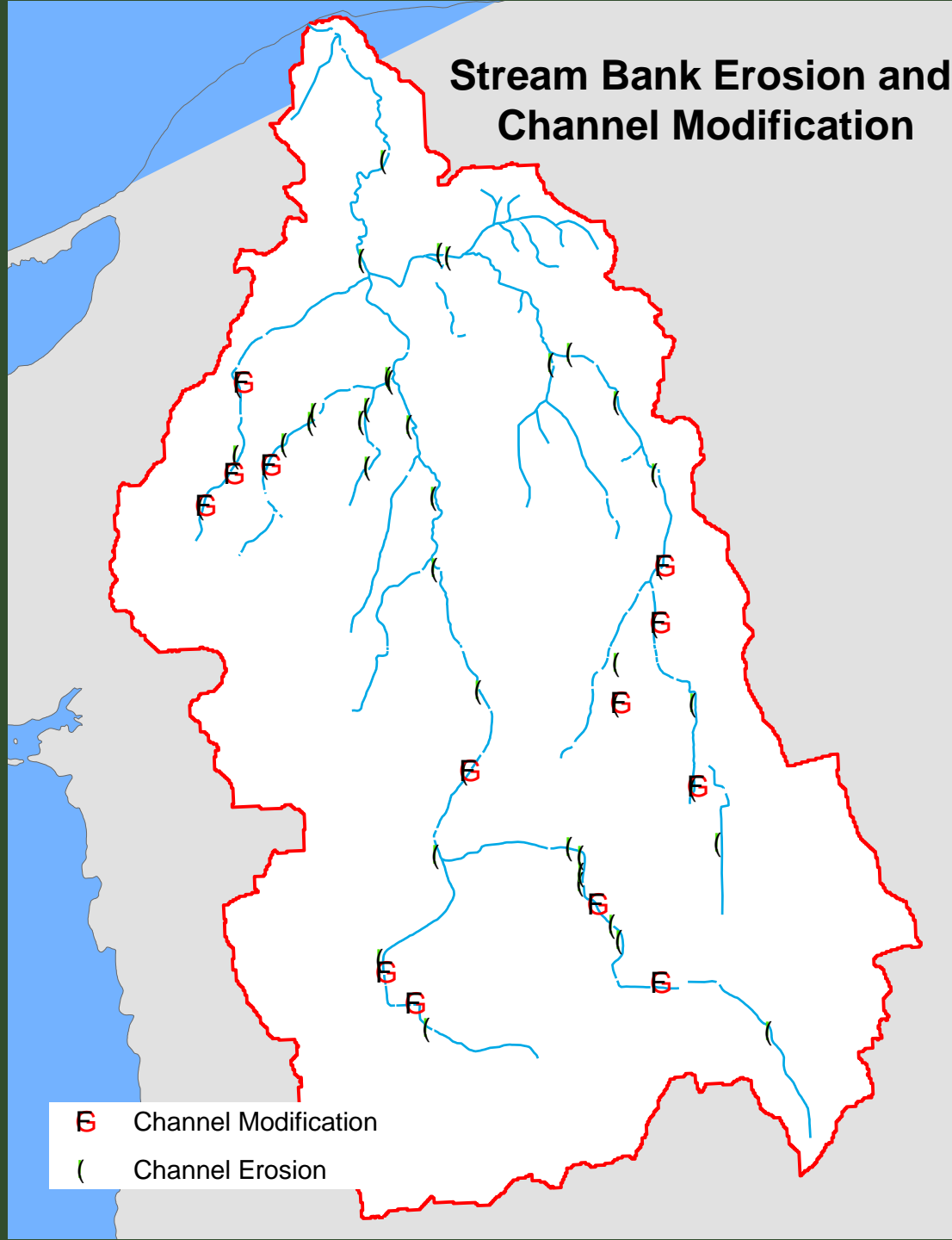


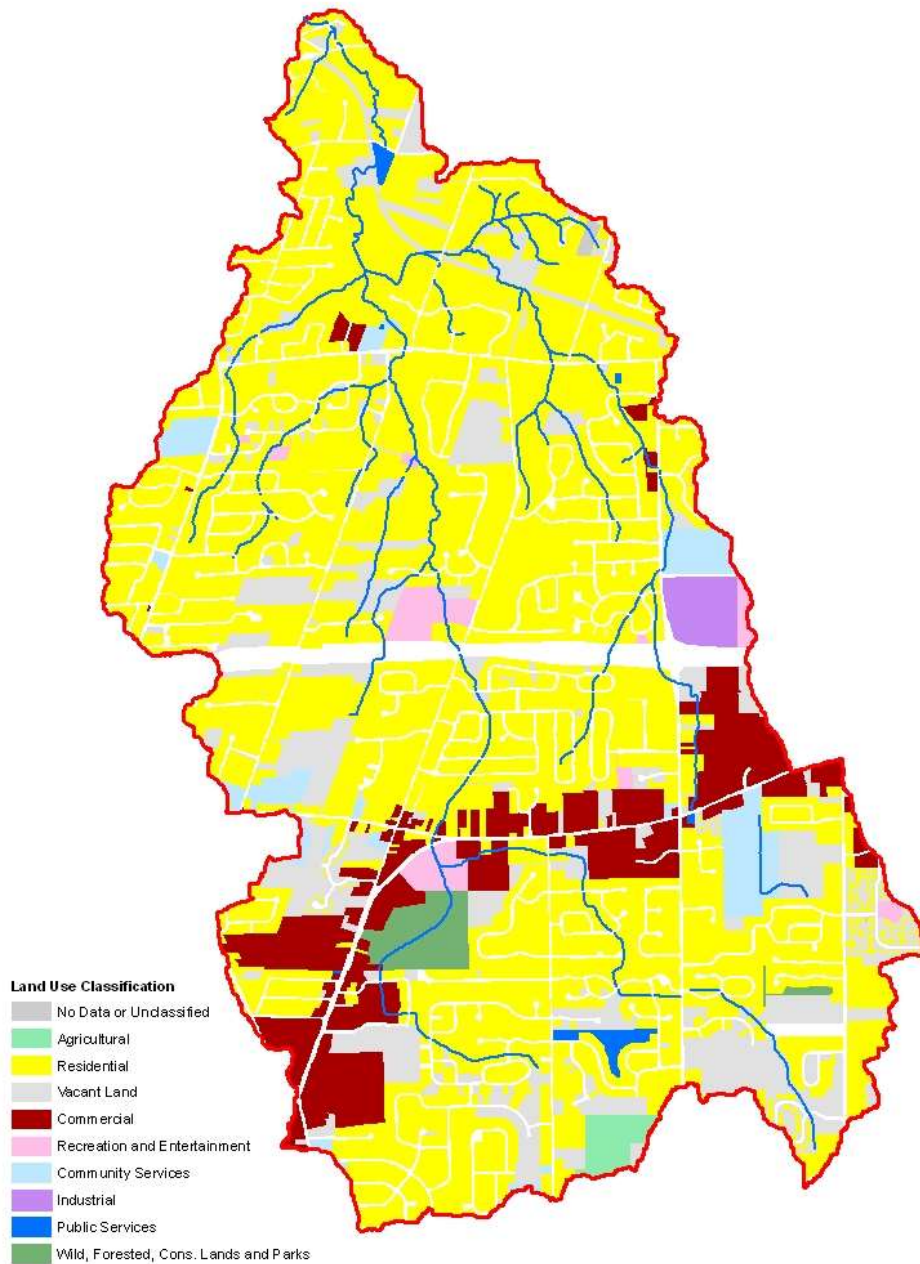
Stream Corridor Assessment

- **Walk the stream**
- **Collect data with GPS**
- **Identify erosion, impacted buffers, trash, channel modification**



Stream Bank Erosion and Channel Modification

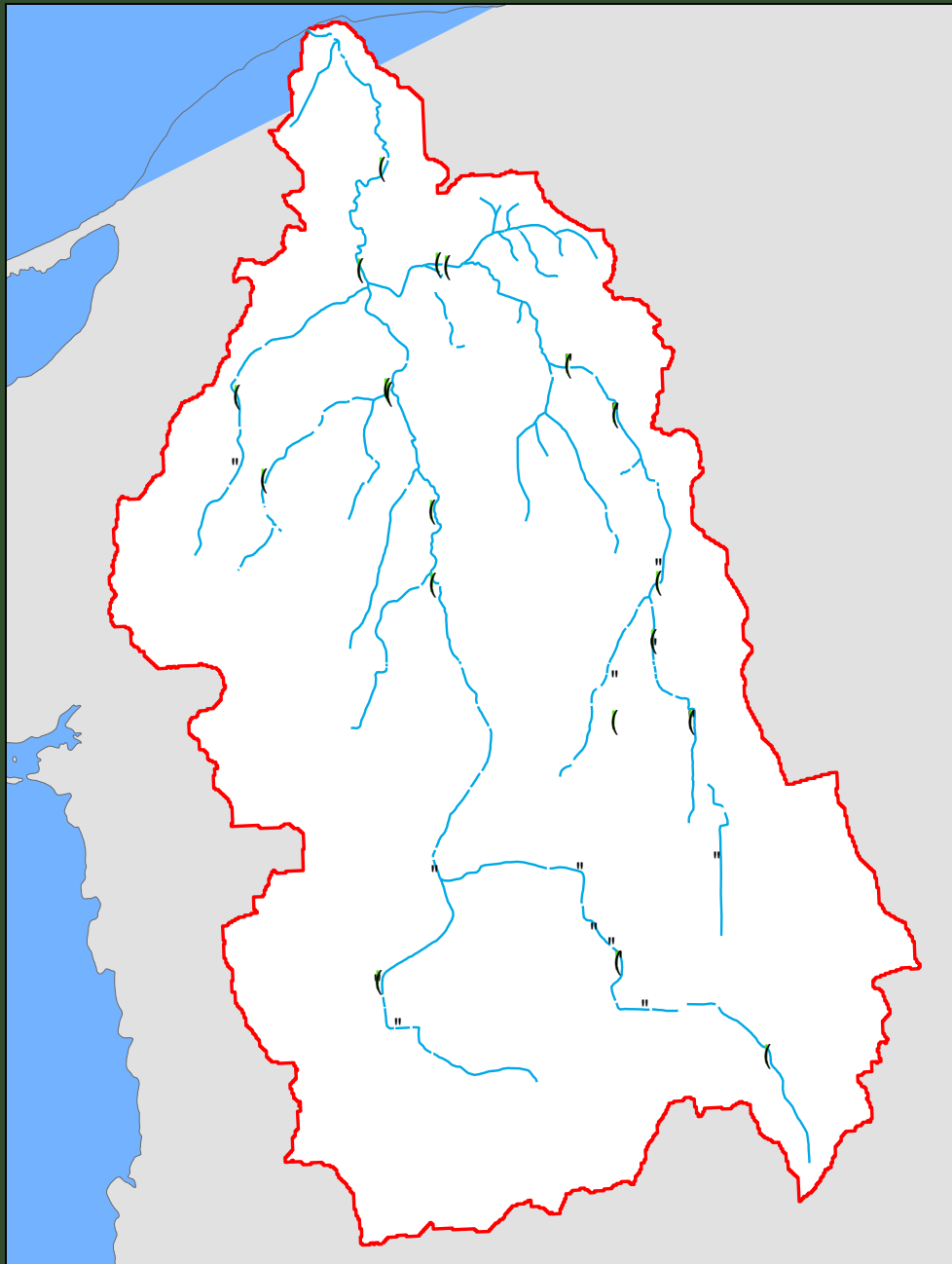




Watershed Land Use

- **Determined from Parcel records**
- **Linked to Impervious Cover**

Using Stream Impacts to Prioritize Retrofit Locations



Impacted Buffer



Stream Bank Erosion

Types and Numbers of Potential Restoration Projects in Shipbuilders Creek

- **Stormwater Pond Retrofit 55**
- **Discharge Prevention 3**
- **Stream Stabilization 15**
- **Riparian Reforestation 16**
- **Pollution Source Control 2**

Dry Basin Retrofit



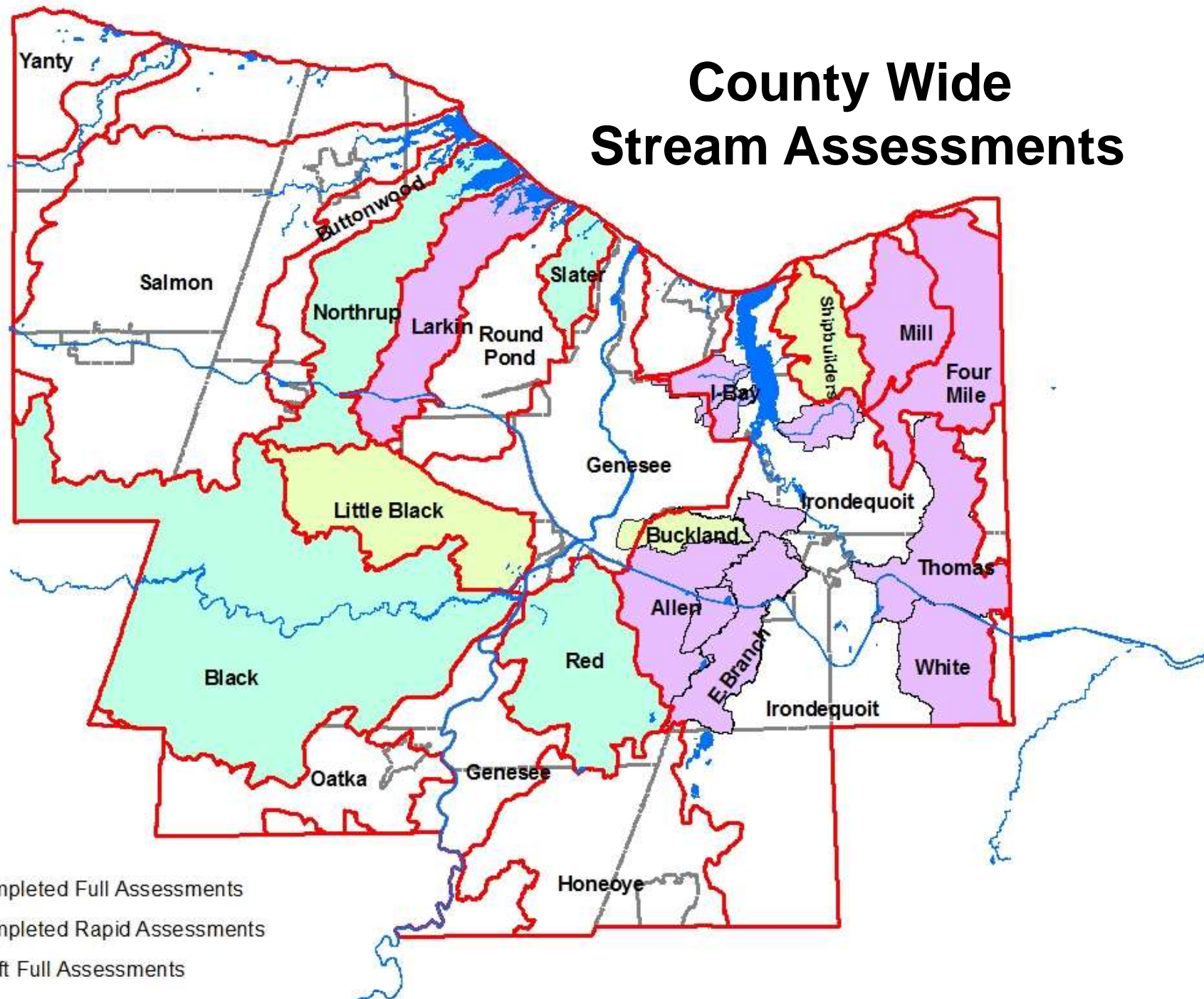
Disconnect Large Impervious Surfaces



Stream Channel Restoration



County Wide Stream Assessments



Lower Black Creek

Stormwater Assessment and Action Plan



Prepared by:

Monroe County Department of Environmental Services

December, 2014

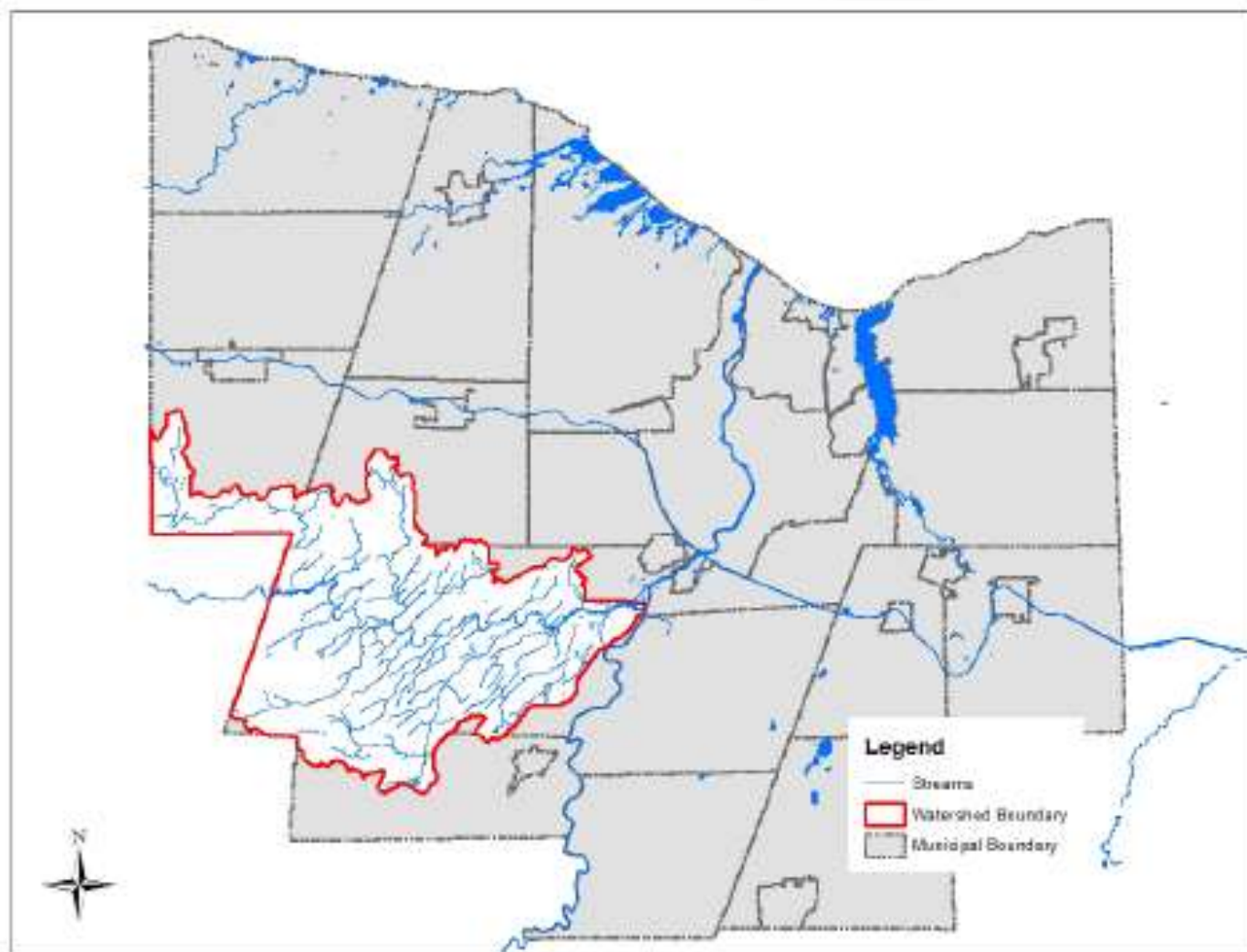


Figure 1: Map of the lower Black Creek watershed.

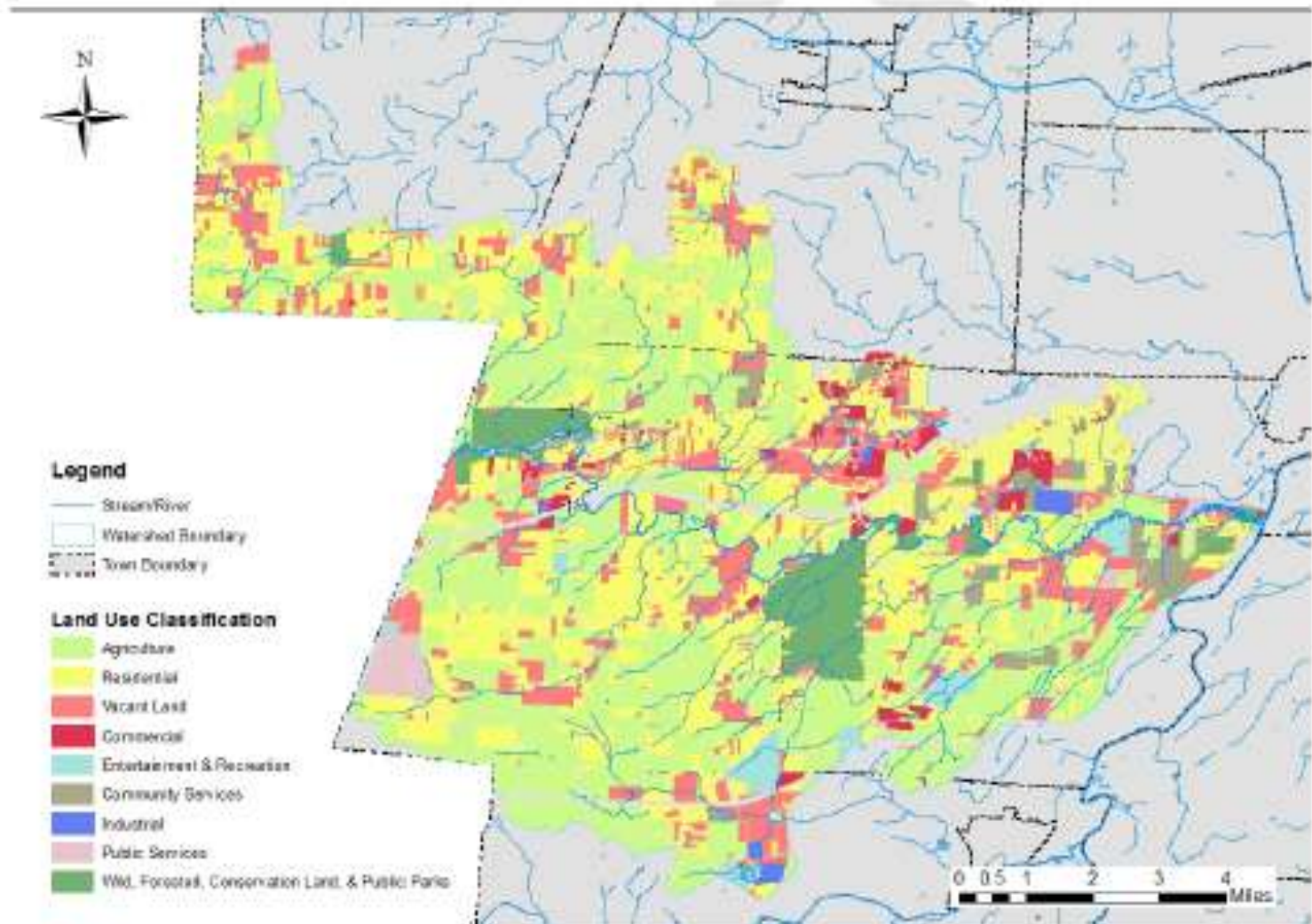


Figure 2: Land use classification within Lower Black Creek watershed.

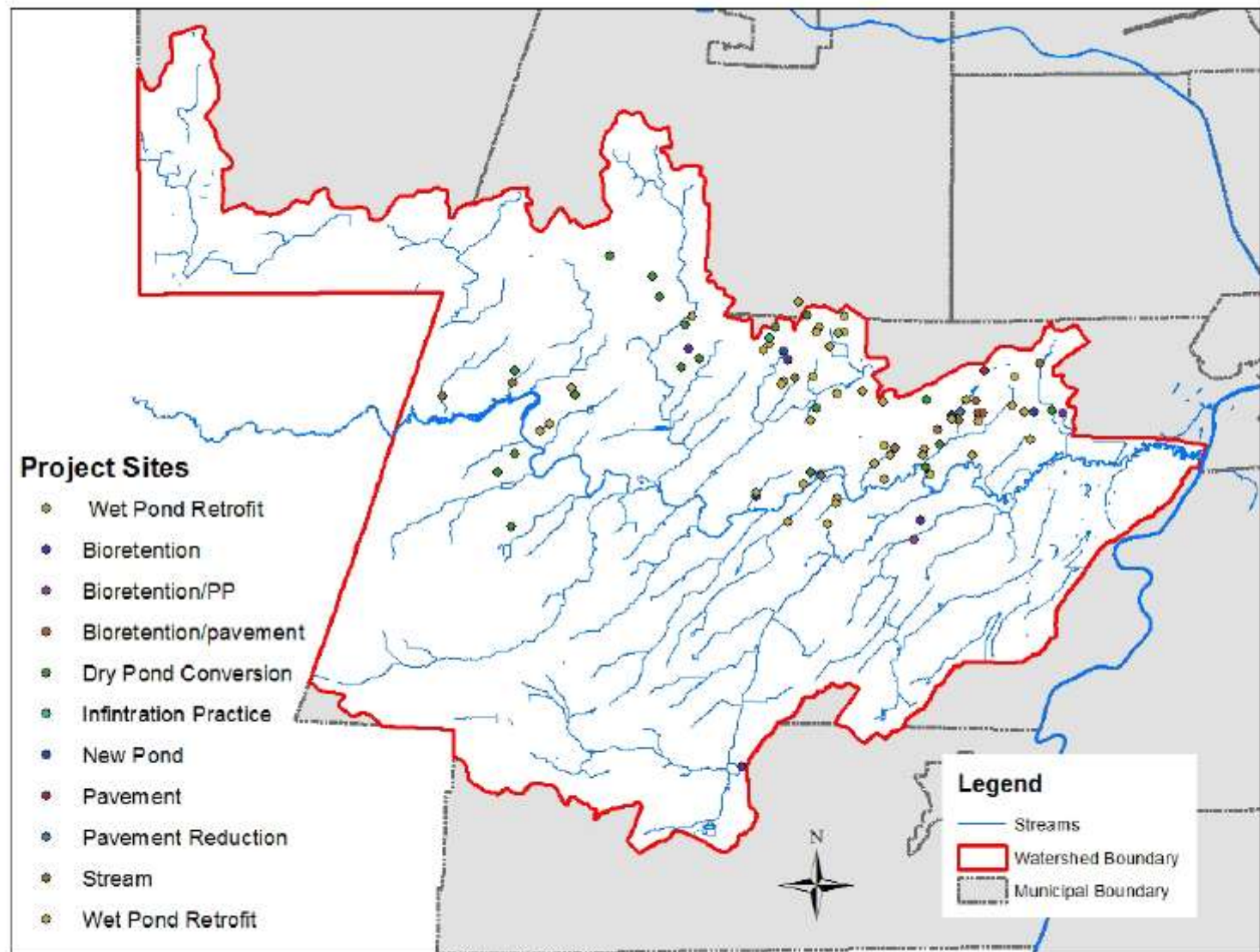


Figure 5: Potential projects sites in the Lower Black Creek Watershed.

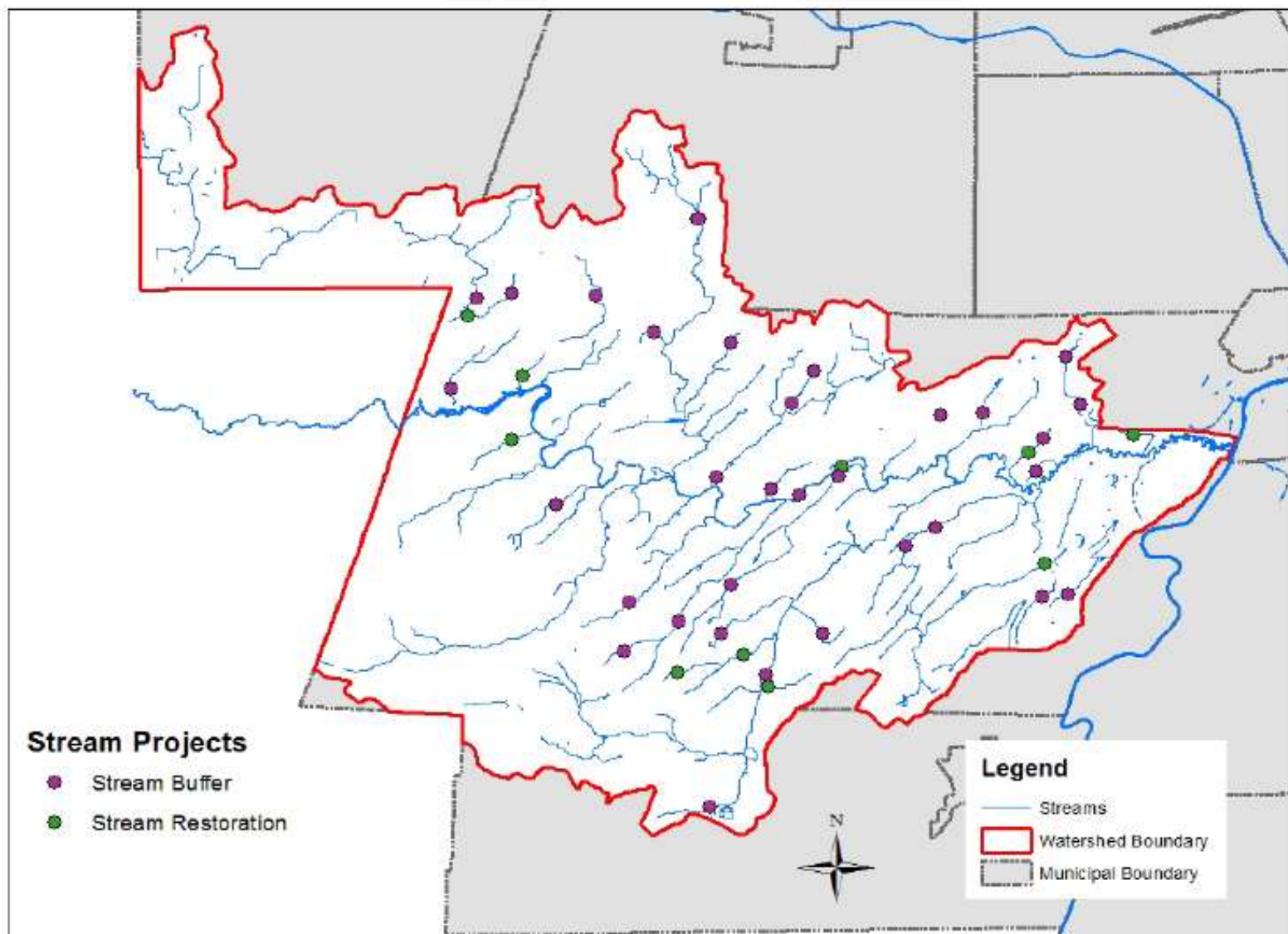


Figure 6: Potential stream projects sites in the Lower Black Creek Watershed.

Table 2: Black Creek Retrofit Ranking List

Project I.D.	Project Type	Project Location	Feasibility	Environmental Benefits	Cost Effectiveness	Score	Overall Rank
W40	Wet Pond Retrofit	3883 UNION ST	5	I, FS, WQ, CP, E	3	14	1
D1	Dry Pond Conversion	HUTTON CIR	5	I, FS, WQ, CP	3	13	2
D11	Dry Pond Conversion	3333 CHILI AVE	5	I, FS, WQ, CP	3	13	3
D2	Dry Pond Conversion	FAIRBANKS ROAD	4	I, FS, WQ, CP, E	3	13	4
W3	Wet Pond Retrofit	3461 WESTSIDE DR	4	I, FS, WQ, CP, E	3	13	5
W11	Wet Pond Retrofit	200 BEAVER ROAD	5	I, FS, WQ	3	12	6
D10	Dry Pond Conversion	6460 BUFFALO ROAD	5	I, FS, WQ	3	12	7
O8	Infiltration Practice	SLATE DR	5	I, FS, WQ	3	12	8
O15	Bioretention	3280 UNION ST	5	I, CR, WQ, E	2	12	9
D6	Dry Pond Conversion	571 PAUL ROAD	4	I, FS, WQ, E	3	12	10
D8	Dry Pond Conversion	137 & 139 FAIRBANKS ROAD	4	I, FS, WQ, E	3	12	11
D19	Dry Pond Conversion	836 SANFORD ROAD S	4	I, FS, WQ, E	3	12	12
O9	Bioretention	3939 CHILI AVE	5	I, CP, SC	2	11	13
D7	Dry Pond Conversion	5700 BUFFALO ROAD	4	I, FS, WQ, E	3	11	14
W13	Wet Pond Retrofit	24 WASHINGTON ST	4	I, FS, WQ	3	11	15
O14	Bioretention	5700 BUFFALO ROAD	4	I, WQ, E, SC	2	11	16
W16	Wet Pond Retrofit	30 BAKER ST	3	I, FS, WQ, CP	3	11	17
W20	Wet Pond Retrofit	2 BOON DR	3	I, FS, WQ, CP	3	11	18
D12	Dry Pond Conversion	2 BOON DR	3	I, FS, WQ, CP	3	11	19
W25	Wet Pond Retrofit	40 RIO GRANDE DR	3	I, FS, WQ, CP	3	11	20
W33	Wet Pond Retrofit	715 PAUL ROAD	3	I, FS, WQ, CP	3	11	21
O6	Bioretention	3310 UNION ST	4	I, WQ, SC	2	10	22
D4	Dry Pond Conversion	2 NELSON MORTON DR	3	I, FS, WQ	3	10	23

Implementation !

Thank You !

Andy Sansone
Monroe County
Environmental Services
asansone@monroecounty.gov
585-753-7684

