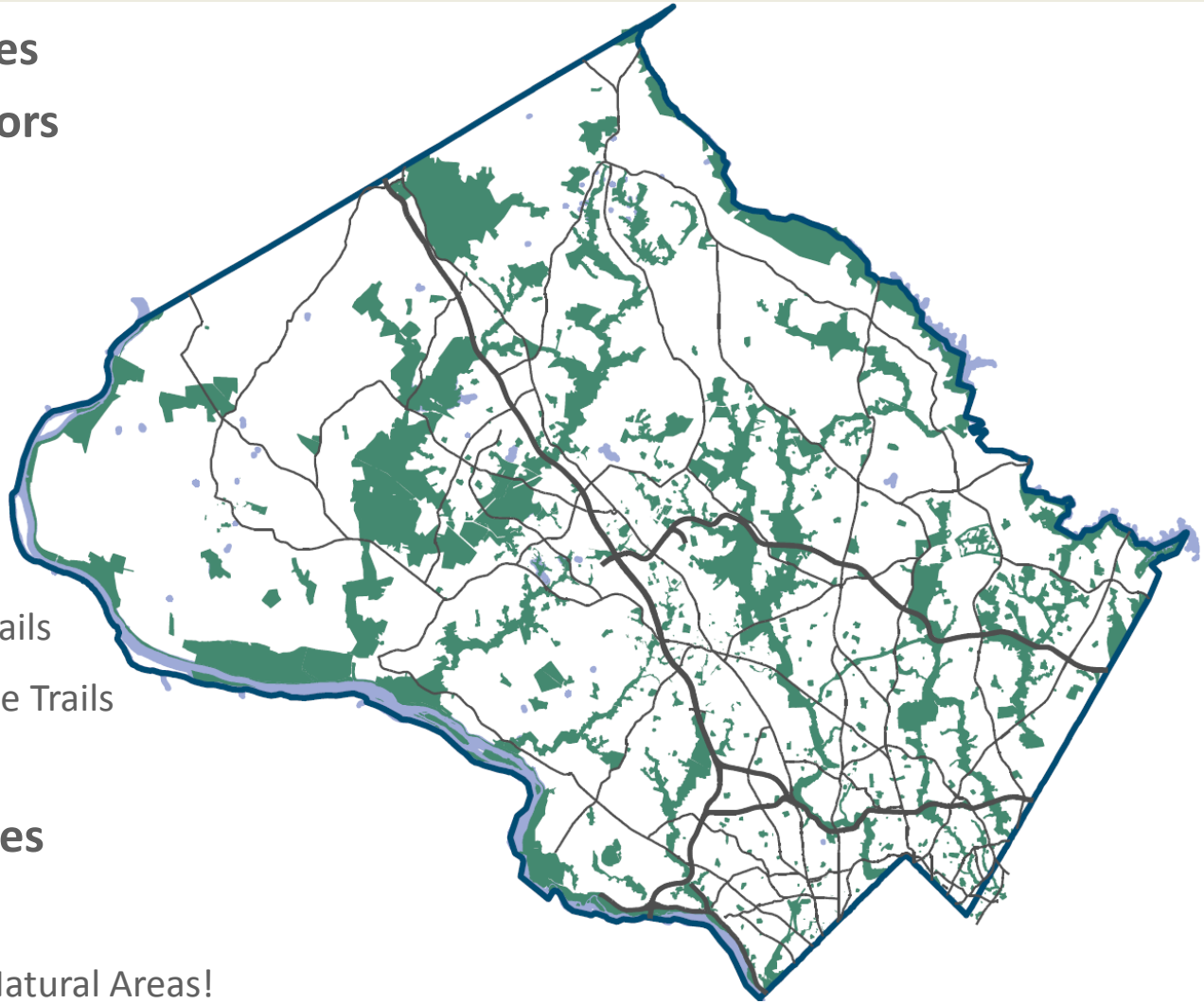
Montgomery County Department of Parks
2018 Monitoring Sites

M-NCPPC, Department of Parks, Montgomery County, MD
Streams Roundtable
February 23, 2017
Dave Sigrist, Senior Natural Resources Specialist
Park Planning and Stewardship Division

M-NCPPC Park System in Montgomery County, MD

- **421 Parks on 36,895 acres**
- **14,000,000 Annual Visitors**
- **7,189 Developed Acres**
  - 303 Athletic Fields
  - 219 Basketball Courts
  - 290 Playgrounds
  - 117 Historical Structures
  - 88 Picnic Shelters
  - 77 Miles of Hard Surface Trails
  - 162 Miles of Natural Surface Trails
- **28,706 Natural Area Acres**



Over ¾ of our Parks System is Natural Areas!

What We Do

Biological Monitoring:

- Benthic Macroinvertebrate Sampling in Spring (March thru April).
- Return to same sites in Summer for electrofishing (June thru September).
- Coordinate site selection with Montgomery County Department of Environmental Protection (MCDEP) to prevent overlap.

What We Do

Biological Monitoring:

- Benthic Macroinvertebrate Data in the Spring Index Period.
- Fish Data in the Summer Index Period.
- Herpetological Data during both Index Periods.

What We Do

Also collected during both Index Periods:

- Habitat Data (Instream Cover, Epifaunal Substrate, Embeddedness, Bank Stability, etc.)
- Physical Chemistry Data (temp, DO, conductivity, pH)

What We Do

Similarities to MBSS:

- Collect data during same Spring & Summer Index Periods.
- Same collection protocols for Macroinvertebrates & Fish.
- Maintain MBSS Certifications for Benthic Sampling, Fish Crew Leader & Fish Taxonomy.

Maryland Biological Stream Survey

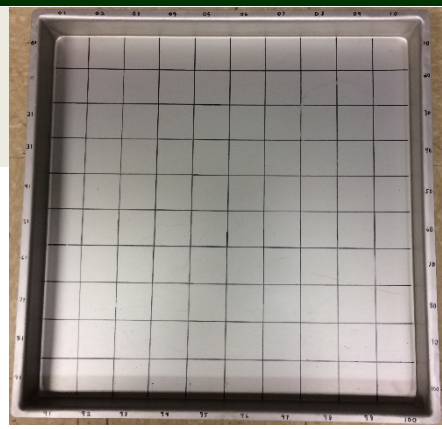
Registry of Certifications

The applicants listed below passed the Fish Taxonomy Practical administered during summer training, provided photo vouchers or specimens identified during the appropriate sample year, and successfully completed a Fish Taxonomy Field Audit. This certification lasts for one year.

Applicants Certified as MBSS Fish Taxonomists
(*Certification valid for one year*)

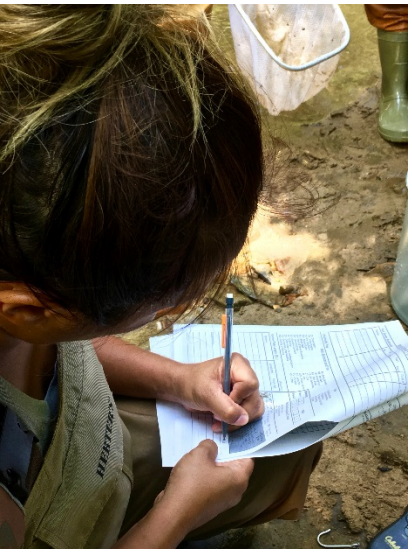
First Name	Last Name	Email Address	Affiliation	Date Certified
Matt	Harper	matthew.harper@montgomeryparks.org	MNCPPC	2017
Eric	Naibert	eric.naibert@montgomerycountymd.gov	Montgomery County DEP	2017
Ken	Mack	kenny.mack@montgomerycountymd.gov	Montgomery County DEP	2017
Ryan	Corbin	rcorbin@versar.com	Versar, Inc.	2017
Sean	Sipple	seans@coastal-resources.net	Coastal Resources, Inc.	2017
Adam	Webb	adamw@coastal-resources.net	Coastal Resources, Inc.	2017
Karl	Hellman	khellmann@rkk.com	RK& K Engineers	2017
Andrew	Becker	andrew.becker@kci.com	KCI Technologies	2017
Martha	McCauley	mmccauley@eaest.com	EA Engineering, Science, and Technology, Inc.	2017
Wesley	Schmidt	wschmidt@baltimorecountymd.gov	Baltimore County EPS	2017
Jeff	Gring	jeffg@coastal-resources.net	Coastal Resources, Inc.	2017

What We Do



Differences from MBSS:

- Record information on data sheets developed by MCDEP.
- Use matrix developed by MCDEP to calculate IBI's.
- Macroinvertebrate Subsampling is done with a 20" x 20" subsampling grid (100 2" squares).
- Chironomidae larvae identified to tribe instead of genus.



Index of Biological Integrity, Macroinvertebrates

Scoring Criteria for Silt Loam Region, 1st & 2nd Order Streams

Metric	Results	Scoring Criteria[a] 5	3	1	IBI Score
Taxa Richness	22	> 20	10 - 20	< 10	5
Biotic Index	3.9	< 4.0	4.0 - 6.9	> 6.9	5
SCR : FC + SCR	71%	> 20%	10% - 20%	< 10%	5
HYD : EPT	20%	< 12%	12% - 36%	> 36%	3
%DOM	23%	< 34%	34% - 67%	> 67%	5
EPTI	10	> 10	6 - 10	< 6	3
%EPTI	70%	> 54%	27% - 54%	< 27%	5
SHR : T	27%	> 4%	2% - 4%	< 2%	5
		Total IBI SCORE			**36** **Excellent**

Taxa Richness	Total number of taxa
Biotic Index	Expresses the relative abundance of tolerant species in a sample (see formula below)
SCR : FC + SCR	Ratio of scrapers to filtering collectors & scrapers
HYD : EPT	Ratio of Hydropsychid individuals to total number of EPT individuals
%DOM	Ratio of taxa with the highest number of individuals to total number of individuals
EPTI	Total number of Ephemeroptera, Plecoptera & Trichoptera taxa
%EPTI	Ratio of EPT individuals to total number of individuals
SHR : T	Ratio of Shredder individuals to total number of individuals

Biotic Index (HBI) Formula

$$HBI = \Sigma \left[\left(\frac{\text{number of individuals in taxa}}{\text{total number of individuals}} \right) X \left(\frac{\text{tolerance}}{\text{value}} \right) \right]$$

(a) Scoring Criteria based on 1995 and 1996 reference streams.

Total IBI Score	Rating
36 - 40	Excellent
27 - 35	Good
17 - 26	Fair
8 - 16	Poor

Montgomery Parks 2018
Proposed Monitoring Sites

Watershed	Site	Purpose	
Great Seneca Creek	GSCB205	Pre-Construction Data: MDOT Stream Restoration Site	
Great Seneca Creek	GSLS202	SoccerPlex Long Term Study	
Little Seneca Creek	LSHM101a	SoccerPlex Long Term Study	
Little Seneca Creek	LSHM101b	SoccerPlex Long Term Study	
Northwest Branch	NWNW407c	Pre-Construction Data: Parks Stream Restoration Site	
Northwest Branch	NWNW421	Anacostia Study (MWCOG)	
Northwest Branch	**NWNW422a**	Anacostia Study (MWCOG)	**New Site**
Northwest Branch	NWRS101a	Pre-Construction Data: Potential Stream Restoration Site	
Northwest Branch	NWRS101b	Pre-Construction Data: Potential Stream Restoration Site	
Paint Branch	PBPB308	Post-Construction Data: Parks Stream Restoration site	
Paint Branch	PBUT201	Post-Construction Data: Parks Stream Restoration site	
Rock Run	RORO102	Biodiversity Area Biological Survey / Post-Sediment Spill	
Rock Run	RORO202	Biodiversity Area Biological Survey / Post-Sediment Spill	
Rock Run	RORO203	Biodiversity Area Biological Survey / Post-Sediment Spill	
Sligo Creek	SCSC314	Anacostia Study (MWCOG)	
Sligo Creek	**SCUT103a**	Pre-Construction Data: Parks Stream Restoration Site	**New Site**
Upper Rock Creek	URCB101a	Pre-Construction Data: Potential Stream Restoration Site	
Upper Rock Creek	URCB101b	Pre-Construction Data: Potential Stream Restoration Site	
Upper Rock Creek	URCB101c	Pre-Construction Data: Potential Stream Restoration Site	
TBA	TBA	Set aside for M-NCPPC Department of Planning	
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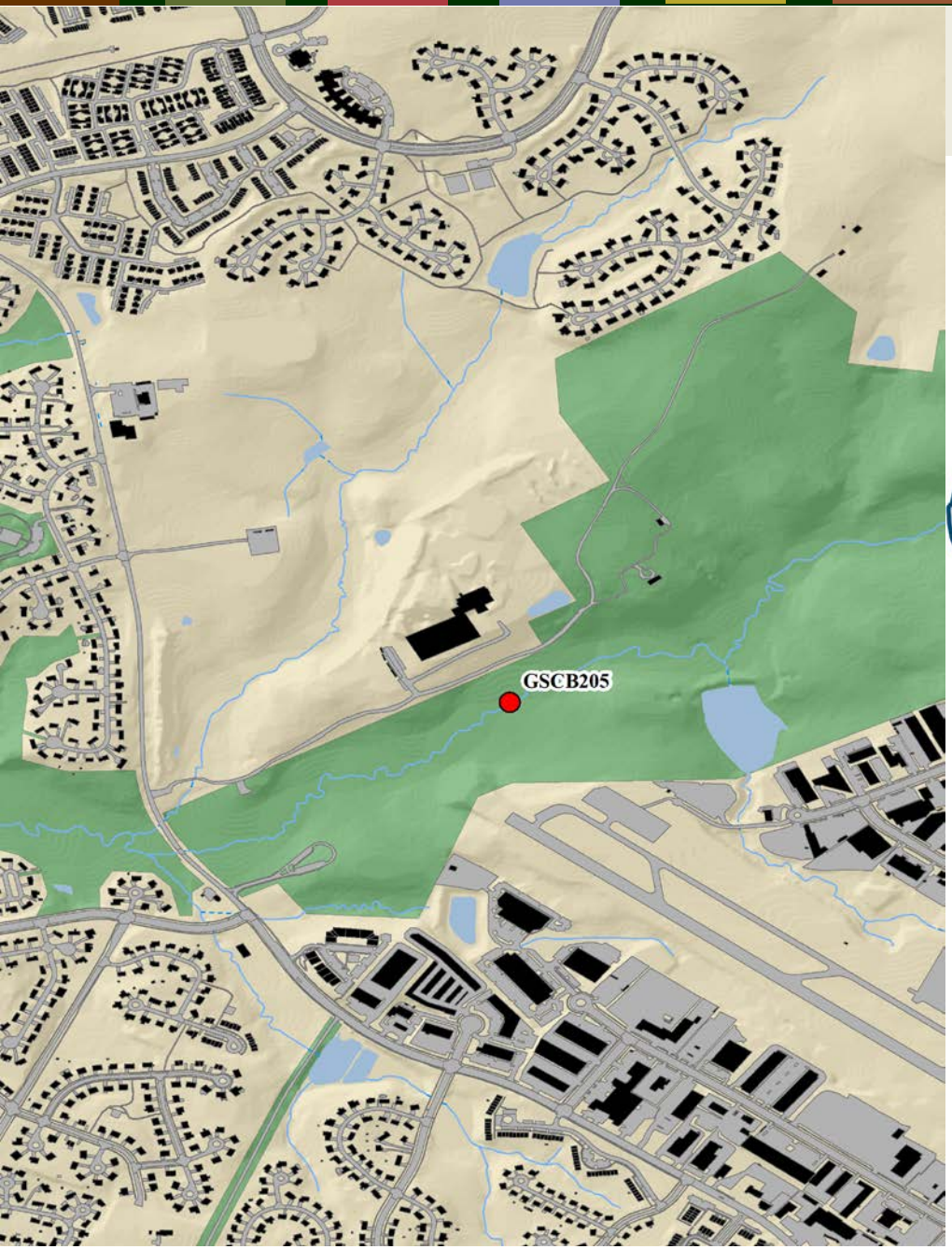
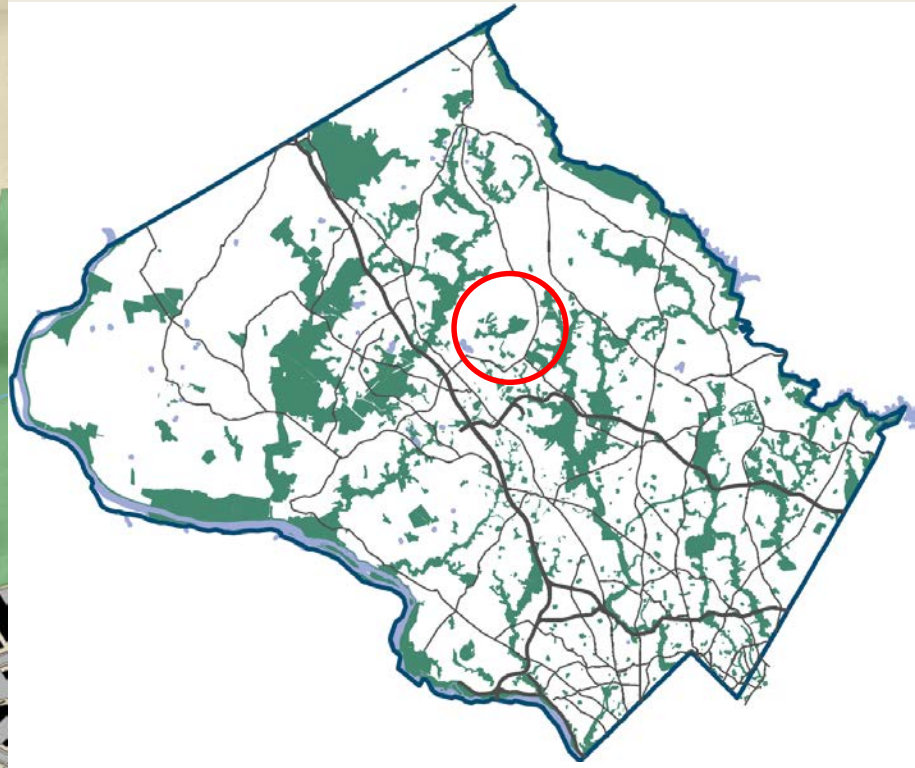
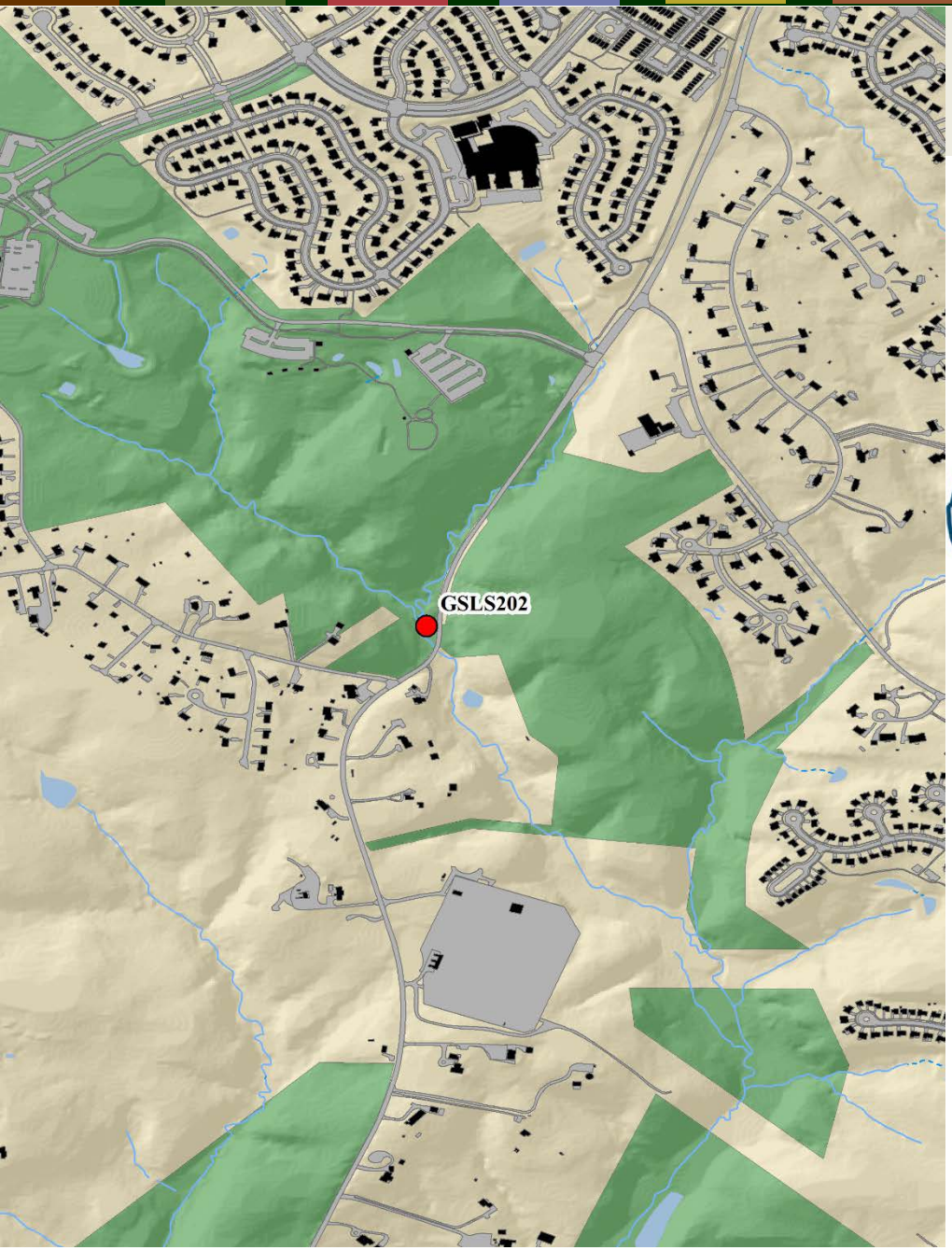
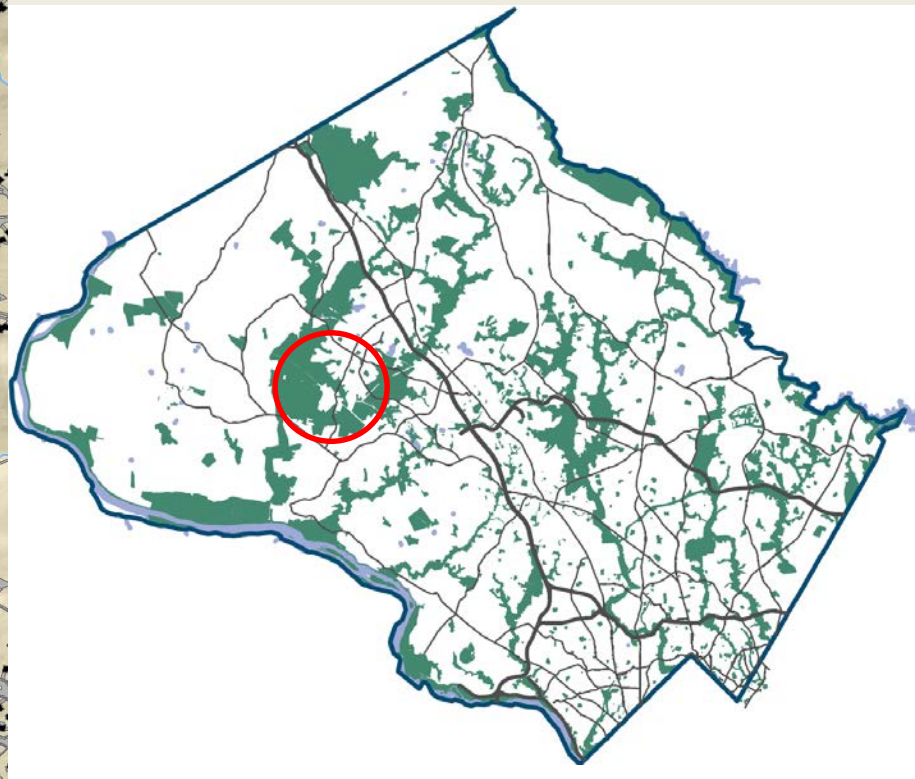
Great Seneca Creek



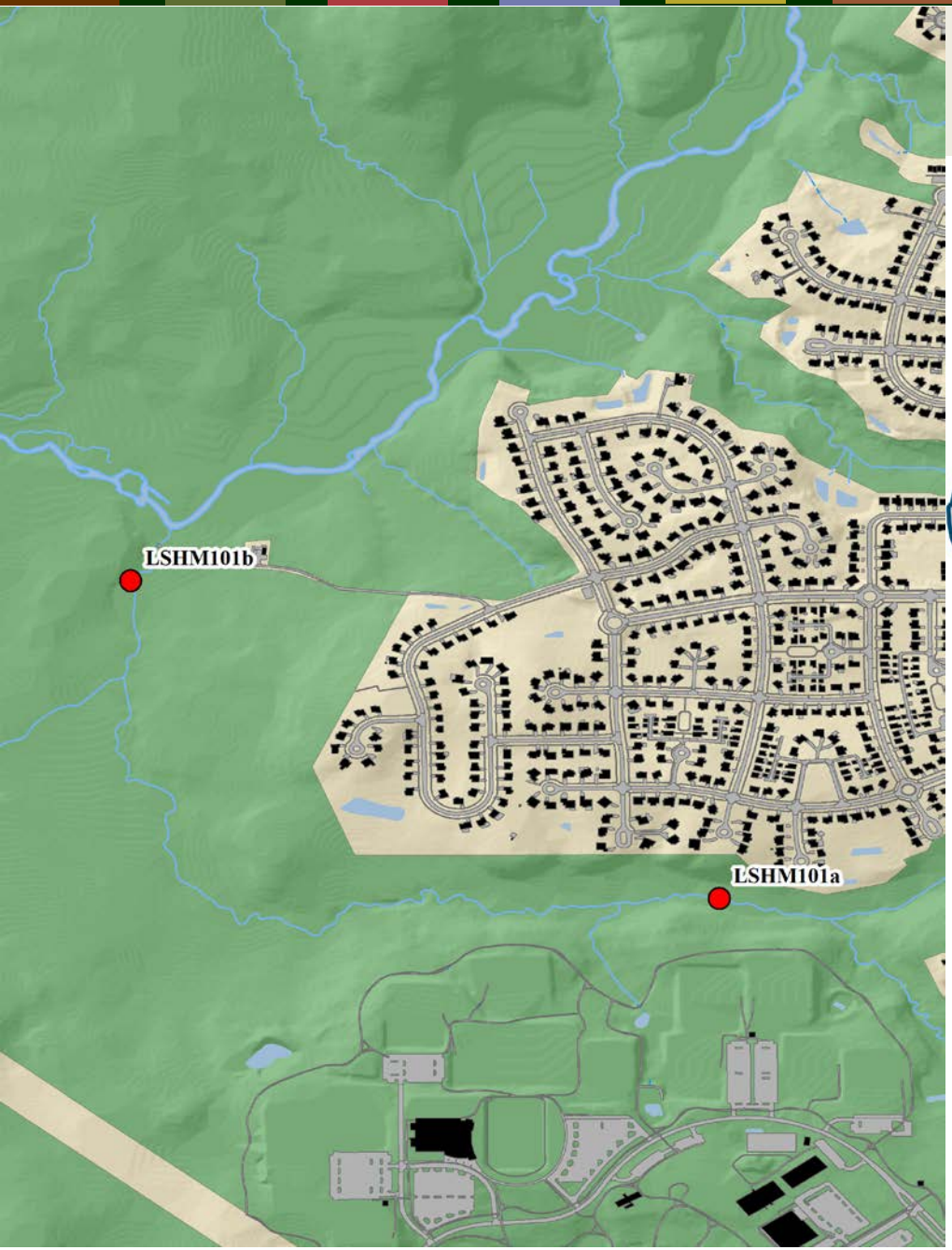


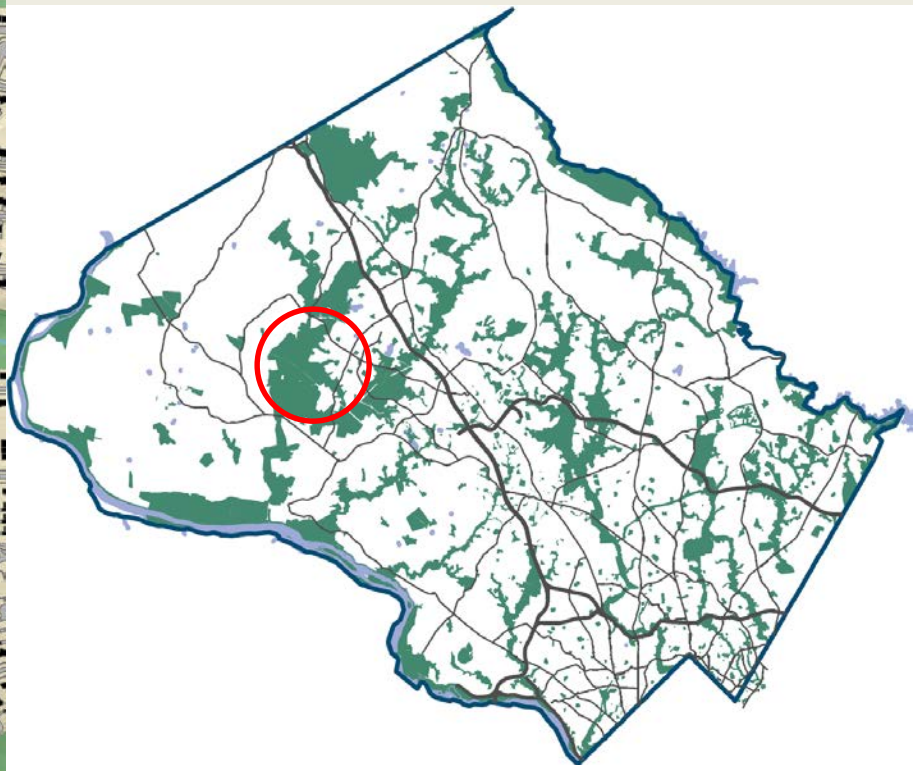
Great Seneca Creek



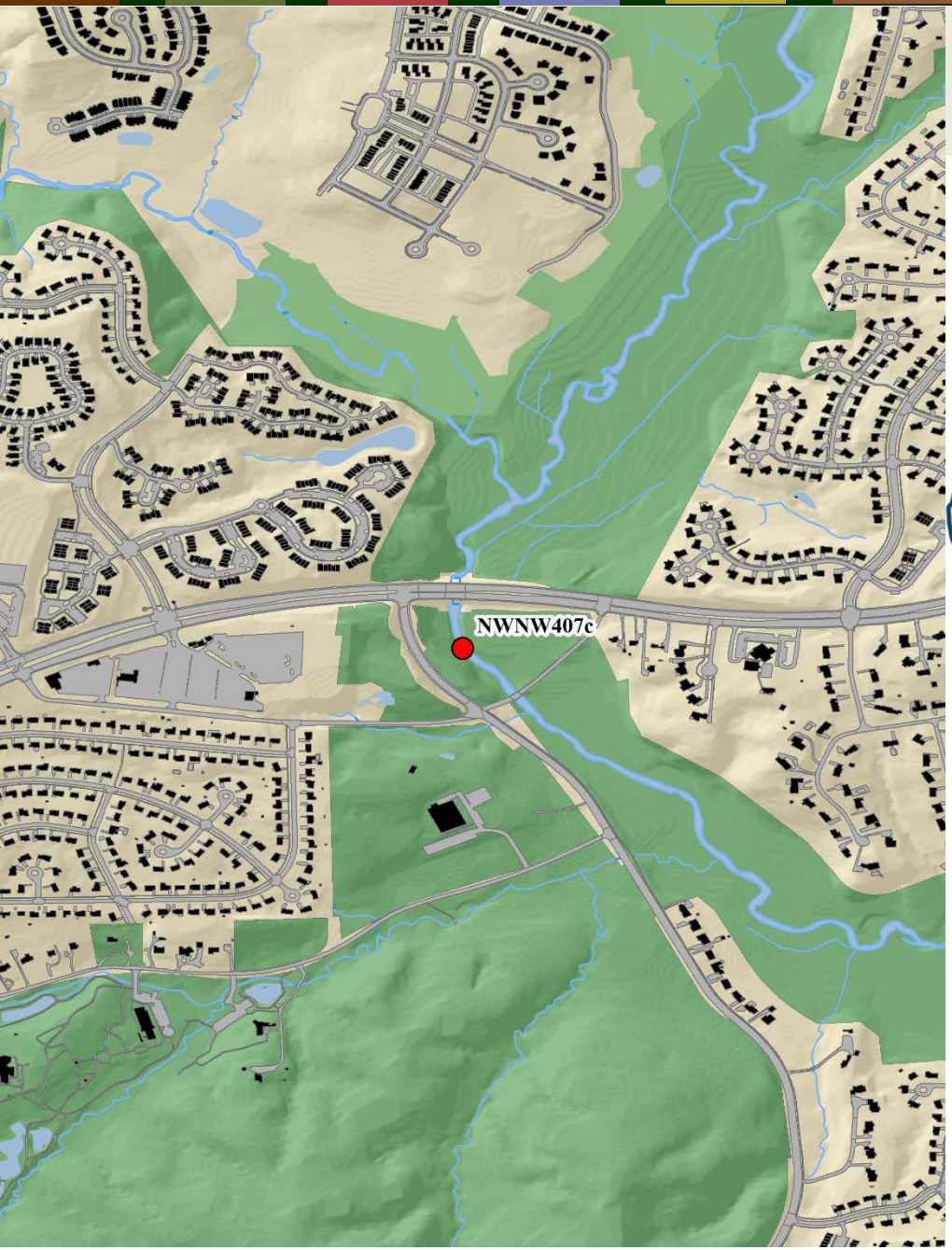


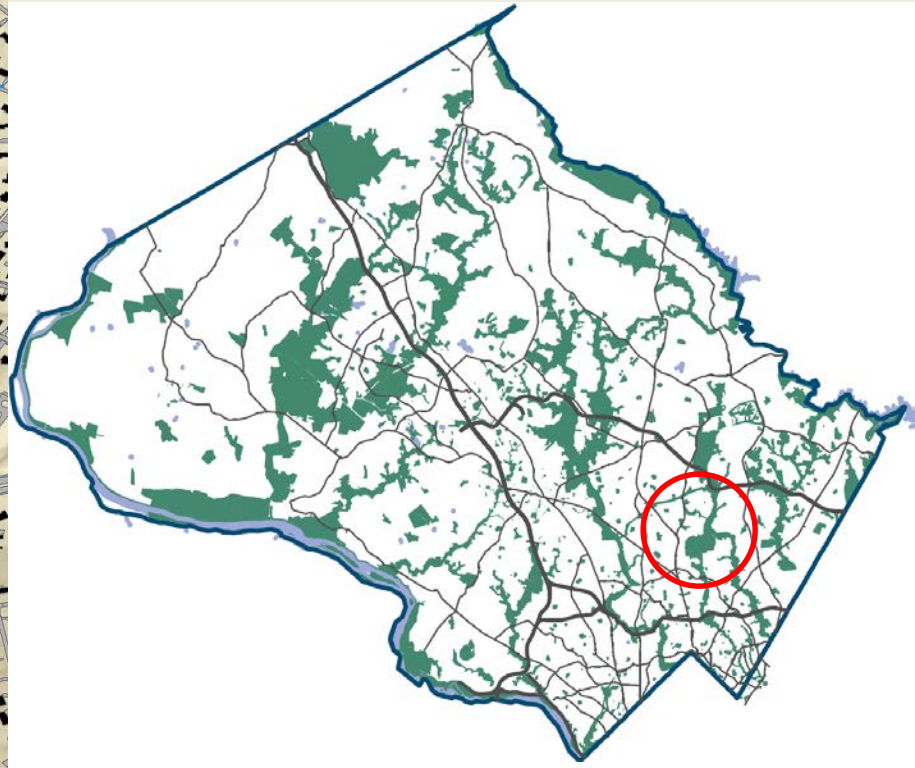
Little Seneca Creek





Northwest Branch





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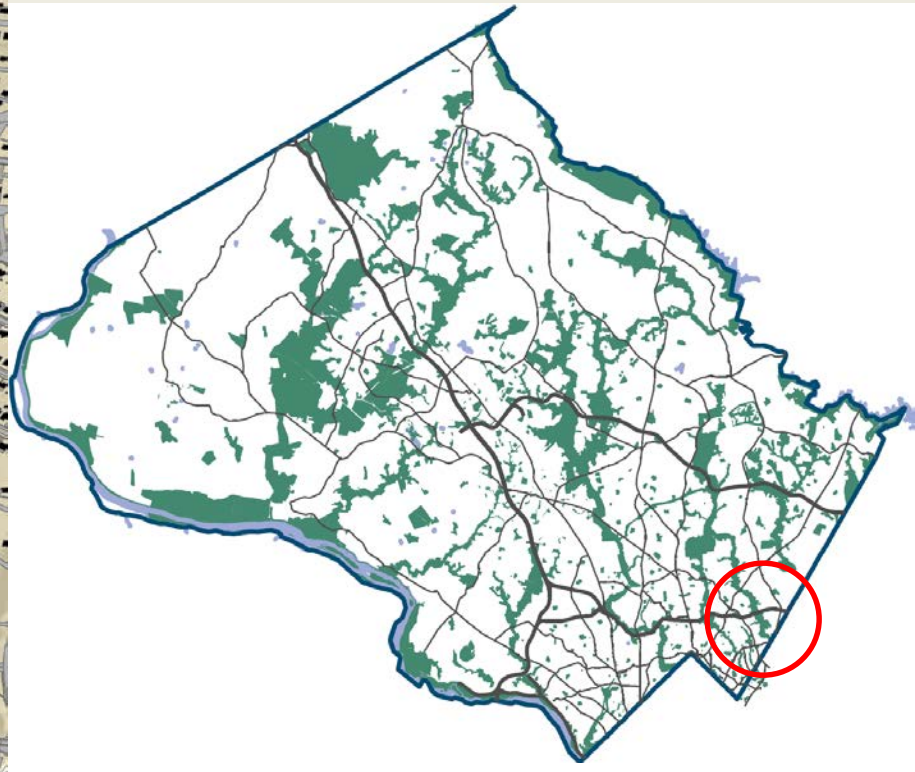

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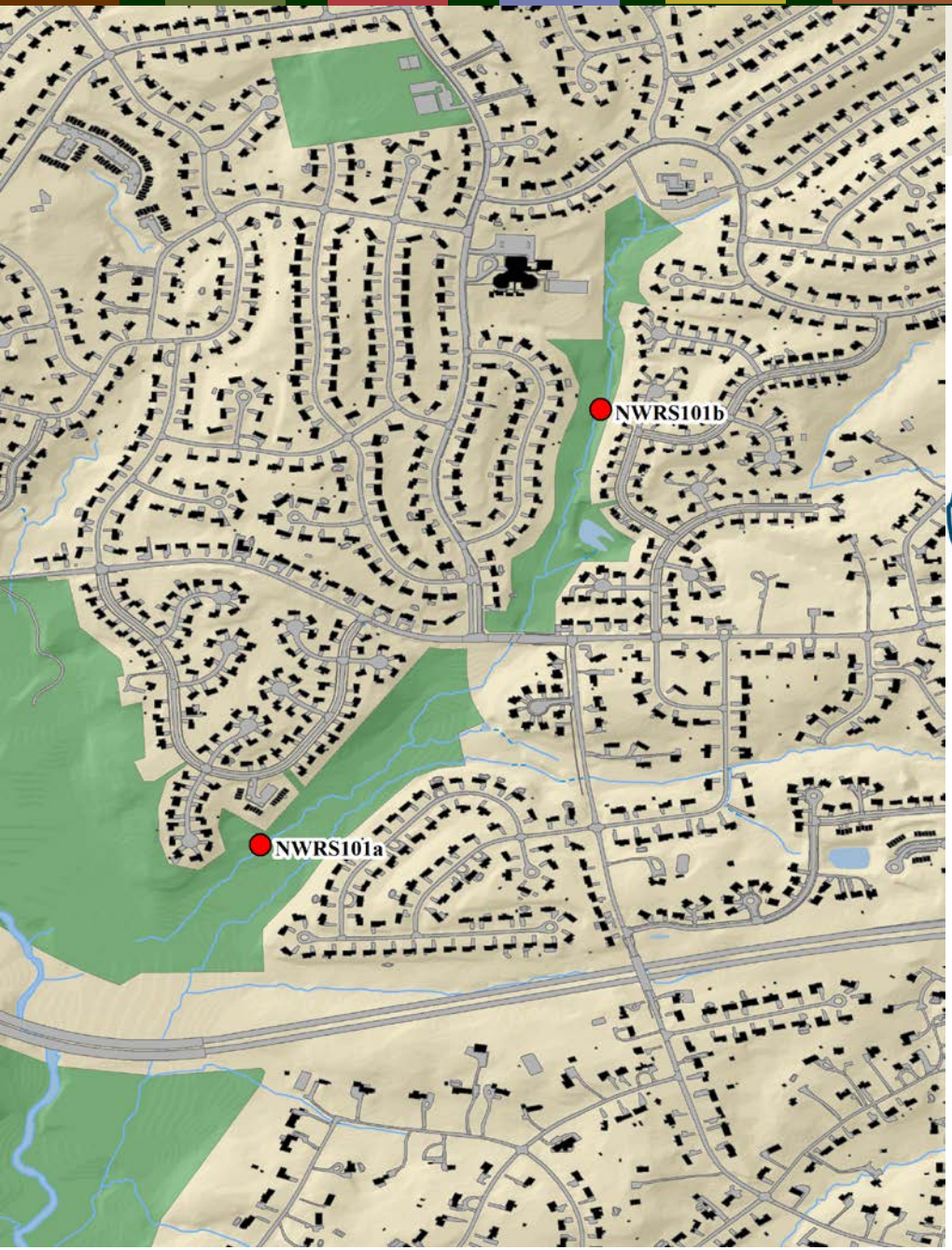
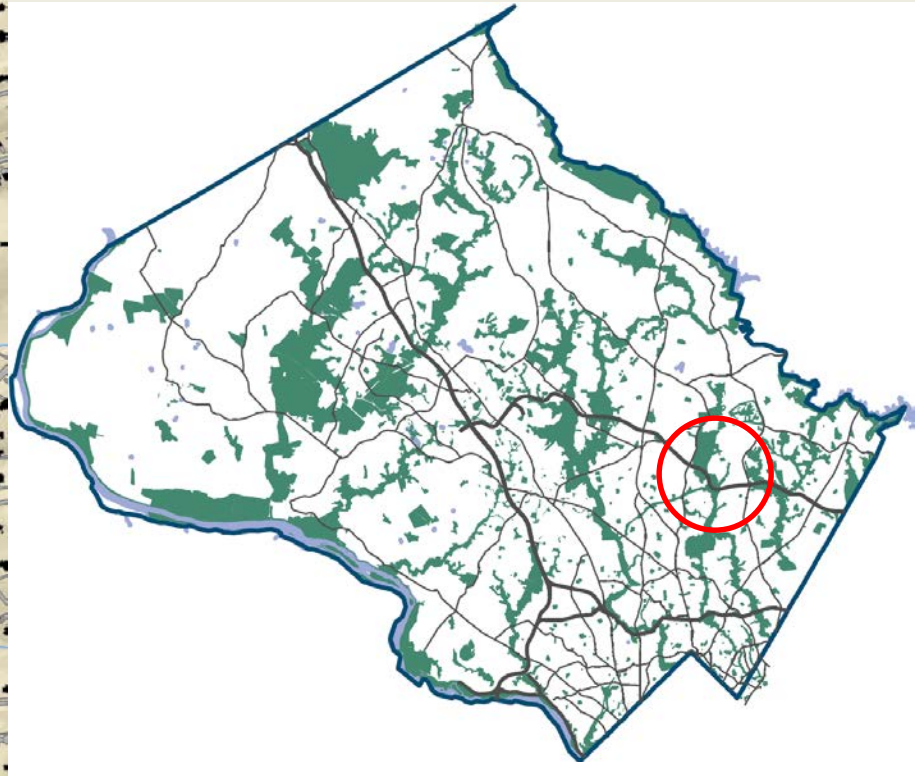
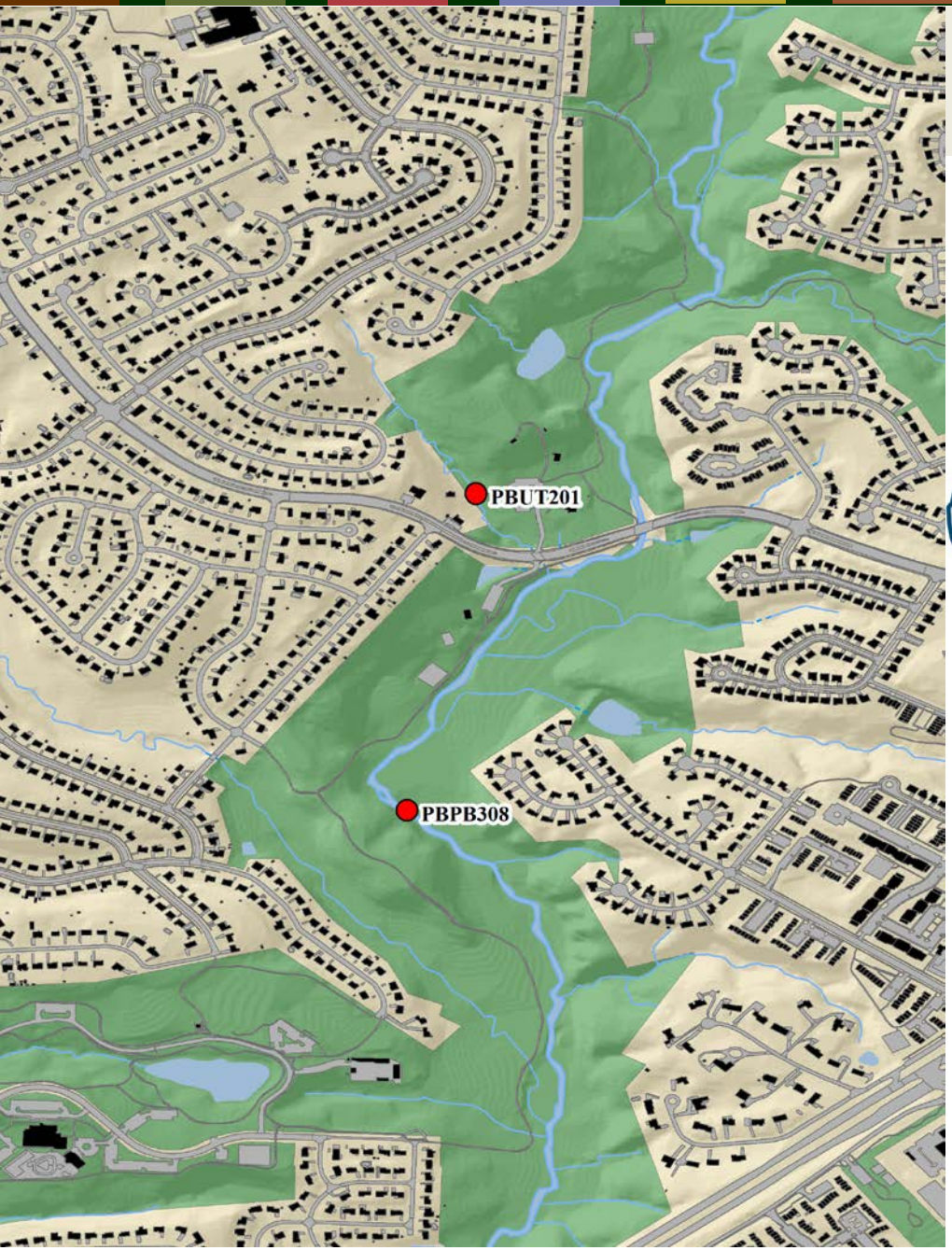
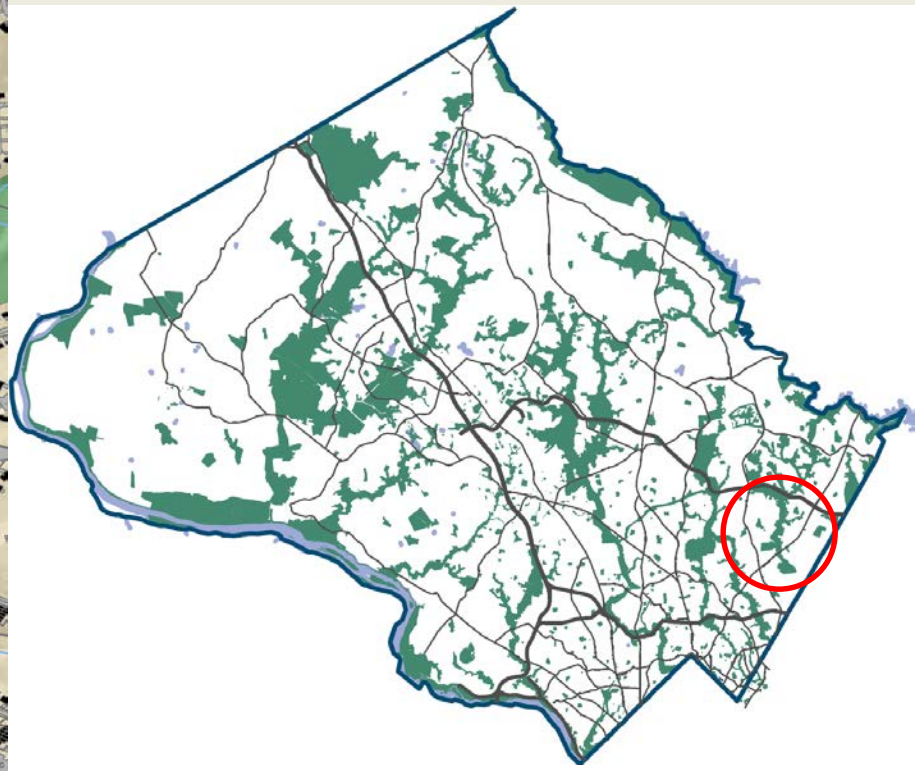


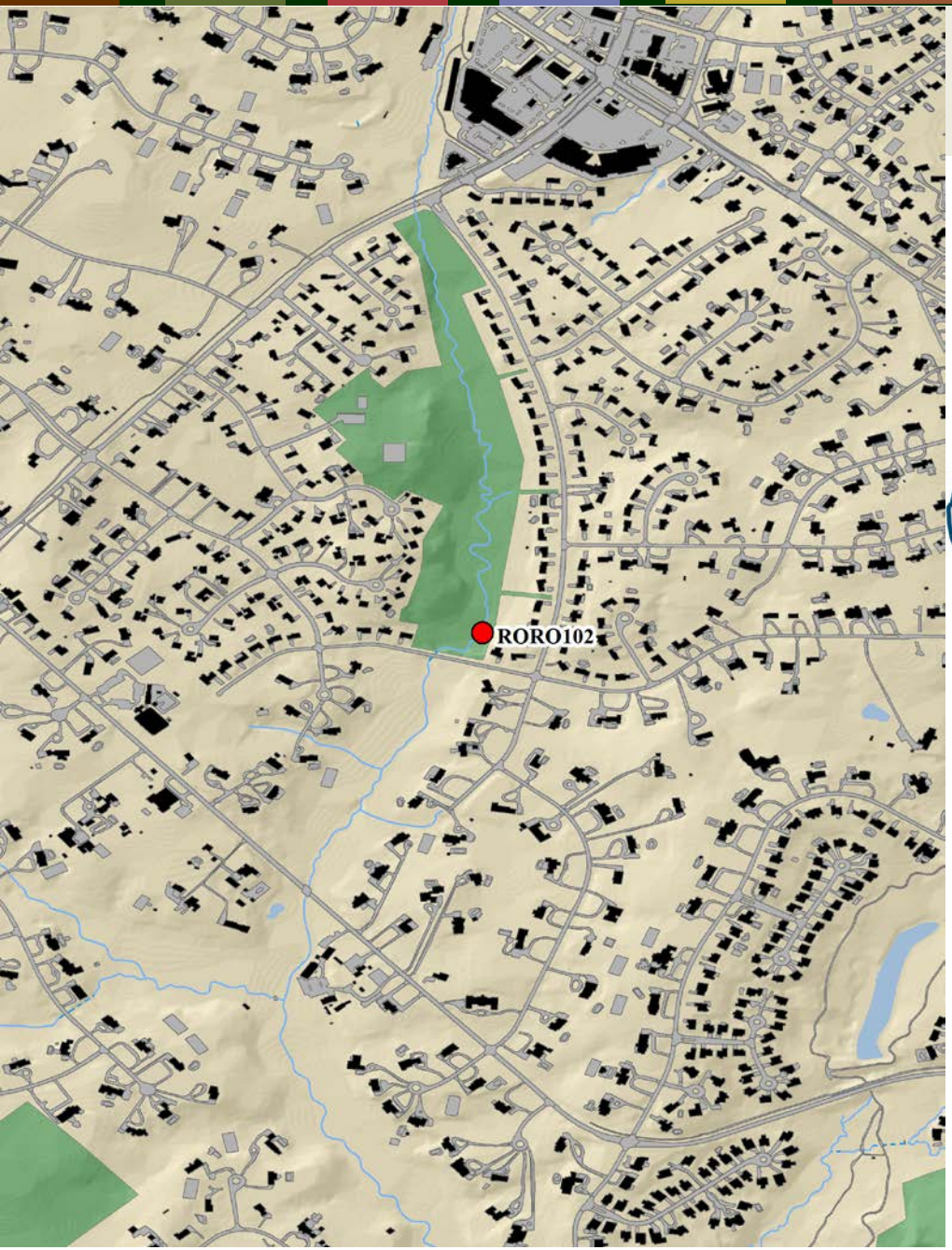


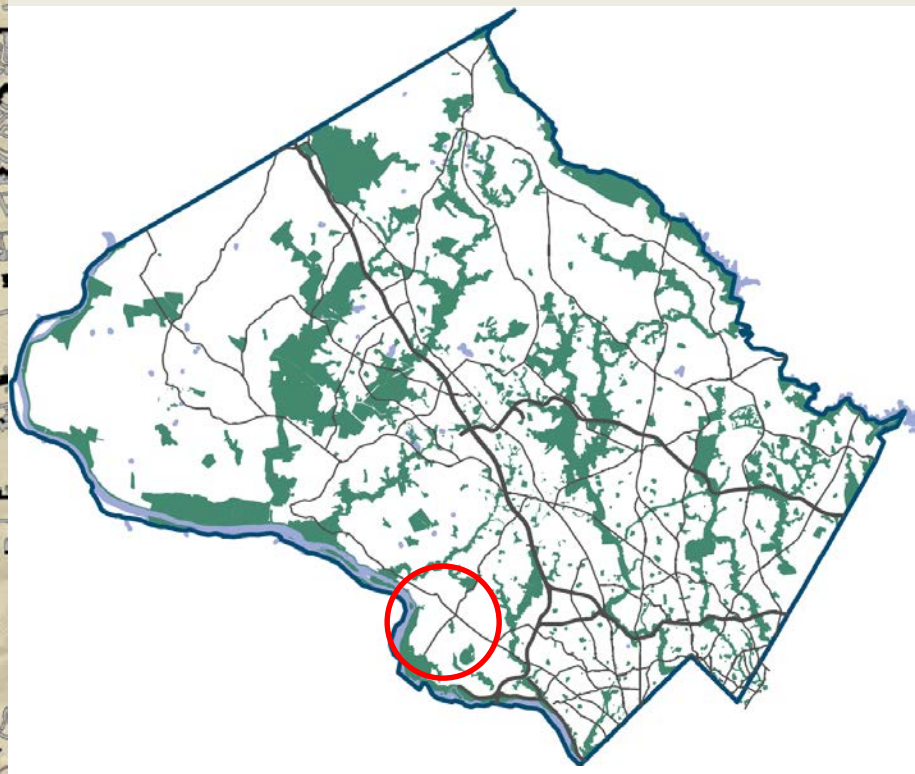
Paint Branch





Rock Run





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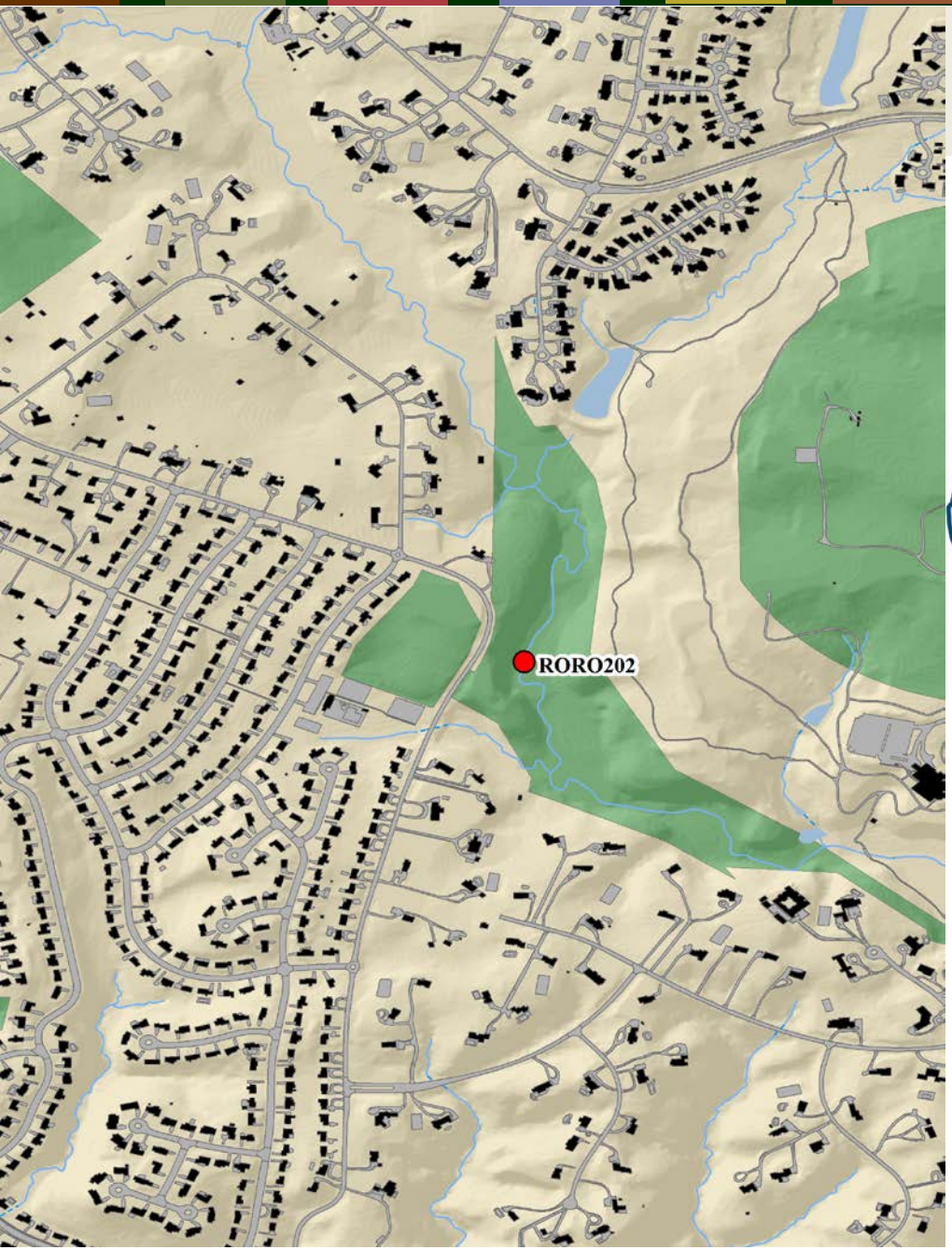

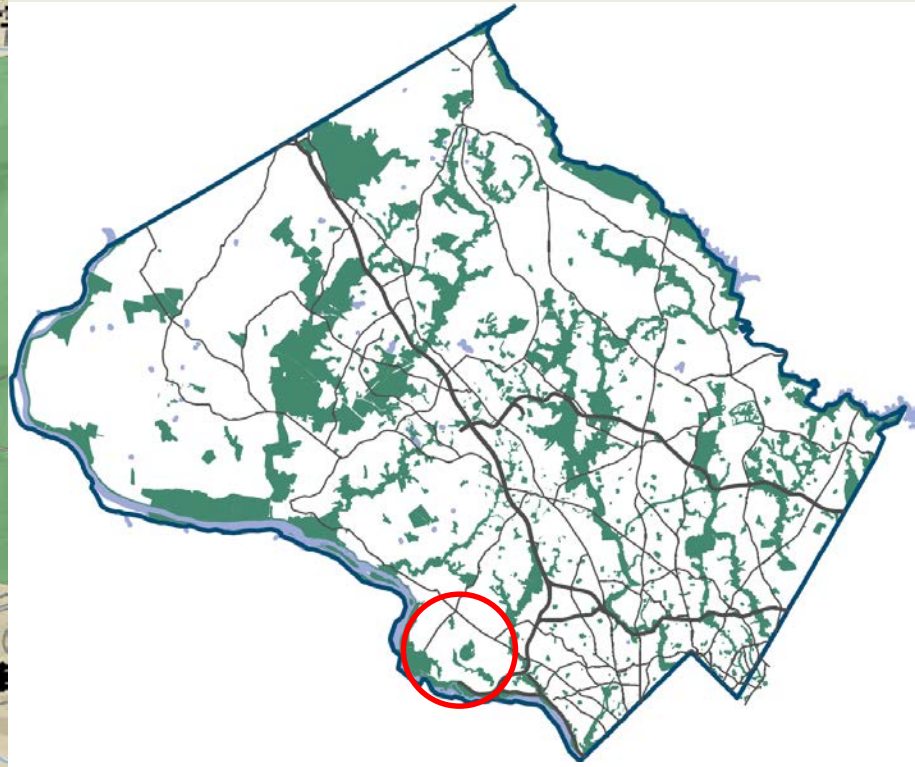

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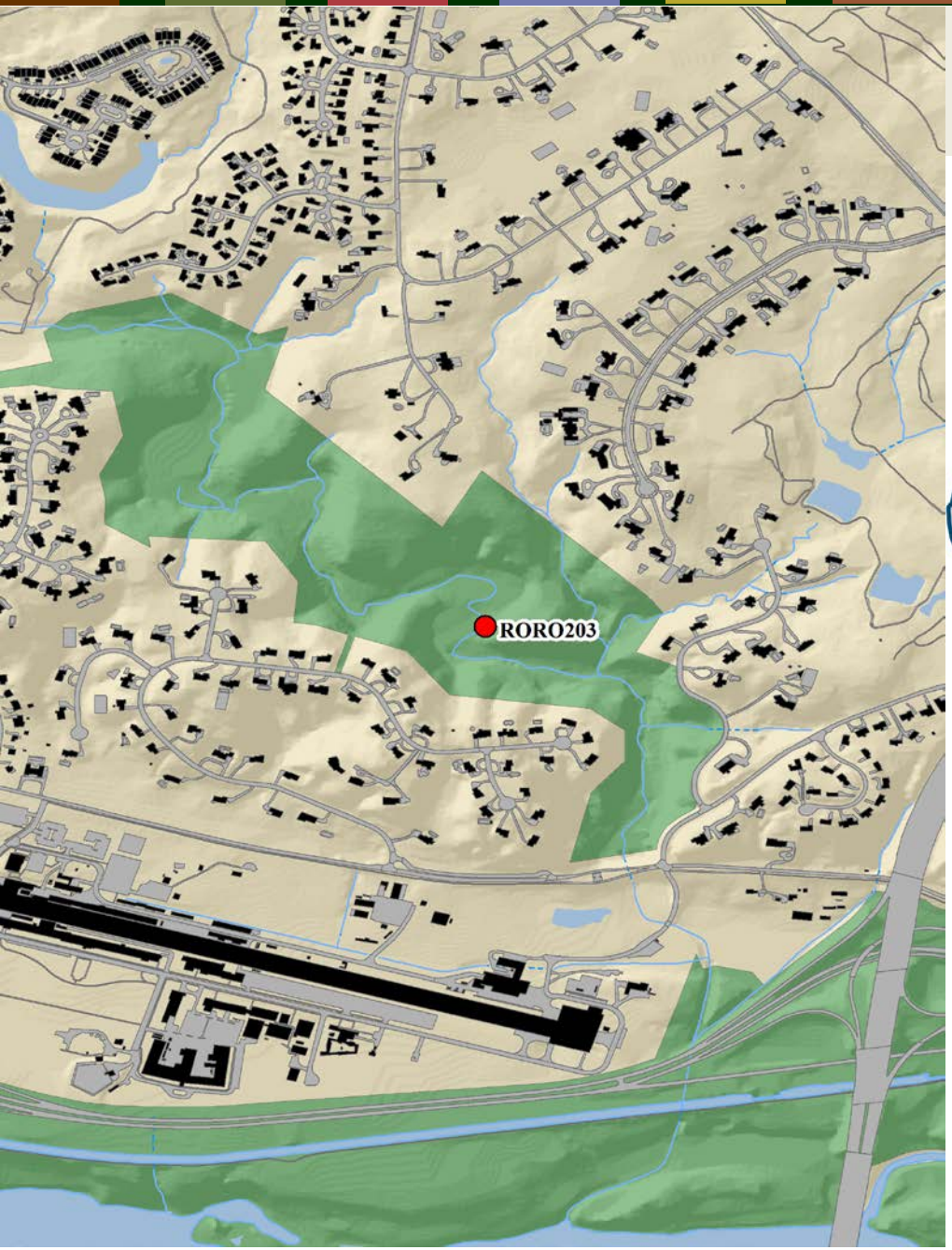
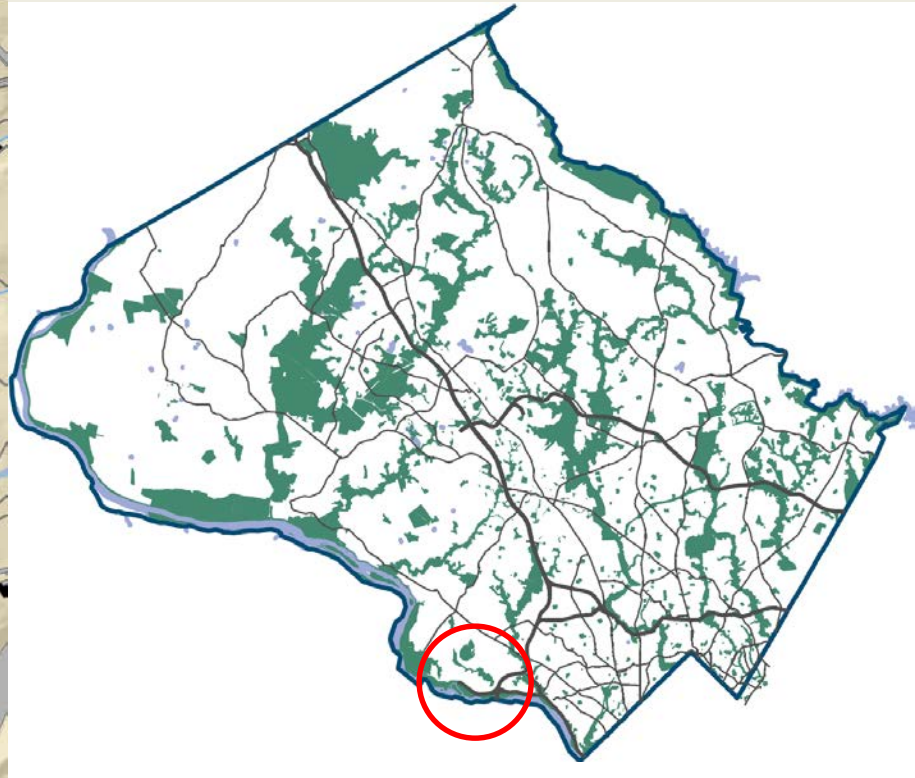
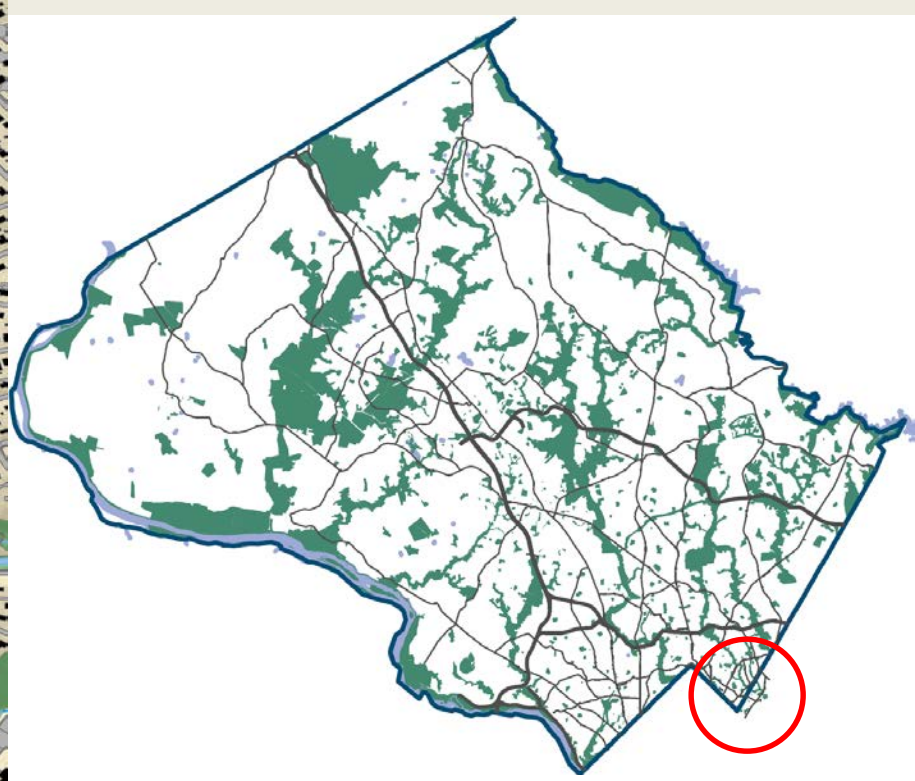




Sligo Creek



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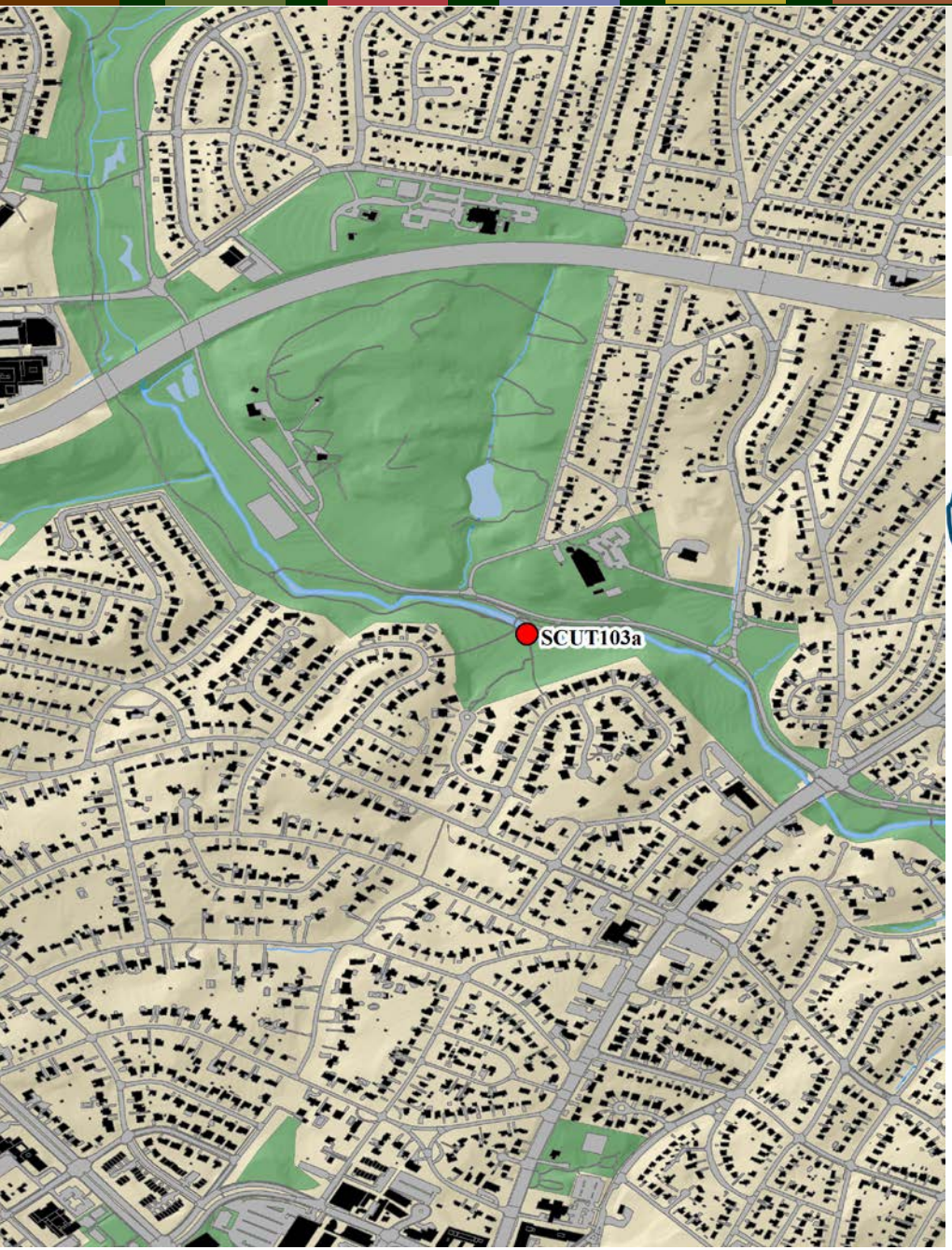

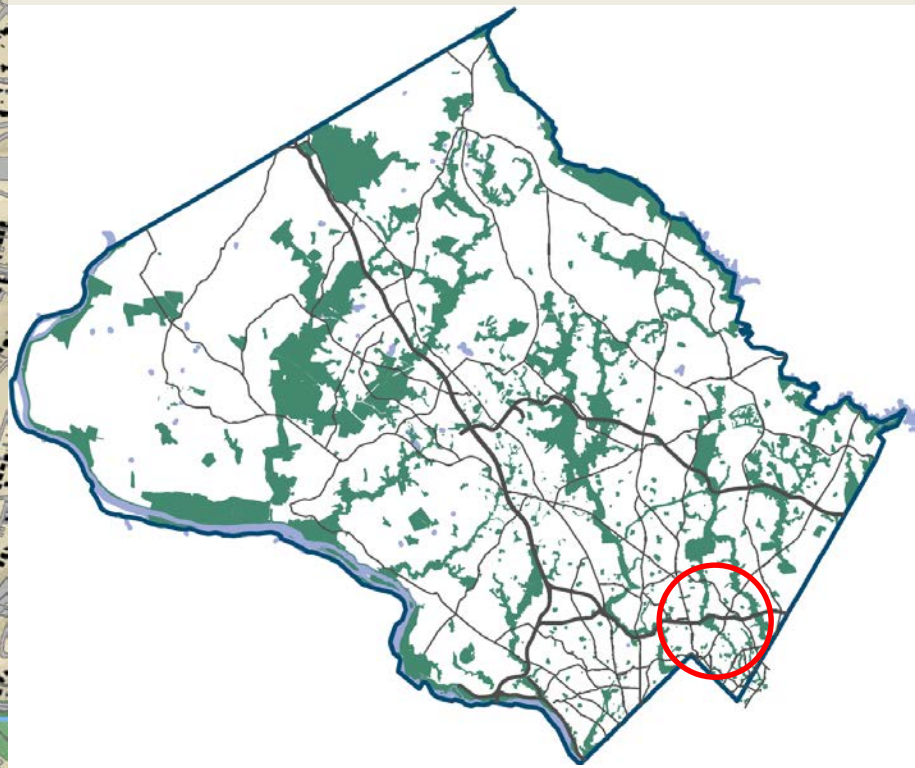

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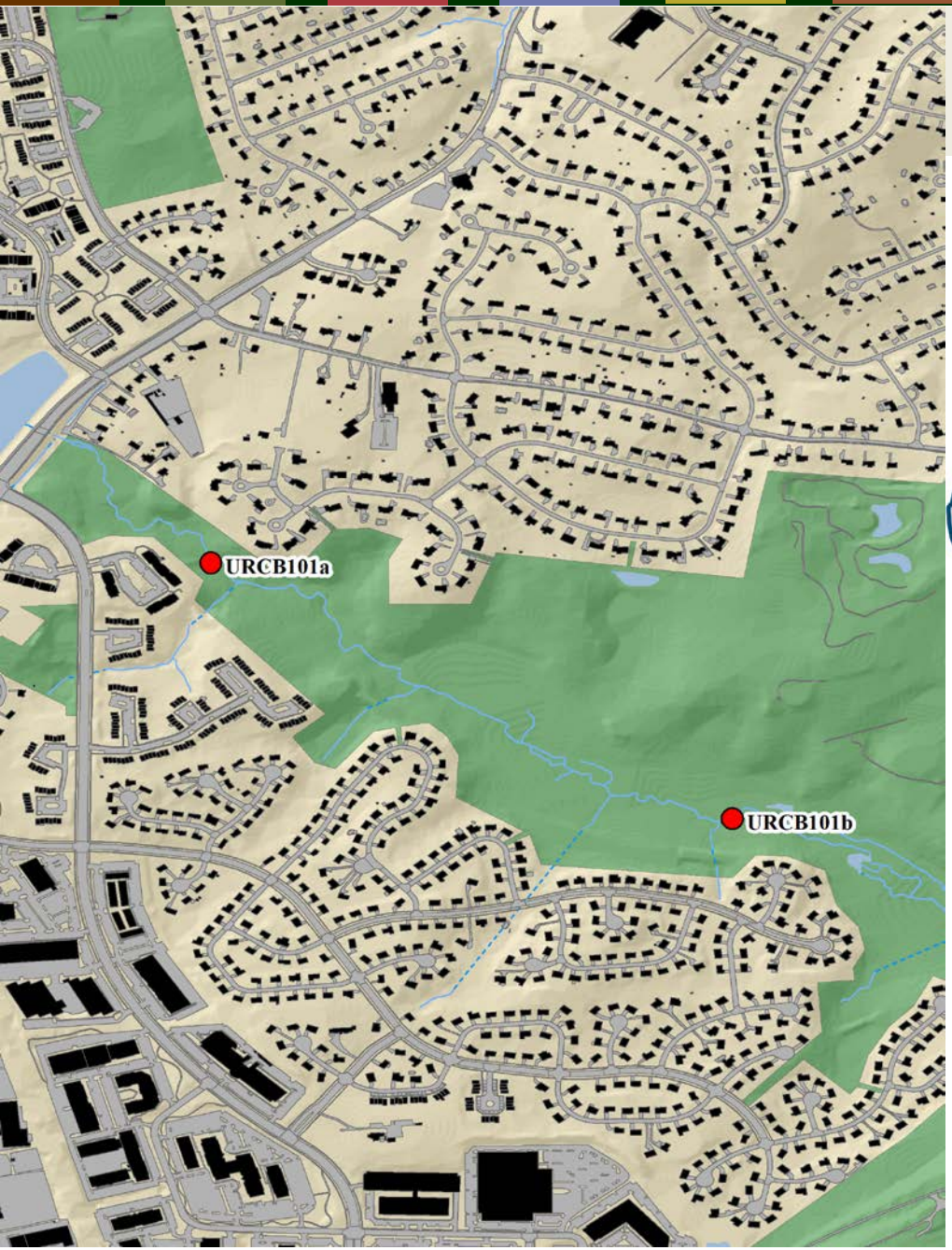

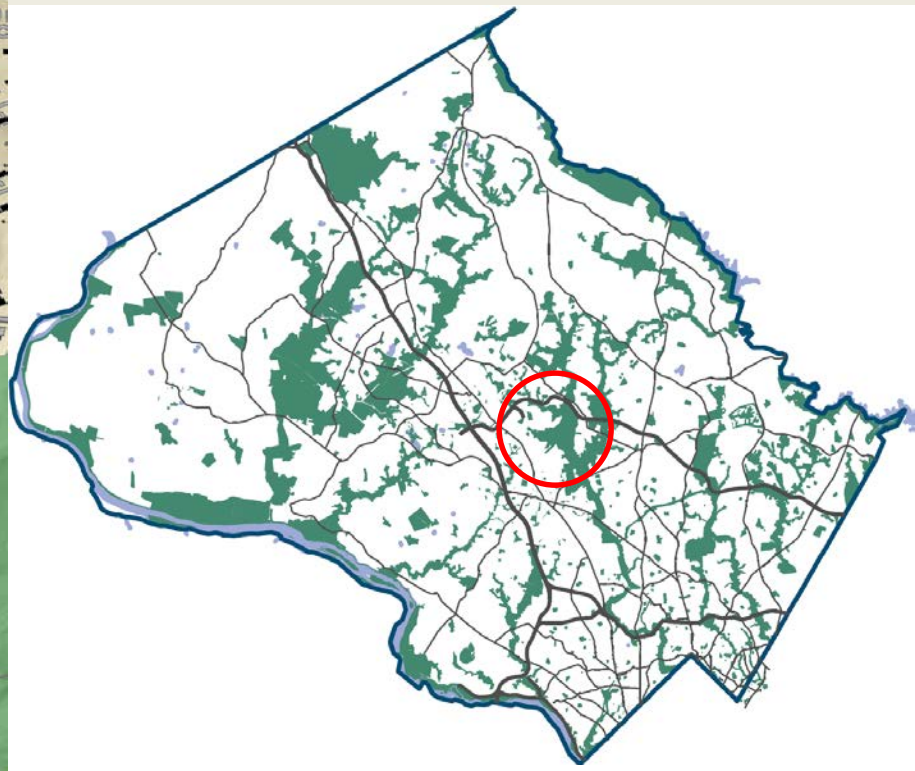

Rock Creek