

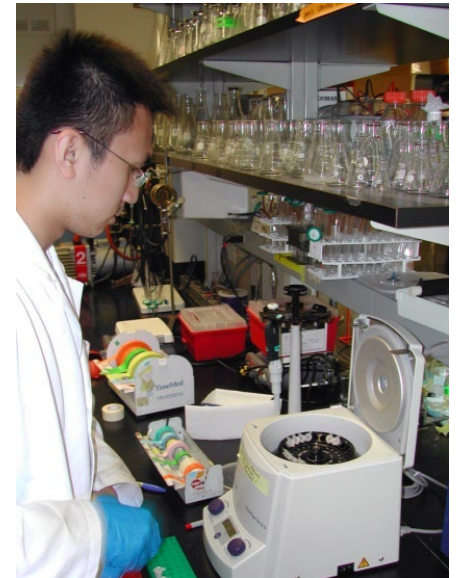
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April 2, 2025



Rutgers Cooperative Extension

Rutgers Cooperative Extension (RCE) helps the diverse population of New Jersey adapt to a rapidly changing society and improves their lives through an educational process that uses science-based knowledge.





Water Resources Program



Our mission is to identify and address water resources issues by engaging and empowering communities to employ practical science-based solutions to help create a more equitable and sustainable New Jersey.

Project Partners



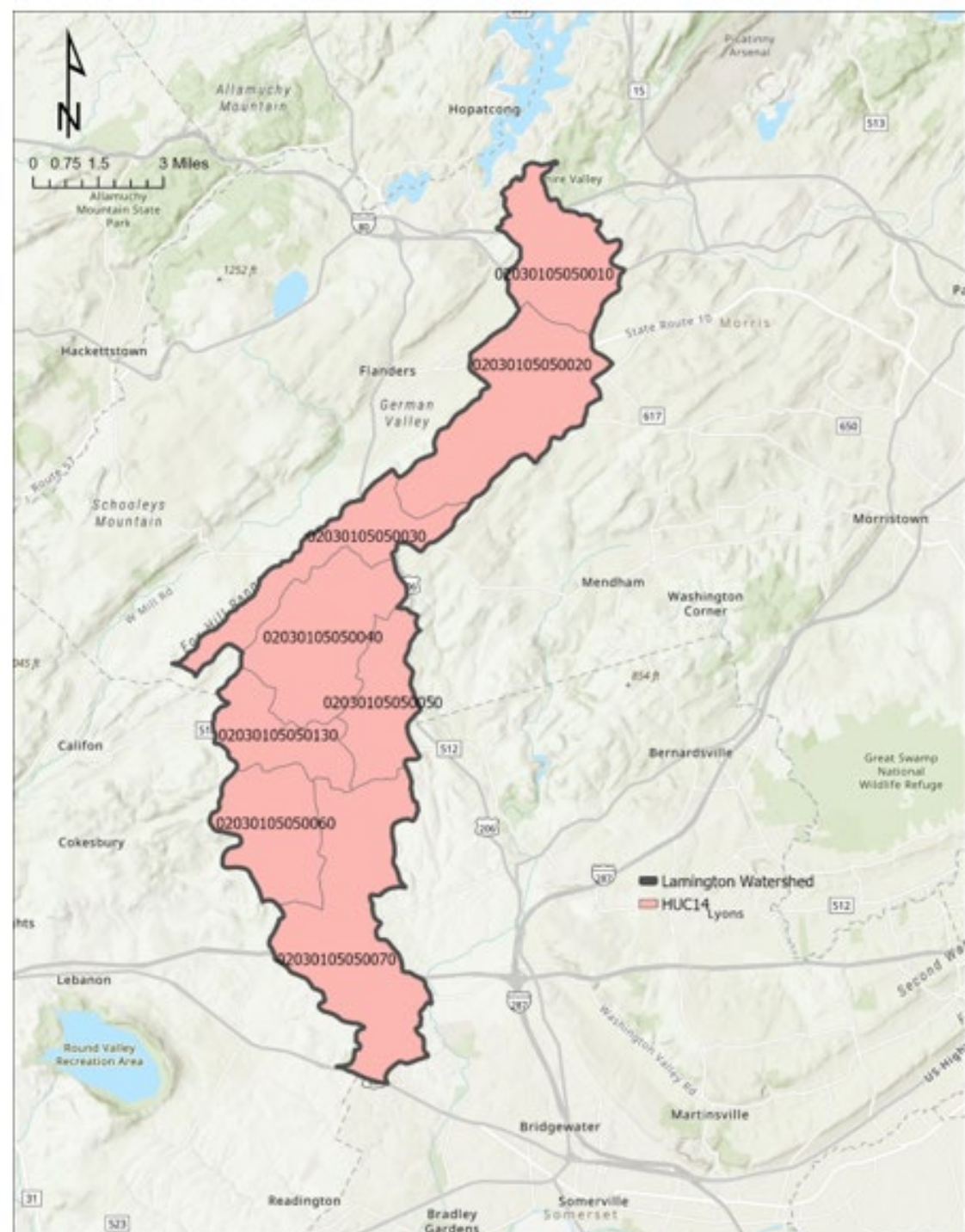
Reason for the Work

The NJDEP has prepared a TMDL for total suspended solids and total phosphorus that requires a 60% reduction in total suspended solids and a 68% to 84% reduction in total phosphorus. This project will create a plan that will be a blueprint for how to achieve these reductions.



Detailed Scope of Work (List of Objectives)

1. Identification of the causes and sources of nutrient loading
2. Estimation of the load reductions expected for the management measures
3. Recommendation of nonpoint source (NPS) management measures to address the causes and sources
4. Estimation of the amounts of technical and financial assistance needed
5. Development and delivery of informational and education component
6. Development of a schedule for implementing NPS controls
7. Development of interim, measurable milestones
8. Development of criteria to ensure load reductions are being achieved
9. Development of a monitoring component to evaluate effectiveness



Land Use and Nonpoint Source Loading Analysis

Land Cover	Total Phosphorus (TP) load (lbs/acre/yr)	Total Nitrogen (TN) load (lbs/acre/yr)	Total Suspended Solids (TSS) load (lbs/acre/yr)
High, Medium Density Residential	1.4	15	140
Low Density, Rural Residential	0.6	5	100
Commercial	2.1	22	200
Industrial	1.5	16	200
Urban, Mixed Urban, Other Urban	1.0	10	120
Agriculture	1.3	10	300
Forest, Water, Wetlands	0.1	3	40
Barrenland/ Transitional Area	0.5	5	60

Land Use Code	Land Use Label	Land Use Type	TP	TN	TSS
1110	Residential, High Density or Multiple Dwelling	Urban	1.4	15	140
1120	Residential, Single Unit, Medium Density	Urban	1.4	15	140
1130	Residential, Single Unit, Low Density	Urban	0.6	5	100
1140	Residential, Rural, Single Unit	Urban	0.6	5	100
1150	Mixed Residential	Urban	1.4	15	140
1200	Commercial/Services	Urban	2.1	22	200
1211	Military Installations	Urban	2.1	22	200
1214	No Long Military	Urban	2.1	22	200
1300	Industrial	Urban	1.5	16	200
1400	Transportation/Communication/Utilities	Urban	1.5	16	200
1410	Major Roadway	Urban	1.5	16	200
1411	Mixed Transportation Corridor Overlap Area	Urban	1.5	16	200
1419	Bridge Over Water	Water	0.1	3	40
1420	Railroads	Urban	1.5	16	200
1440	Airport Facilities	Urban	1.5	16	200
1461	Wetland Rights-Of-Way	Wetlands	0.1	3	40
1462	Upland Rights-Of-Way Developed	Urban	1	10	120

Land Use	Area (acres)		
	HUC14		
	02030105050010	02030105050020	02030105050030
AGRICULTURE	49.9	212.5	364.3
BARREN LAND	143.4	2.2	7.1
FOREST	1,614.5	2,492.2	1,351.1
URBAN	1,837.7	2,611.1	1,429.9
WATER	261.4	77.9	29.5
WETLANDS	297.7	1,670.0	661.1
Total:	4,204.6	7,065.9	3,843.1

Land Use	Area (acres)		
	HUC14		
	02030105050010	02030105050020	02030105050030
AGRICULTURE	1.2%	3.0%	9.5%
BARREN LAND	3.4%	0.0%	0.2%
FOREST	38.4%	35.3%	35.2%
URBAN	43.7%	37.0%	37.2%
WATER	6.2%	1.1%	0.8%
WETLANDS	7.1%	23.6%	17.2%
Total:	100.0%	100.0%	100.0%

Land Use	Area (acres)		
	HUC14		
	02030105050040	02030105050050	02030105050060
AGRICULTURE	1,120.4	713.1	1,910.8
BARREN LAND	93.4	0.5	1.7
FOREST	2,753.5	1,970.4	1,294.1
URBAN	1,246.4	403.0	655.9
WATER	62.0	8.0	22.9
WETLANDS	427.0	52.8	104.1
Total:	5,702.6	3,148.0	3,989.4

Land Use	Area (acres)		
	HUC14		
	02030105050040	02030105050050	02030105050060
AGRICULTURE	19.6%	22.7%	47.9%
BARREN LAND	1.6%	0.0%	0.0%
FOREST	48.3%	62.6%	32.4%
URBAN	21.9%	12.8%	16.4%
WATER	1.1%	0.3%	0.6%
WETLANDS	7.5%	1.7%	2.6%
Total:	100.0%	100.0%	100.0%

Land Use	Area (acres)	
	HUC14	
	02030105050070	02030105050130
AGRICULTURE	2,678.4	728.8
BARREN LAND	17.4	2.5
FOREST	3,644.8	1,382.4
URBAN	1,578.2	738.0
WATER	141.8	24.2
WETLANDS	674.5	128.7
Total:	8,735.1	3,004.6

Land Use	Area (acres)	
	HUC14	
	02030105050070	02030105050130
AGRICULTURE	30.7%	24.3%
BARREN LAND	0.2%	0.1%
FOREST	41.7%	46.0%
URBAN	18.1%	24.6%
WATER	1.6%	0.8%
WETLANDS	7.7%	4.3%
Total:	100.0%	100.0%

Table 17. Pollutant loads for HUC 02030105050010.

General				
Land Use	Area	TP	TN	TSS
Category	(acres)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Agriculture	49.9	64.9	499.3	14,980.0
Barren Land	143.4	71.7	717.0	8,603.6
Forest	1,614.5	161.5	4,843.6	64,581.1
Urban	1,837.7	2,562.6	26,760.4	265,671.9
Water	261.4	26.1	784.1	10,454.4
Wetlands	297.7	28.8	863.0	11,506.5
Totals =	4,204.6	2,915.5	34,467.4	375,797.5

Table 18. Pollutant loads for HUC 02030105050020.

General				
Land Use	Area	TP	TN	TSS
Category	(acres)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Agriculture	212.5	276.2	2,124.7	63,740.2
Barren Land	2.2	1.1	11.2	134.2
Forest	2,492.2	249.2	7,476.6	99,687.9
Urban	2,611.1	2,512.6	24,692.9	304,449.8
Water	77.9	7.8	233.6	3,114.8
Wetlands	1,670.0	162.9	4,885.9	65,145.7
Totals =	7,065.9	3,209.8	39,424.9	536,272.5

Table 19. Pollutant loads for HUC 02030105050030.

General				
Land Use	Area	TP	TN	TSS
Category	(acres)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Agriculture	364.3	473.6	3,643.3	109,298.7
Barren Land	7.1	3.6	35.7	428.9
Forest	1,351.1	135.1	4,053.2	54,042.2
Urban	1,429.9	1,115.4	10,234.0	155,833.6
Water	29.5	2.9	88.4	1,178.1
Wetlands	661.1	66.8	1,955.2	25,847.2
Totals =	3,843.1	1,797.4	20,009.7	346,628.8

Table 20. Pollutant loads for HUC 02030105050040.

General				
Land Use	Area	TP	TN	TSS
Category	(acres)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Agriculture	1,120.4	1,456.4	11,203.4	336,103.4
Barren Land	93.4	46.7	466.8	5,601.9
Forest	2,753.5	275.3	8,260.3	110,137.7
Urban	1,246.4	927.4	8,389.7	132,376.8
Water	62.0	6.2	186.0	2,479.3
Wetlands	427.0	41.4	1,243.0	16,572.8
Totals =	5,702.6	2,753.5	29,749.2	603,272.0

Table 21. Pollutant loads for HUC 02030105050050.

General				
Land Use	Area	TP	TN	TSS
Category	(acres)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Agriculture	713.1	927.1	7,131.3	213,937.6
Barren Land	0.5	0.3	2.7	32.1
Forest	1,970.4	197.0	5,911.2	78,815.6
Urban	403.0	294.9	2,666.9	42,881.3
Water	8.0	0.8	24.1	320.8
Wetlands	52.8	5.2	157.3	2,097.0
Totals =	3,148.0	1,425.3	15,893.3	338,084.4

Table 22. Pollutant loads for HUC 02030105050060.

General				
Land Use	Area	TP	TN	TSS
Category	(acres)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Agriculture	1,910.8	2,484.0	19,107.8	573,235.2
Barren Land	1.7	0.9	8.6	102.8
Forest	1,294.1	129.4	3,882.2	51,762.4
Urban	655.9	469.7	4,200.4	67,719.7
Water	22.9	2.3	68.7	915.3
Wetlands	104.1	10.3	309.5	4,126.4
Totals =	3,989.4	3,096.6	27,577.1	697,861.8

Table 23. Pollutant loads for HUC 02030105050070.

General				
Land Use	Area	TP	TN	TSS
Category	(acres)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Agriculture	2,678.4	3,482.0	26,784.2	803,527.5
Barren Land	17.4	8.7	86.8	1,041.0
Forest	3,644.8	364.5	10,934.3	145,790.7
Urban	1,578.2	1,346.2	12,798.4	181,466.9
Water	141.8	14.2	425.4	5,671.3
Wetlands	674.5	65.4	1,961.2	26,148.9
Totals =	8,735.1	5,280.8	52,990.2	1,163,646.4

Table 24. Pollutant loads for HUC 02030105050130.

General				
Land Use	Area	TP	TN	TSS
Category	(acres)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Agriculture	728.8	947.4	7,288.1	218,642.2
Barren Land	2.5	1.3	12.7	152.9
Forest	1,382.4	138.2	4,147.2	55,296.0
Urban	738.0	532.2	4,805.4	74,472.0
Water	24.2	2.4	72.6	967.7
Wetlands	128.7	12.9	386.1	5,148.1
Totals =	3,004.6	1,634.5	16,712.1	354,678.9

General Land Use Category	Area	Total Phosphorus	Total Nitrogen	Total Suspended Solids
	(acres)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Agriculture	7,778	10,112	77,782	2,333,465
Barren Land	268	134	1,342	16,097
Forest	16,503	1,650	49,509	660,114
Urban	10,500	9,761	94,548	1,224,872
Water	628	63	1,883	25,102
Wetlands	4,016	394	11,761	156,593
Totals =	39,693	22,113	236,824	4,416,242

Impervious Cover Analysis



Impervious Cover Model

Stream Quality

Good

Fair

Poor

Sensitive

Impacted

Non-Supporting

Urban Drainage

10%

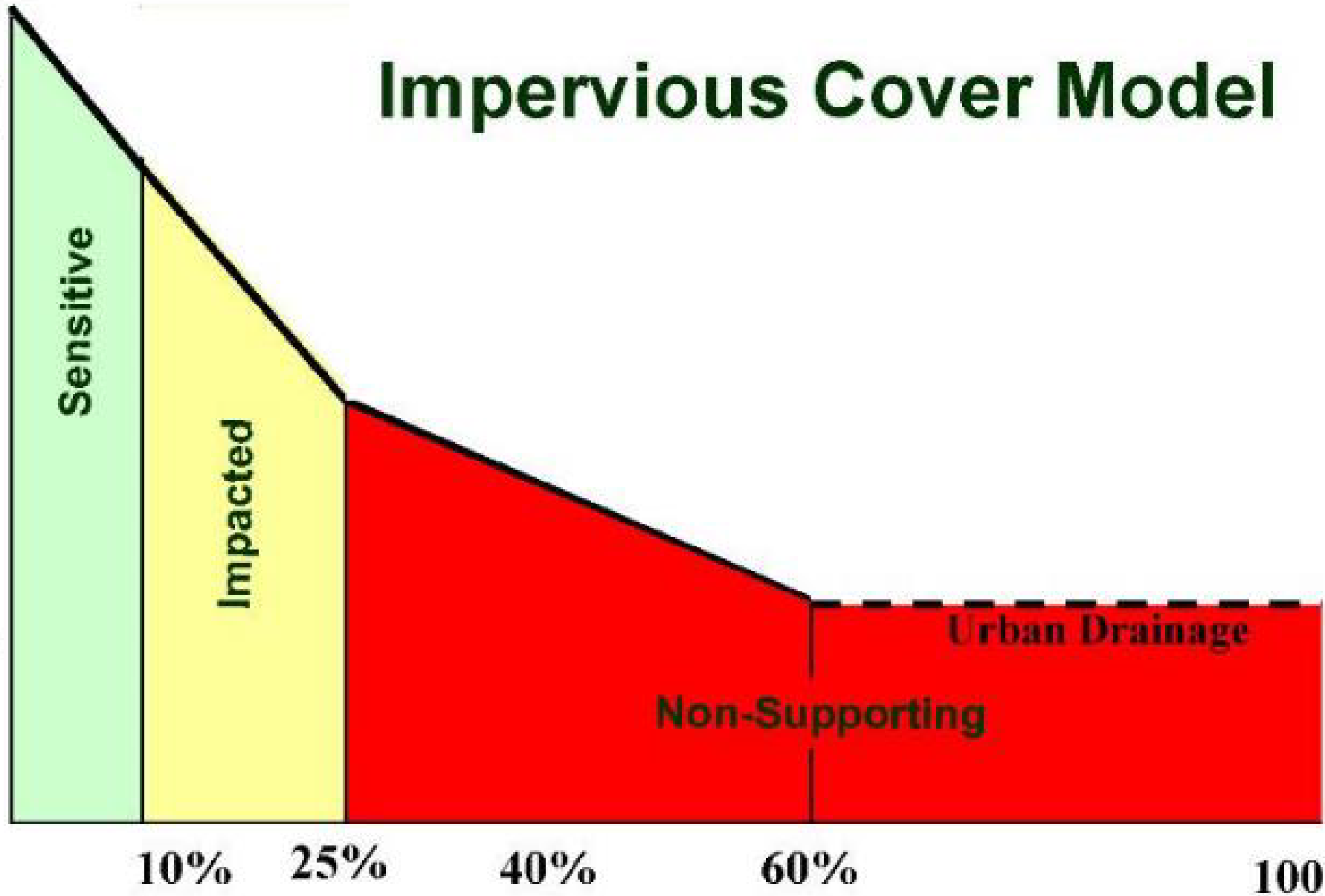
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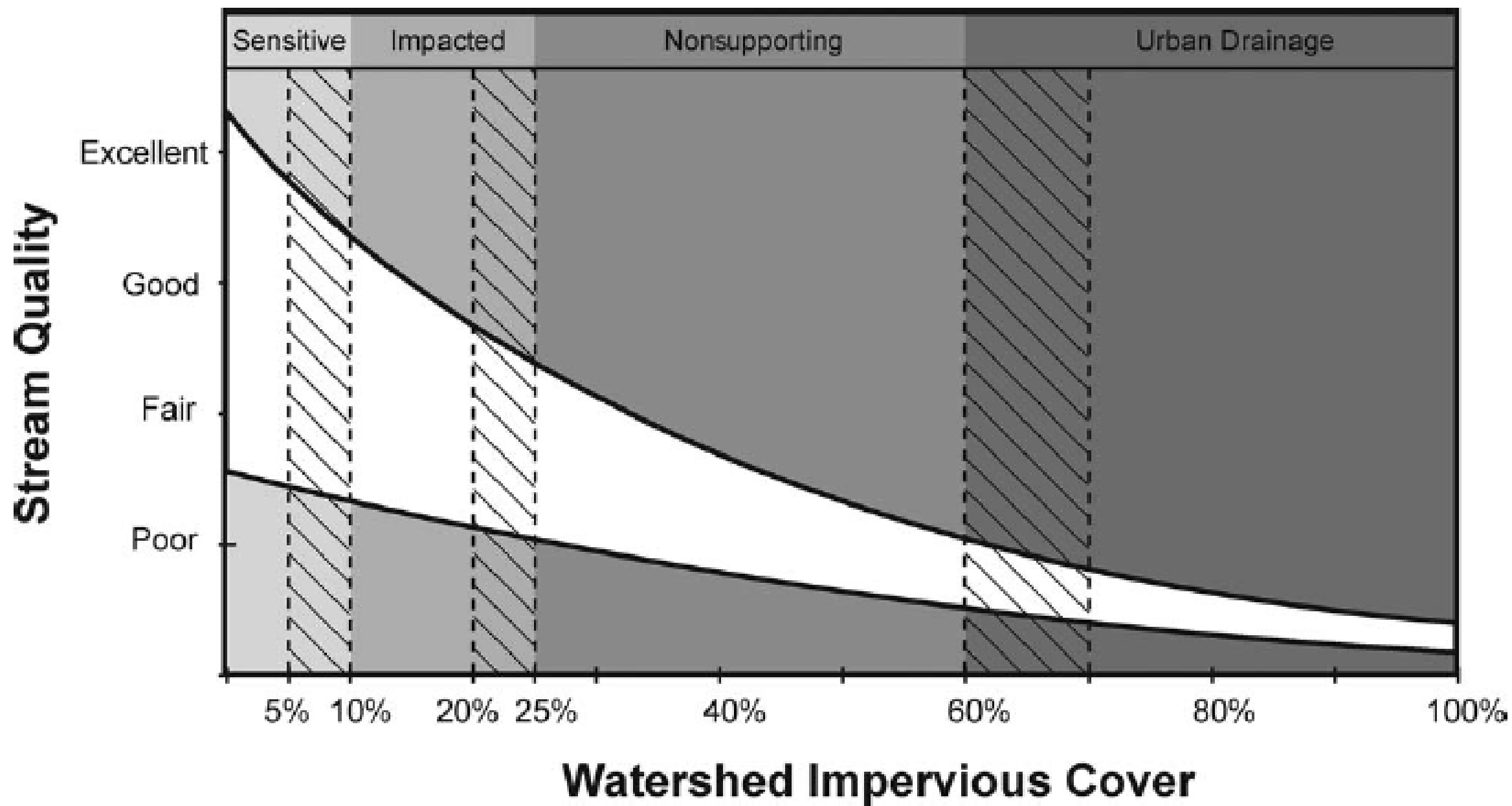
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60%

100%

Watershed Impervious Cover

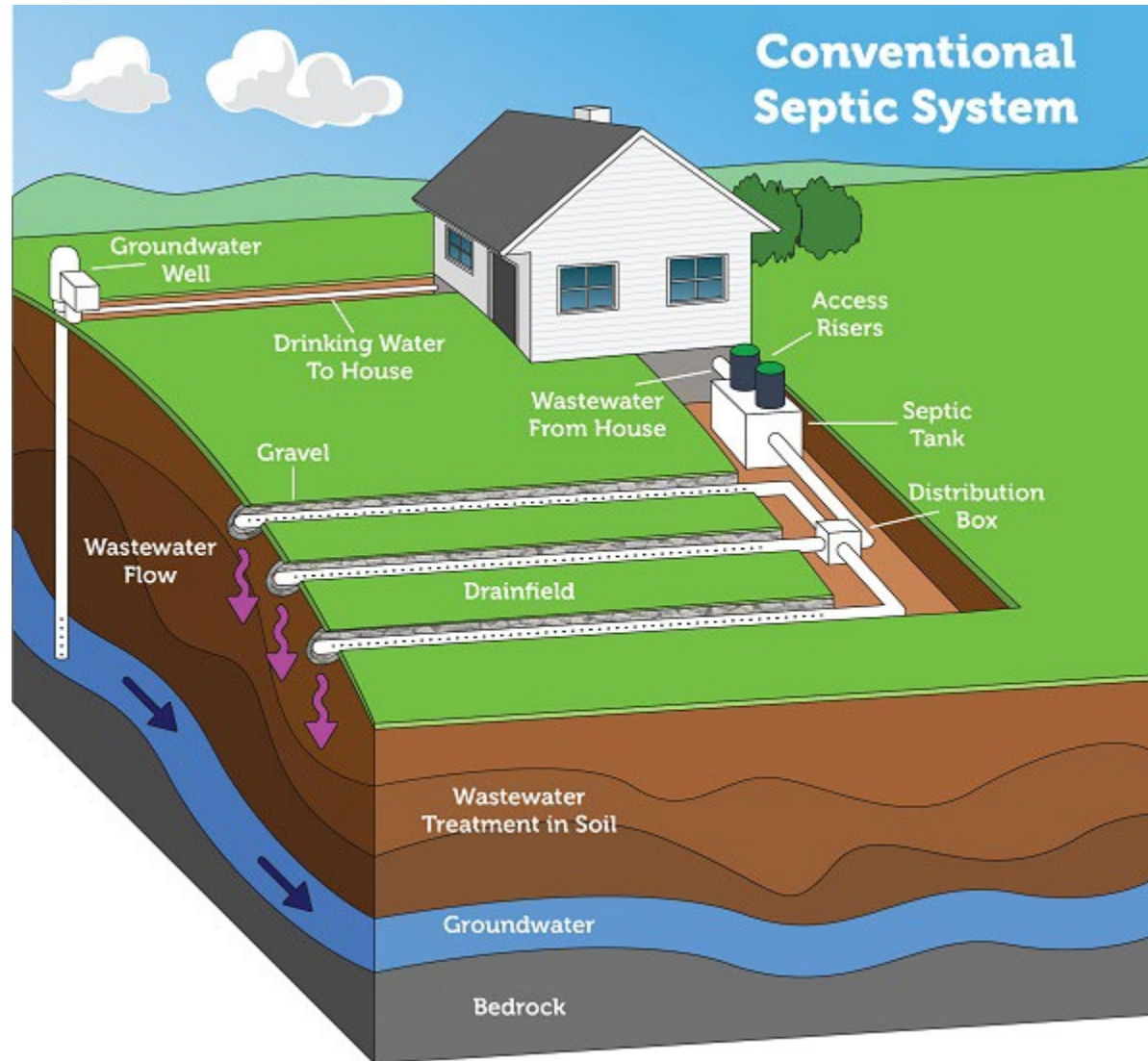




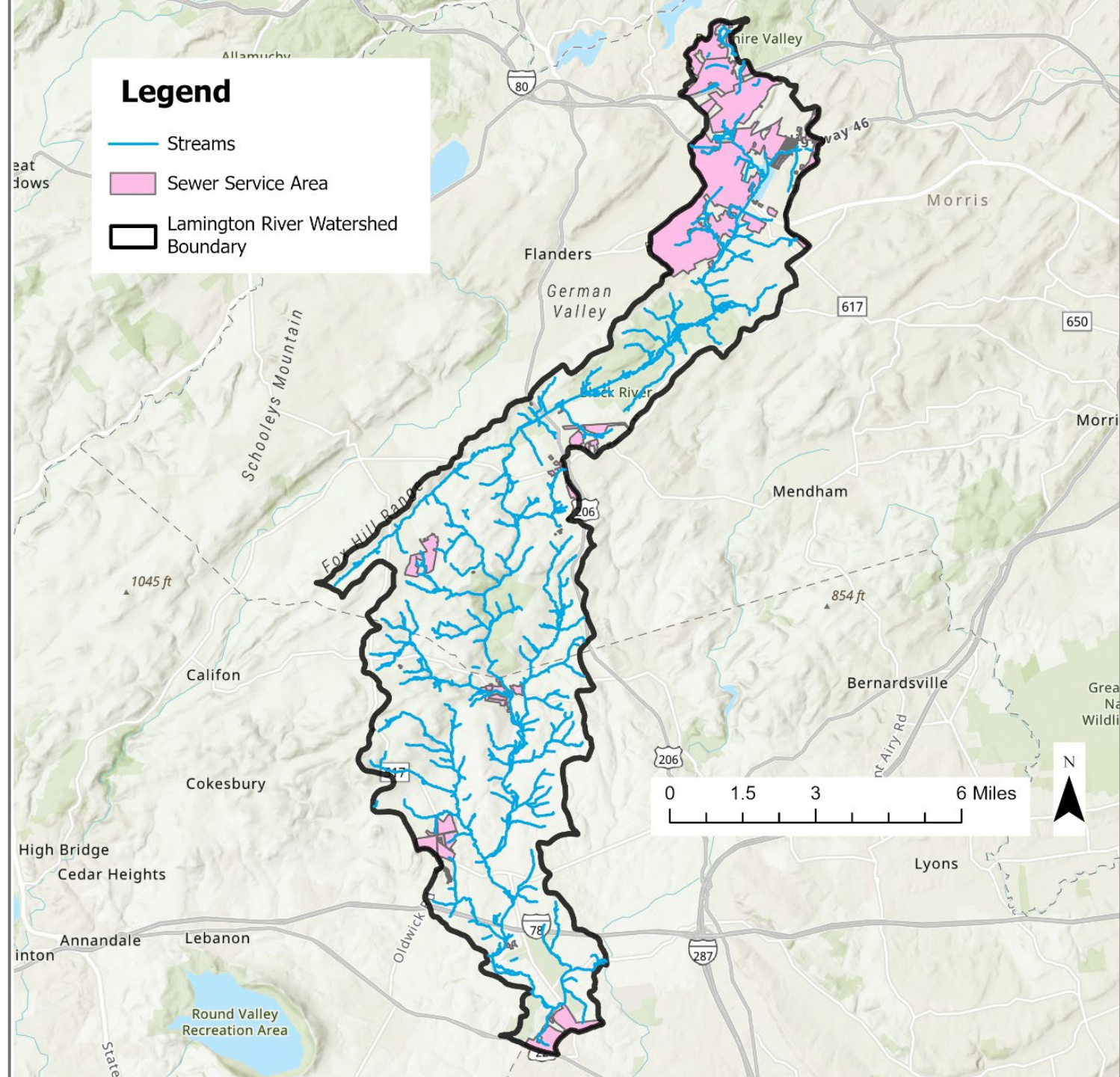
HUC14	Impervious Cover (acres)			
	Buildings	Other	Road	Total
02030105050010	180.9	497.3	270.7	948.9
02030105050020	197.1	404.1	260.7	861.9
02030105050030	70.9	189.4	106.9	367.2
02030105050040	63.5	194.7	103.6	361.8
02030105050050	17.4	59.1	64.8	141.3
02030105050060	37.3	109.1	80.9	227.4
02030105050070	57.3	229.6	182.5	469.3
02030105050130	34.0	105.7	71.8	211.5
TOTALS =	658.4	1,789.0	1,141.9	3,589.3

HUC14	Total Impervious Cover (ac)	Total HUC14 Area (ac)	Impervious Cover (%)
02030105050010	948.9	4,204.6	22.6%
02030105050020	861.9	7,065.9	12.2%
02030105050030	367.2	3,843.1	9.6%
02030105050040	361.8	5,702.6	6.3%
02030105050050	141.3	3,148.0	4.5%
02030105050060	227.4	3,989.4	5.7%
02030105050070	469.3	8,735.1	5.4%
02030105050130	211.5	3,004.6	7.0%
Totals =	3,589.3	39,693.3	9.0%

Septic System Analysis



Please note: Septic systems vary. Diagram is not to scale.



HUC14	Number of Parcels that are outside Sewer Service Area and Inside the 200- meter Stream Buffer (septic systems)	Homes with Septic Systems Built Prior to 2000	TP Load from Septic Systems (lbs/yr)
02030105050010	18	18	113.0
02030105050020	495	465	2,919.1
02030105050030	381	336	2,109.3
02030105050040	269	216	1,356.0
02030105050050	95	88	552.4
02030105050060	81	72	452.0
02030105050070	112	106	665.4
02030105050130	151	132	828.6
Totals =	1,602	1,433	8,995.8

Fertilizer Ordinance

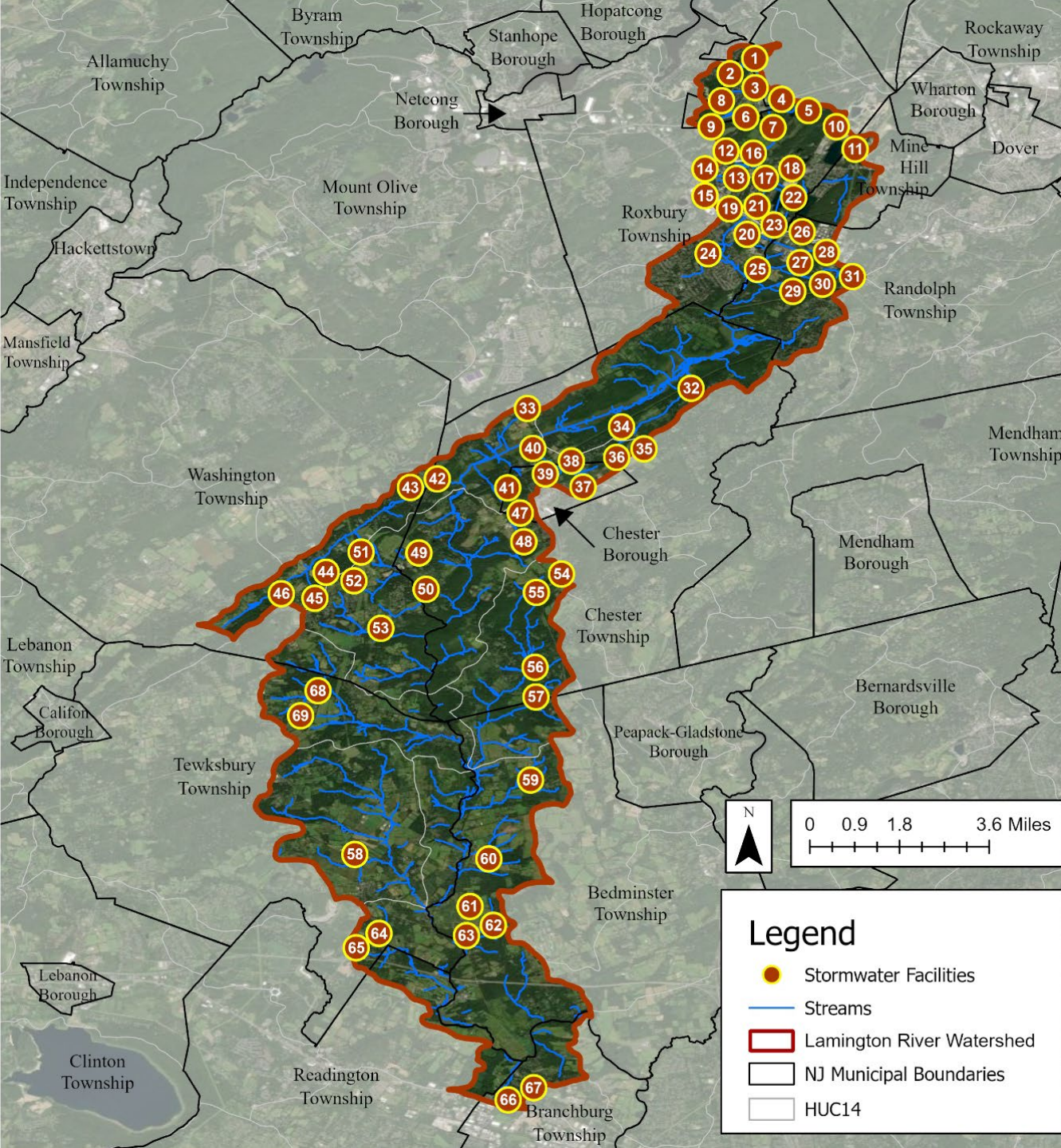


Lamington River Watershed				
Residential Area (ac)	Impervious Cover Total (ac)	Lawn (ac)	TP Fertilizer Applied (lbs/yr)	TP Fertilizer Runoff (lbs/yr)
HUC 02030105050010				
865.2	360.4	504.8	1,814.1	45.4
HUC 02030105050020				
2,014.5	602.0	1,412.5	5,076.1	126.9
HUC 02030105050030				
1,037.8	230.3	807.5	2,901.9	72.5
HUC 02030105050040				
1,002.2	216.7	785.5	2,822.9	70.6
HUC 02030105050050				
309.9	68.5	241.4	867.5	21.7
HUC 02030105050060				
554.1	110.3	443.8	1,594.9	39.9
HUC 02030105050070				
810.6	167.9	642.7	2,309.7	57.7
HUC 02030105050130				
582.1	124.9	457.2	1,643.0	41.1
TOTALS				
7,176.4	1,881.0	5,295.4	19,030.1	475.8

Street Sweeping and Leaf Collection



Watershed-wide Practice		TP Reduction (lbs/yr)
1	Street Sweeping (twice per week throughout entire study area)	1,142
2	Street Sweeping (once a month throughout entire study area)	91.4
3	Fall Street Sweeping and Leaf Collection (only residential areas)	466.4
4	Combination of 2 and 3	557.8



ID	Owner	Address	Type	Town
HUC 02030105050010				
1	Kara At Mt Arlington and A&R Management	125 Howard Blvd	N	Mount Arlington Boro
2	Kara At Mt Arlington and A&R Management	125 Howard Blvd	N	Mount Arlington Boro
3	SNH Ns Properties Trust C/O PTC	2 Hillside Dr	D	Mount Arlington Boro
4	Unknown	181 Howard Blvd	N	Mount Arlington Boro
5	Unknown	172-176-180 Howard Blvd	N	Roxbury Twp
6	Mt Arlington Investors 400 LLC	400 Valley Rd	N	Mount Arlington Boro
7	Kenvil Assoc	127 Howard Blvd	N	Roxbury Twp
8	Valley Road Development Urban Renew	500 Valley Rd	N	Mount Arlington Boro

ID	Land Use	Drainage Area	Type	TP Load (lbs/yr)	Existing TP Load Reduction	Future TP Load Reduction
HUC 2030105050010						
1	Recreational Land	4.34	N	4.3	2.6	2.6
2	Residential, High Density or Multiple Dwelling	5.70	N	8.0	4.8	4.8
3	Residential, High Density or Multiple Dwelling	5.02	D	7.0	1.4	4.2
4	Commercial/Services	7.66	N	16.1	9.6	9.6
5	Commercial/Services	3.71	N	7.8	4.7	4.7
6	Commercial/Services	21.92	N	46.0	27.6	27.6
7	Transportation/Communication/Utilities	6.88	N	10.3	6.2	6.2
8	Residential, High Density or Multiple Dwelling	27.21	N	38.1	22.9	22.9

Existing Pollutant Load for the Study Area

	Lamington River Watershed
Nonpoint source aerial loading based upon land use	22,113
Septic system load	8,995
Detention Basin Load Reduction	-619
Total Existing Load	30,489

Parcels for Retrofitting with Green Infrastructure

Insert map of sites...

Site ID	Site Name and Address	Lot Area (sq.ft.)	Impervious Cover for Lot (sq.ft.)	Total Drainage Area (sq.ft.)	Size of Rain Garden Practice (sq.ft.)	Size of Porous Asphalt Practice (sq.ft.)	Size of Other Practice
HUC 02030105050010							
1	Canfield Avenue Elementary School, 42 Canfield Avenue, Mine Hill NJ 07803	633,014	155,613	13,325	3,330	0	0
2	Coco's Chateau, 247 US-46, Mine Hill NJ 07803	35,723	21,483	3,960	0	1,000	0
3	Country Lakes Animal Clinic, 378 US-46, Mine Hill NJ 07803	33,664	27,664	6,500	0	1,770	0

Site ID	Site Name and Address	TP Loading reduction with underdrain (lbs/yr)	TP Loading reduction w/o underdrain (lbs/yr)
HUC 02030105050010			
1	Canfield Avenue Elementary School, 42 Canfield Avenue, Mine Hill NJ 07803	4.50	6.75
2	Coco's Chateau, 247 US-46, Mine Hill NJ 07803	0.60	0.90
3	Country Lakes Animal Clinic, 378 US-46, Mine Hill NJ 07803	0.78	1.17
4	Franklin Elementary School and Lincoln Roosevelt School, 8 Meeker Street, Succasunna NJ 07876	12.00	18.00
5	Hodes Veterinary Group, 265 US- 46, Mine Hill NJ 07803	0.42	0.63

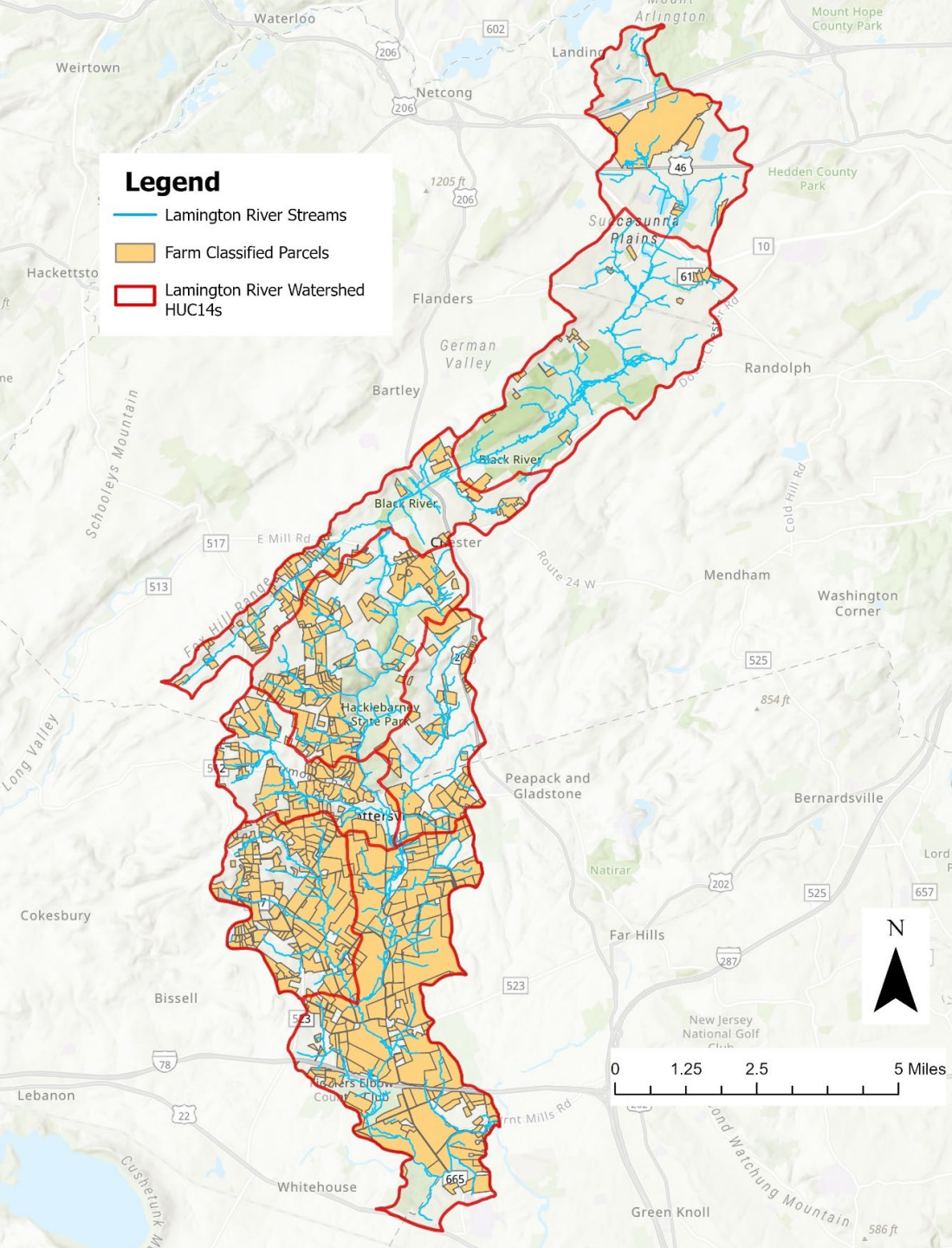
Rain Gardens to Manage Rooftop Runoff



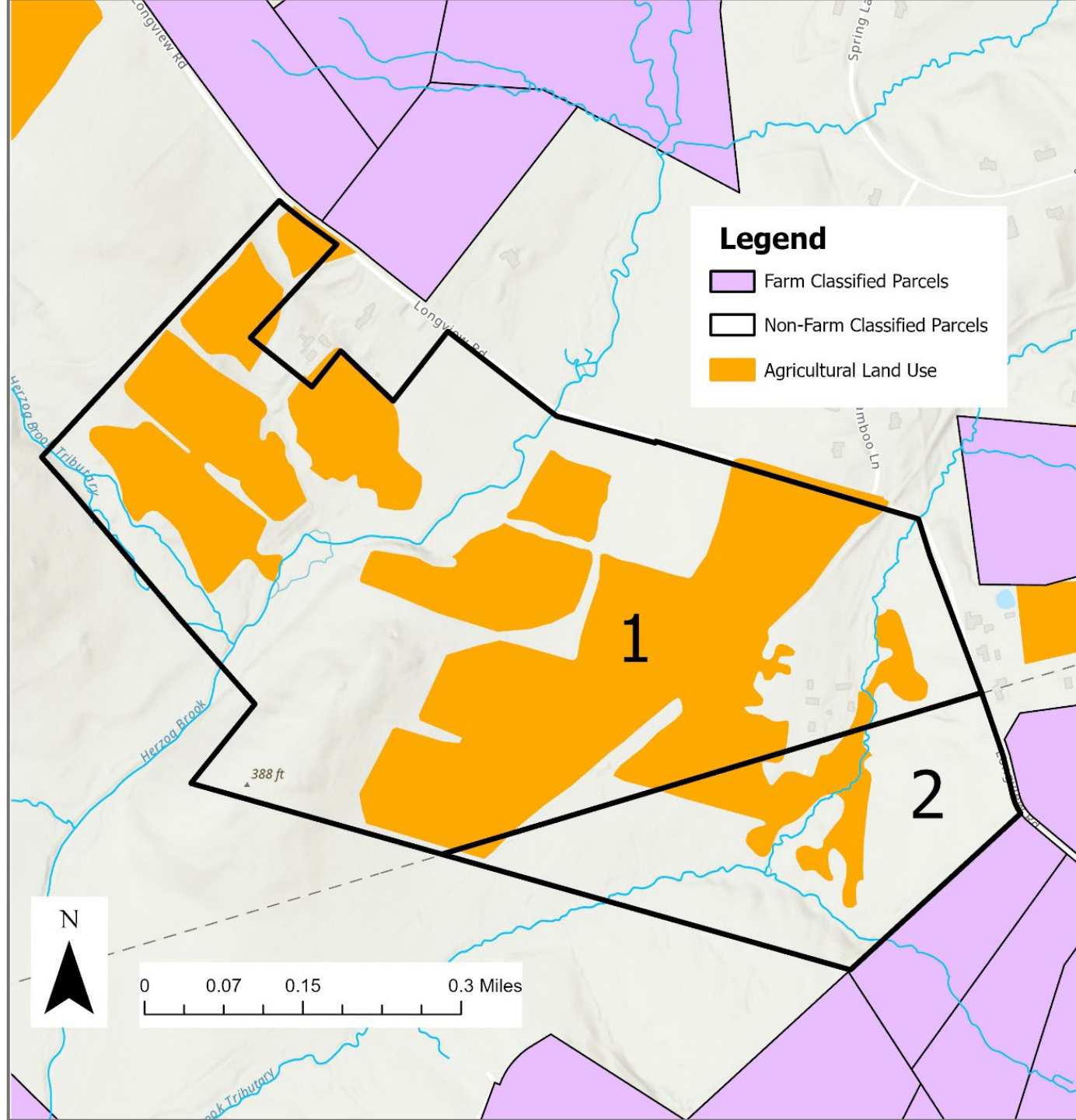
- 11,233 buildings in the study area
- 658.4 acres of rooftop
- 25% of the rooftops of 25% buildings
- TP Reduction = 81.8 lbs/yr
- TN Reduction = 856.9 lbs/yr
- TSS Reduction = 7,790 lbs/yr



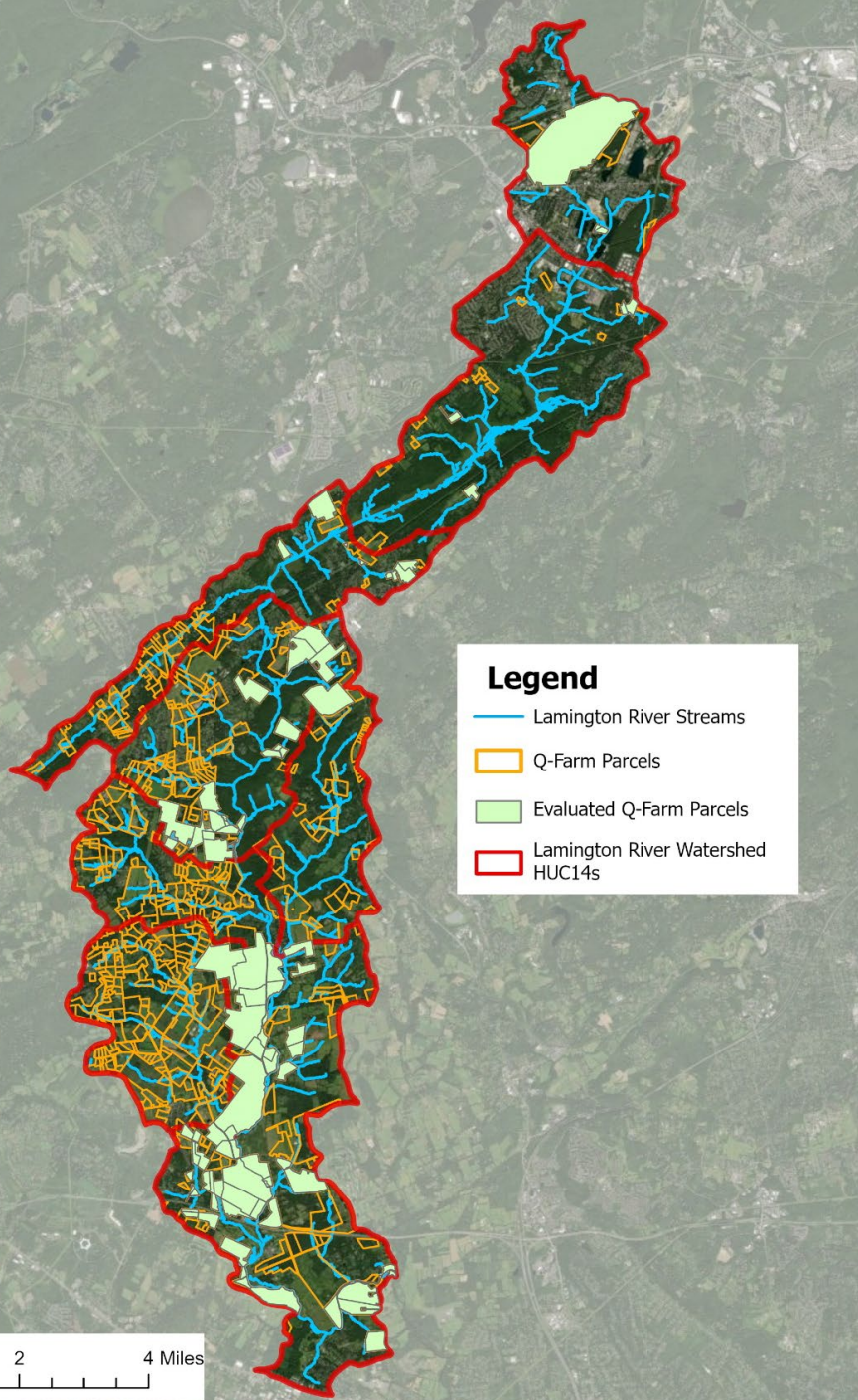
Analysis of Farm Parcels



- Urban Lands = 9,761 lb TP / year
- Ag Lands = 10,112 lb TP / year
- 669 Farm Parcels = 16,085 acres
- Ag land use in these parcels = 6,503 acres = 8,453 lb TP / year



	Ag LU	TP Load	No. of
Description	(acres)	(lbs/yr)	Parcels
Total for Farm Property (3A, 3B, and/or Q-Farm)	6,503	8,453	669
Total for entire study area (all four HUC14s)	7,778	10,112	10,532*
Remaining	1,275	1,659	9,863



- 669 Farm Parcels
- 243 Farm Parcels intersect with river or tributaries
- 93 Farm Parcels were visited
- Farms Classified as:
 - Row Crops
 - Livestock/Horses
 - Hay/Grass
 - Wooded
 - Nursery

Block	Lot	Q-Farm Code	Municipality	Cover Crop	Enhanced Stream Buffer	Impervious Cover Mgt.	Rainwater Harvesting	Livestock Exclusion	Manure Mgt.
48	4	Q0292	Bedminster Twp	X		X	X		
48	3	Q0303	Bedminster Twp						X
50	1	Q0329	Bedminster Twp	X	X				
50	1.01	Q0332	Bedminster Twp	X	X				
8	24.12	QFARM	Bedminster Twp	X					
8	16	QFARM	Bedminster Twp				X		
12	1.16	QFARM	Bedminster Twp	X					
37	1.01	QFARM	Bedminster Twp	X					

Existing load from 32 Q-Farms recommended for cover crop

Area (ac)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Load (lbs/yr)
1,198.5	1,558	11,985	359,536

Load reduction for cover crop on recommended 32 Q-Farms

Area (ac)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Load (lbs/yr)
1,198.5	935	3,596	287,629

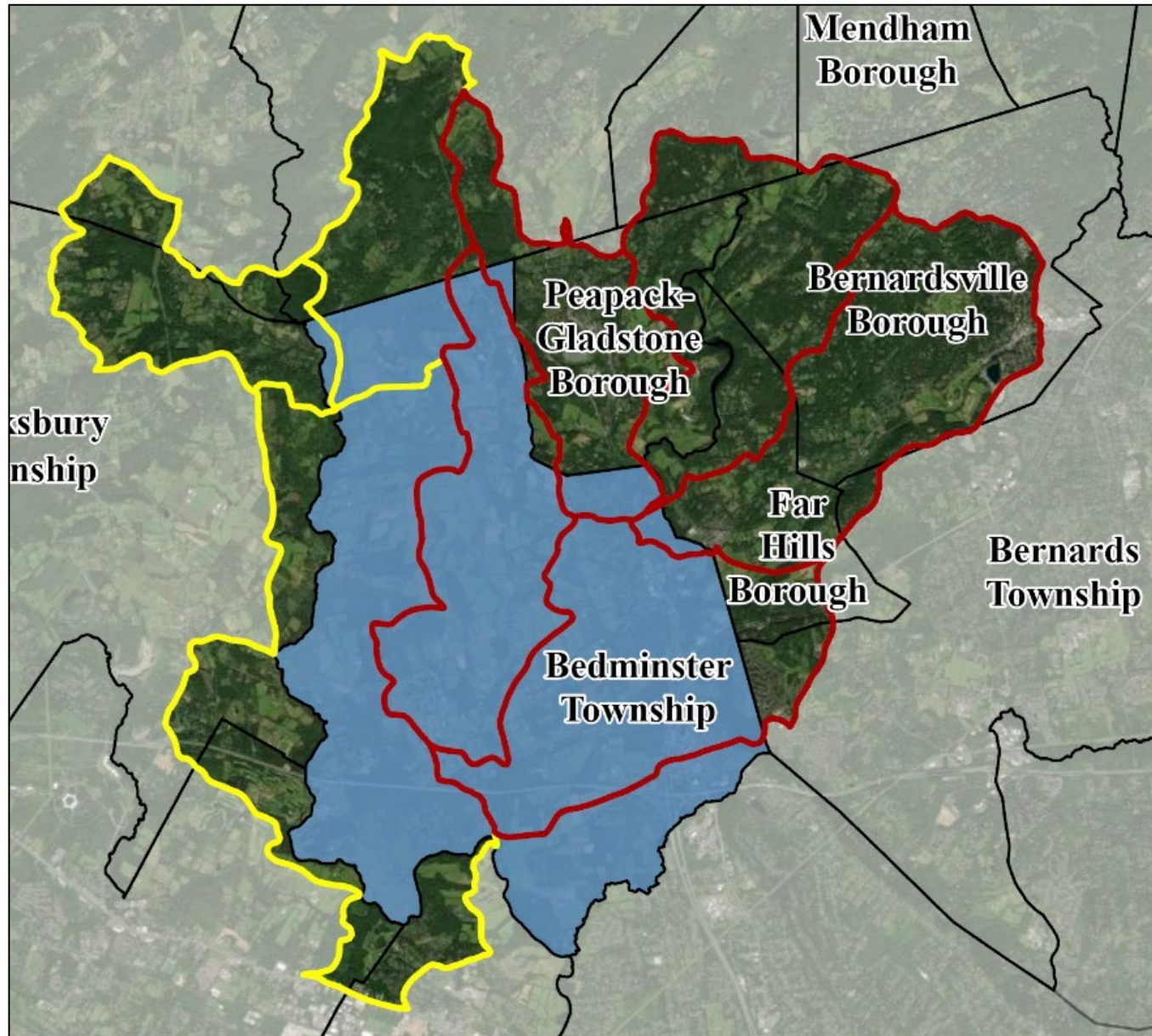
Load reductions for proposed management strategies

Management Strategy	TP Reduction (lb/yr)
Leaf collection and additional street sweeping (Option #4 – Table 27)	557.8
Green infrastructure for proposed retrofit sites	245.7
Rain gardens for ¼ rooftops for ¼ of buildings	81.8
Converting existing detention basins to bioretention basins	152.4
Agricultural management practices on specific farms	935.0
Septic system replacement	3,958.1
TOTAL =	5,930.8





Existing loads and proposed load reduction

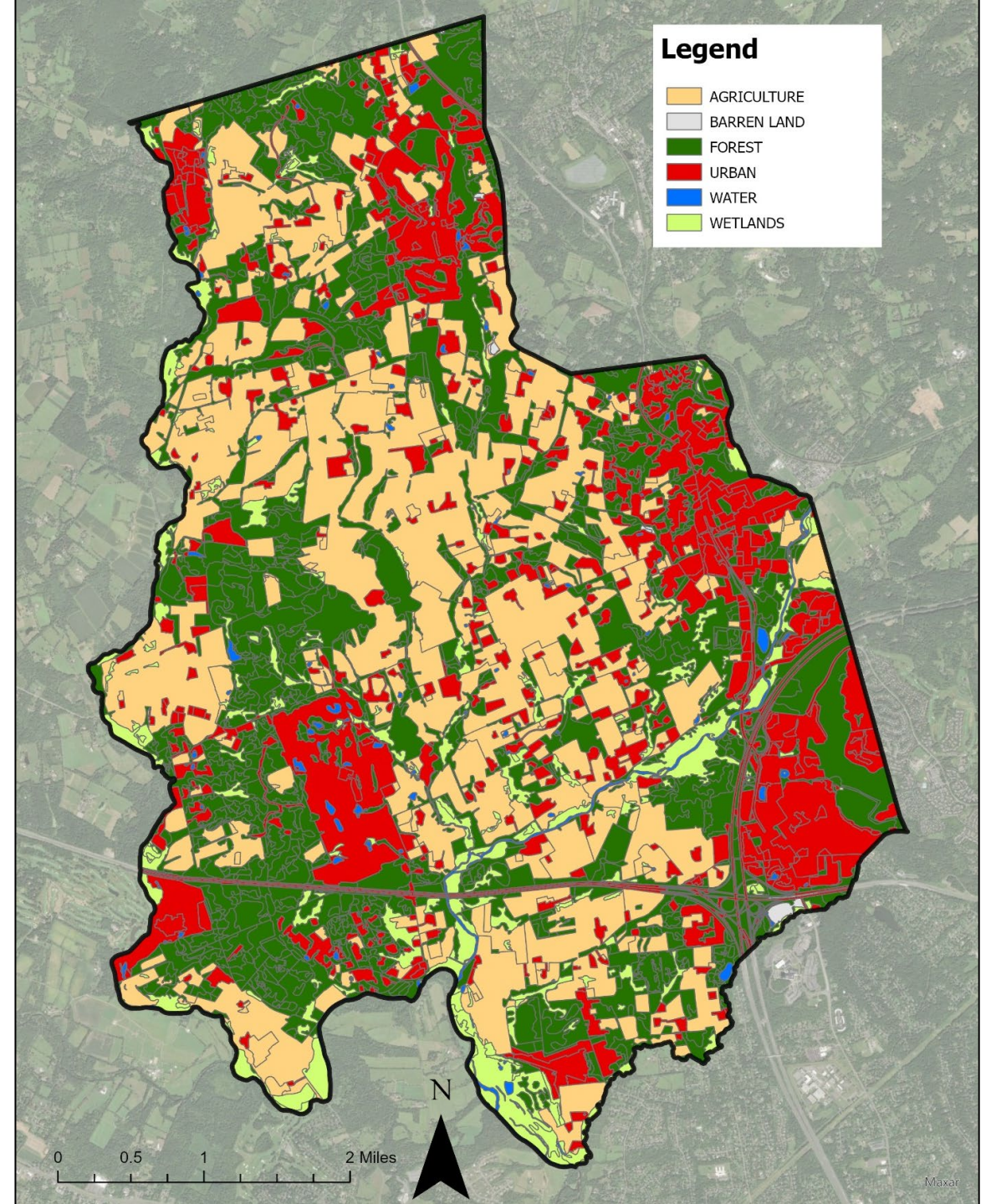
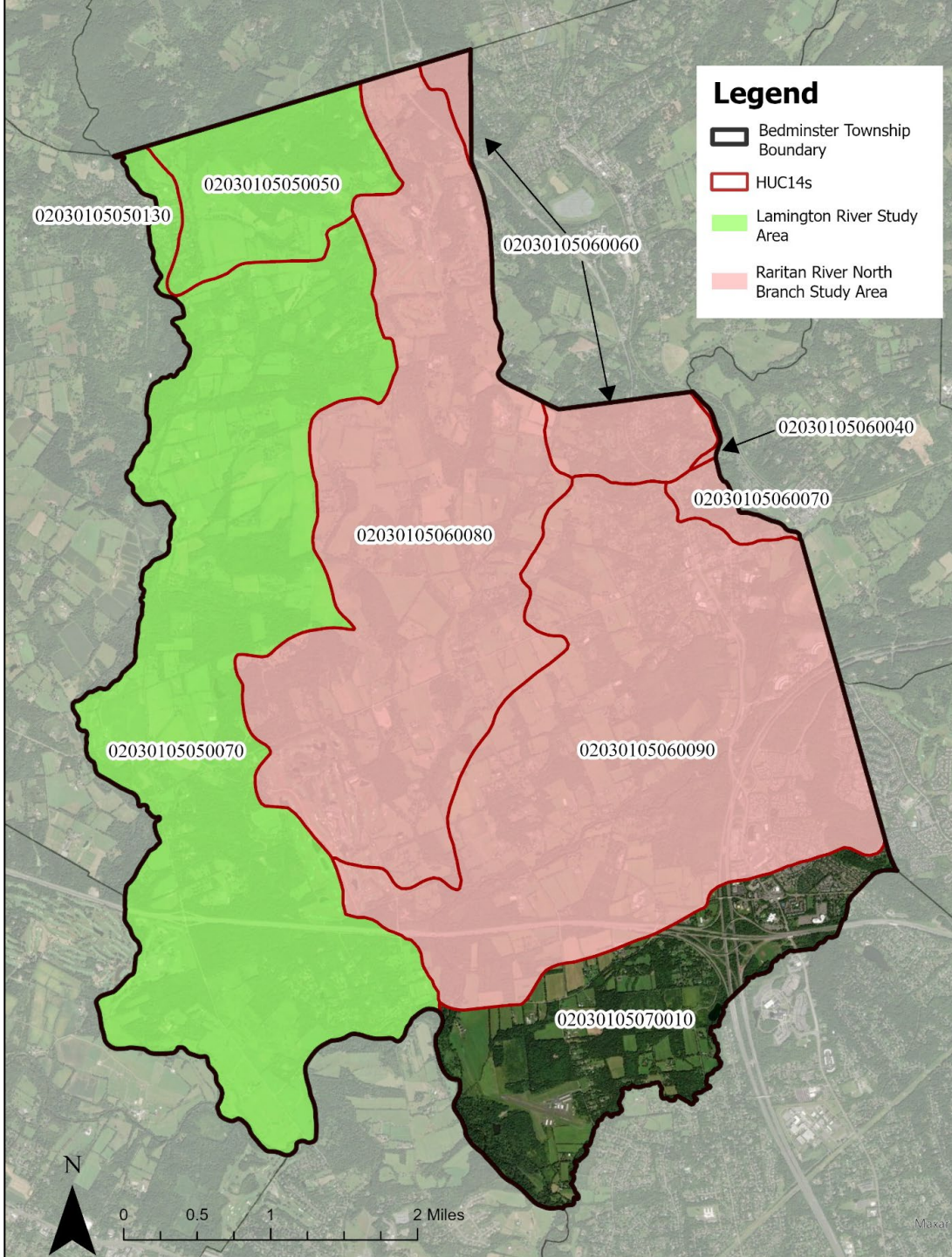
	TP (lbs/yr)
Existing Load	30,489
Load Reduction	5,931
% Load Reduction	19.5%

Analysis by Municipality



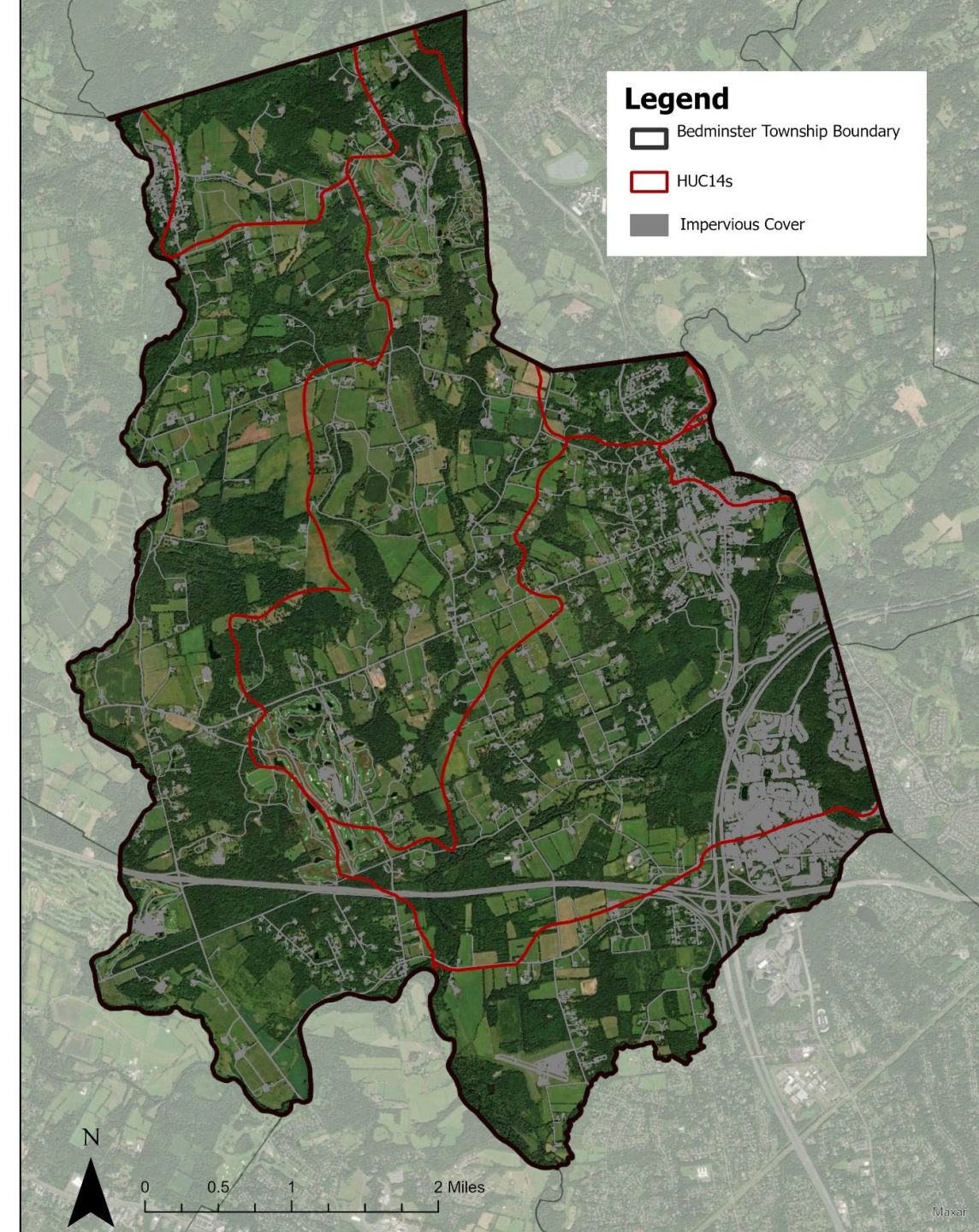
Legend

-  Bedminster Township
-  HUC14s in Raritan River North Branch Study Area
-  HUC14s in Lamington River Study Area
-  Municipalities in Study Area



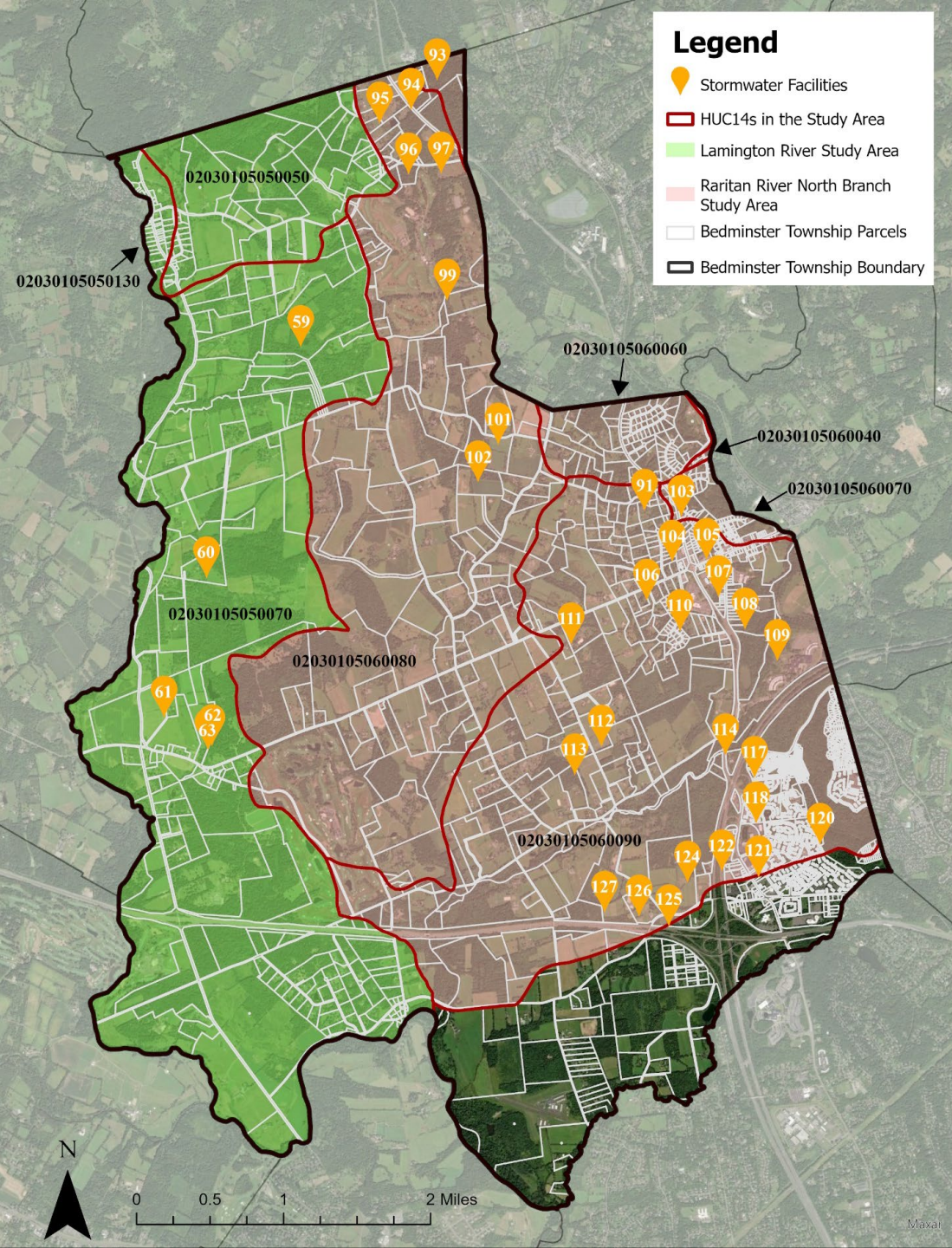
Land Use	Area (acres)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Load (lbs/yr)
02030105050050				
Agriculture	315.8	410.5	3,158.1	94,741.8
Barren Land	0.0	0.0	0.0	0.0
Forest	426.8	42.7	1,280.3	17,070.8
Urban	120.4	168.6	1,806.1	16,856.9
Water	4.8	0.5	14.5	192.7
Wetlands	32.2	3.2	96.7	1,289.4
TOTAL =	900.0	625.5	6,355.7	130,151.6
02030105050070				
Agriculture	1,667.1	2,167.2	16,671.1	500,133.4
Barren Land	0.0	0.0	0.0	0.0
Forest	2,101.8	210.2	6,305.5	84,072.8
Urban	665.7	932.0	9,986.2	93,204.4
Water	70.6	7.1	211.8	2,824.5
Wetlands	312.4	31.2	937.2	12,495.5
TOTAL =	4,817.6	3,347.7	34,111.8	692,730.6

Land Use	Area (acres)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Load (lbs/yr)
All HUC14s				
Agriculture	5,668.6	7,369.2	56,686.5	1,700,596.1
Barren Land	23.8	11.8	118.8	1,423.8
Forest	6,236.6	623.7	18,710.0	249,468.5
Urban	3,670.0	5,138.2	55,051.8	513,816.4
Water	224.0	22.4	672.2	8,962.9
Wetlands	1,052.2	105.2	3,156.5	42,086.8
TOTAL =	16,875.2	13,270.5	134,395.8	2,516,354.5

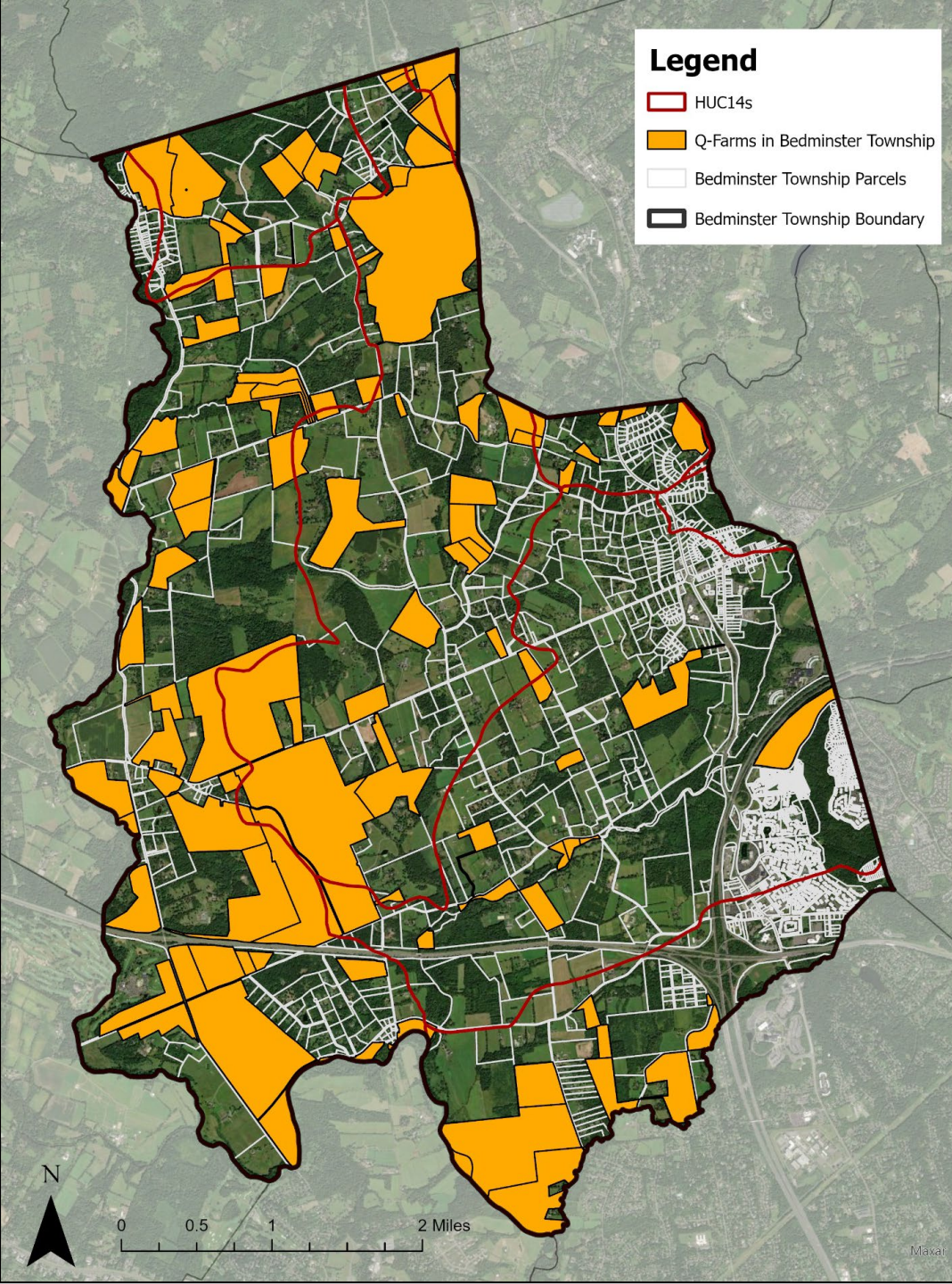


Class	Area (acres)	HUC Impervious Cover (%)
02030105050050		
Building	5.98	
Other	23.81	
Road	13.70	
TOTAL =	43.5	4.8%
02030105050070		
Building	21.88	
Other	109.25	
Road	88.75	
TOTAL =	219.9	4.6%
02030105050130		
Building	3.56	
Other	11.67	
Road	5.63	
TOTAL =	20.9	17.9%
02030105060040		
Building	0.35	
Other	0.54	
Road	1.14	
TOTAL =	2.0	15.7%

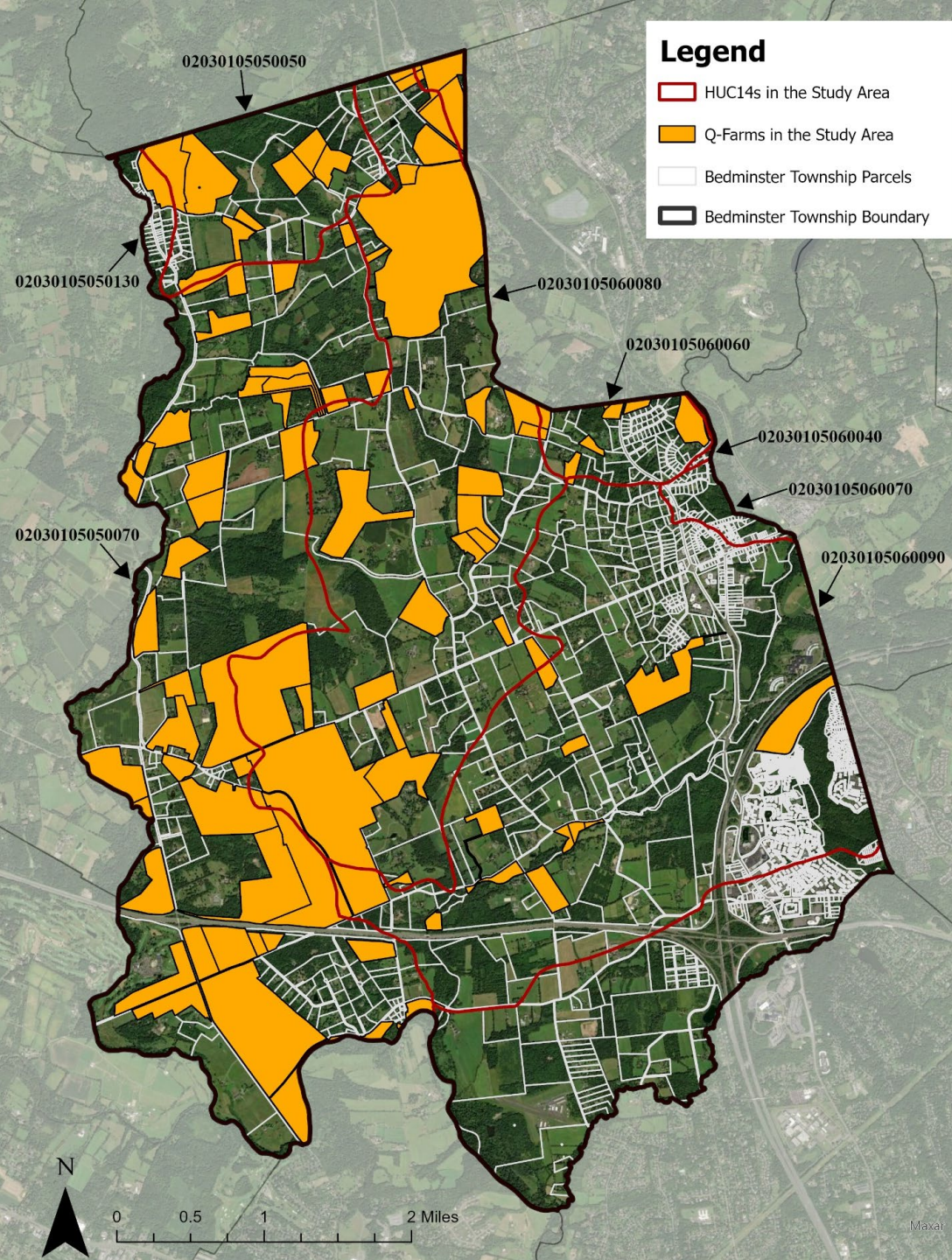
Class	Area (acres)	HUC Impervious Cover (%)
02030105060080		
Building	26.42	
Other	138.41	
Road	51.14	
TOTAL =	216.0	5.3%
02030105060090		
Building	122.30	
Other	223.44	
Road	227.68	
TOTAL =	573.4	12.6%
02030105070010		
Building	42.32	
Other	90.14	
Road	106.69	
TOTAL =	239.2	13.2%
All HUCs		
Building	234.93	
Other	626.09	
Road	515.06	
TOTAL =	1,376.1	8.2%



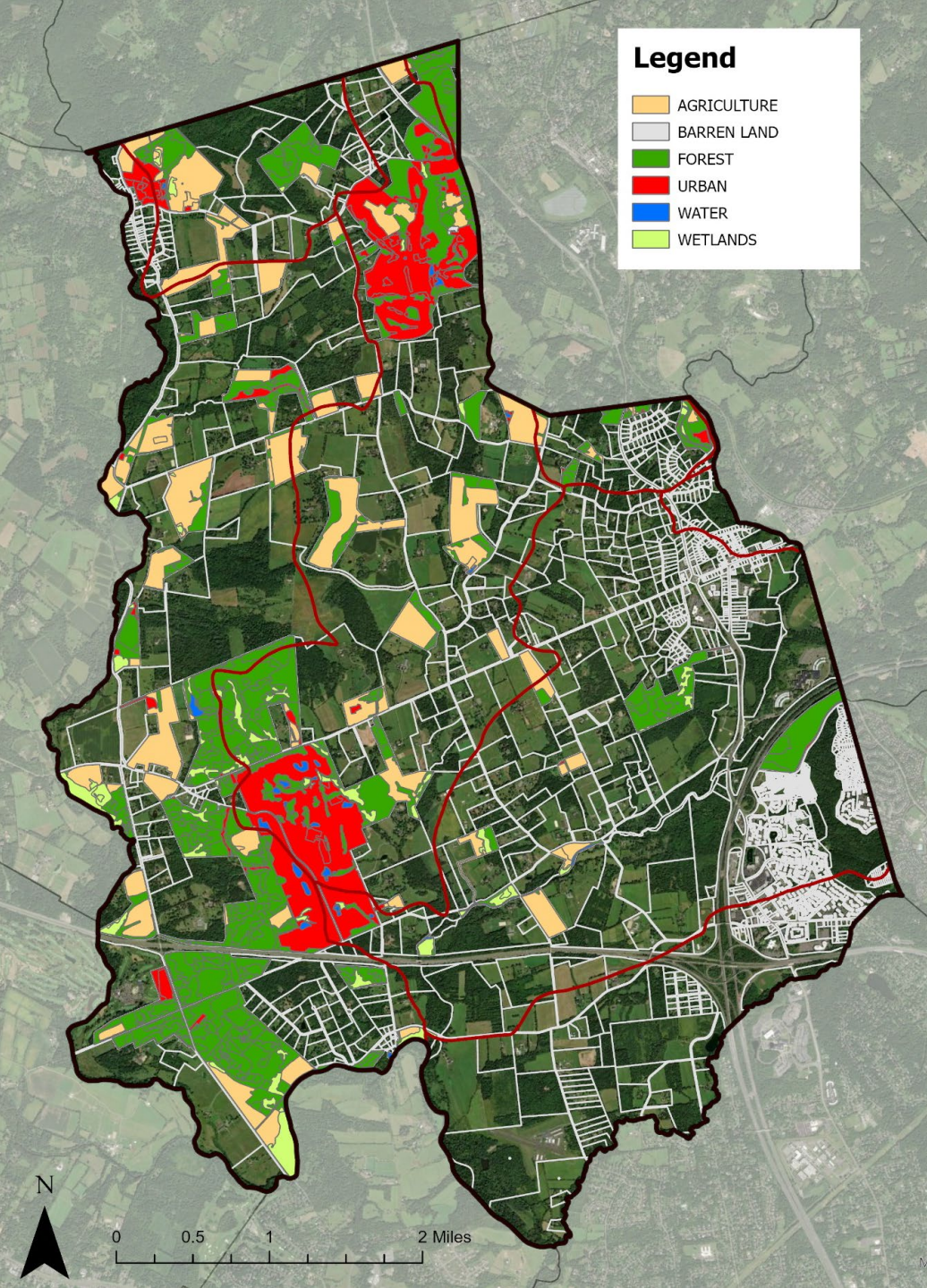
Lamington River Study Area			
ID	Owner	Address	Type
59	Upper Raritan Watershed Assoc.	2121 Larger Cross Road	N
60	Kimberly Ruggels Mell Family Trust	620 Black River Road	N
61	Richards, Andrew H & Cynthia D.	100 Black River Road	N
62	555 Lamington Rd. Holdings LLC	555 Lamington Road	N
63	556 Lamington Rd. Holdings LLC	555 Lamington Road	R
Raritan River North Branch Study Area			
ID	Owner	Address	Type
91	1691 Realty LLC	1691 US Highway 206	D
93	Old Farm Orchards LLC	14 Old Farm Lane	D
94	Old Farm Orchards LLC	3546 US Highway 206	D
95	Church Of the Hills	3545 Route 206	D



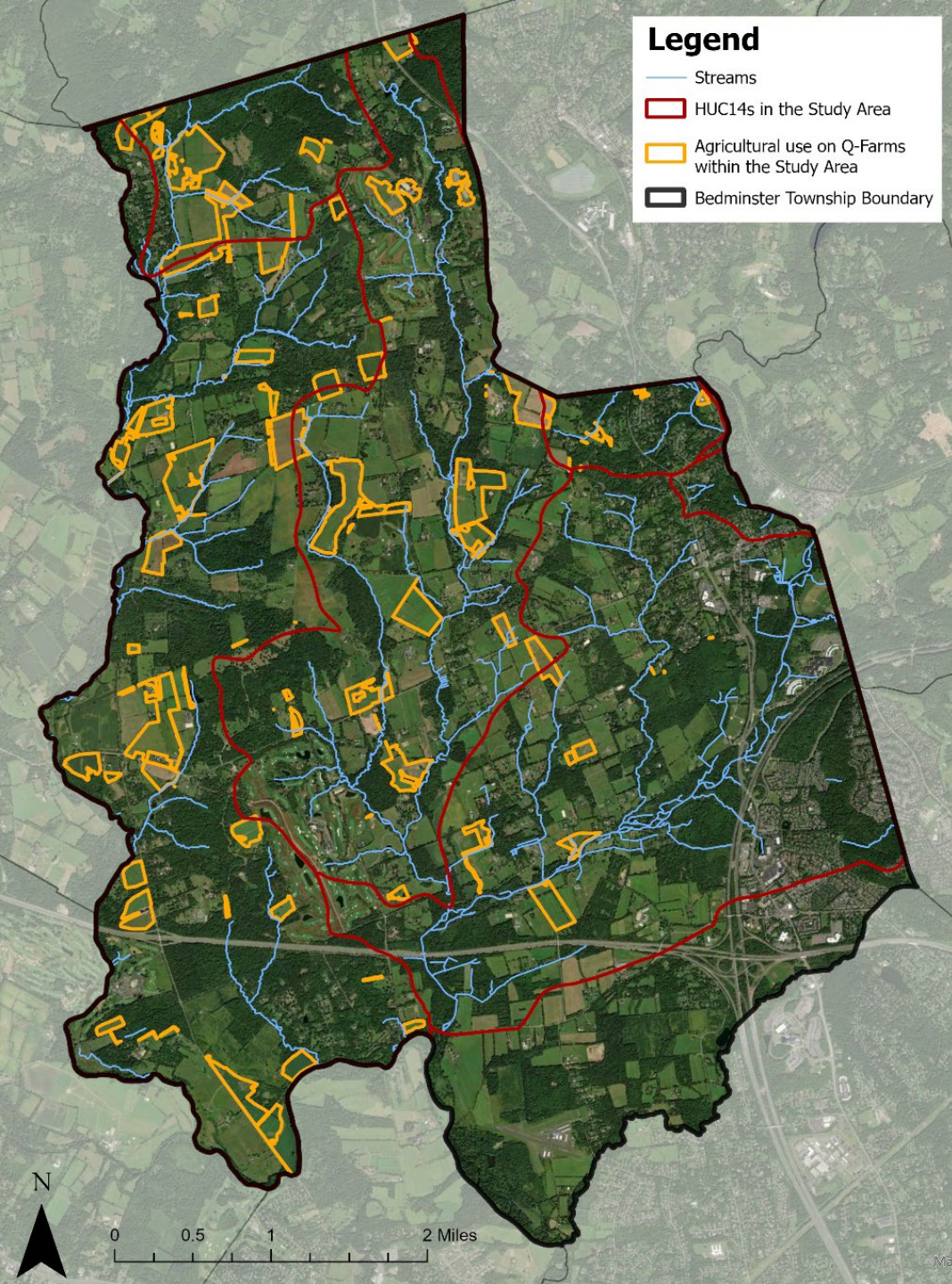
Blk	Lot	Location	Owner	Owner Address
2	1	N Side Pottersville Road	Purnell School	51 Pottersville Rd Box500
2	5	Pottersville Road	Piancone,Louis M.	23 Winterberry Circle
2	5.03	Pottersville Road	Herzog, Melvin E & Mae Emma	89 Brunswick Ave
2	8.03	Windsor Lane	Windsor Meadows Limited Partnership	Po Box 93
2	8.04	Windsor Lane	Uddo, Peter	881 Pottersville Road
2	8.05	Windsor Lane	Uddo, Peter	881 Pottersville Road
5	8	Pottersville Road	The Willow School,Inc.	1150 Pottersville Road
6	1.03	3584 E Side Rt 206	The Seeing Eye Inc	Po Box 375



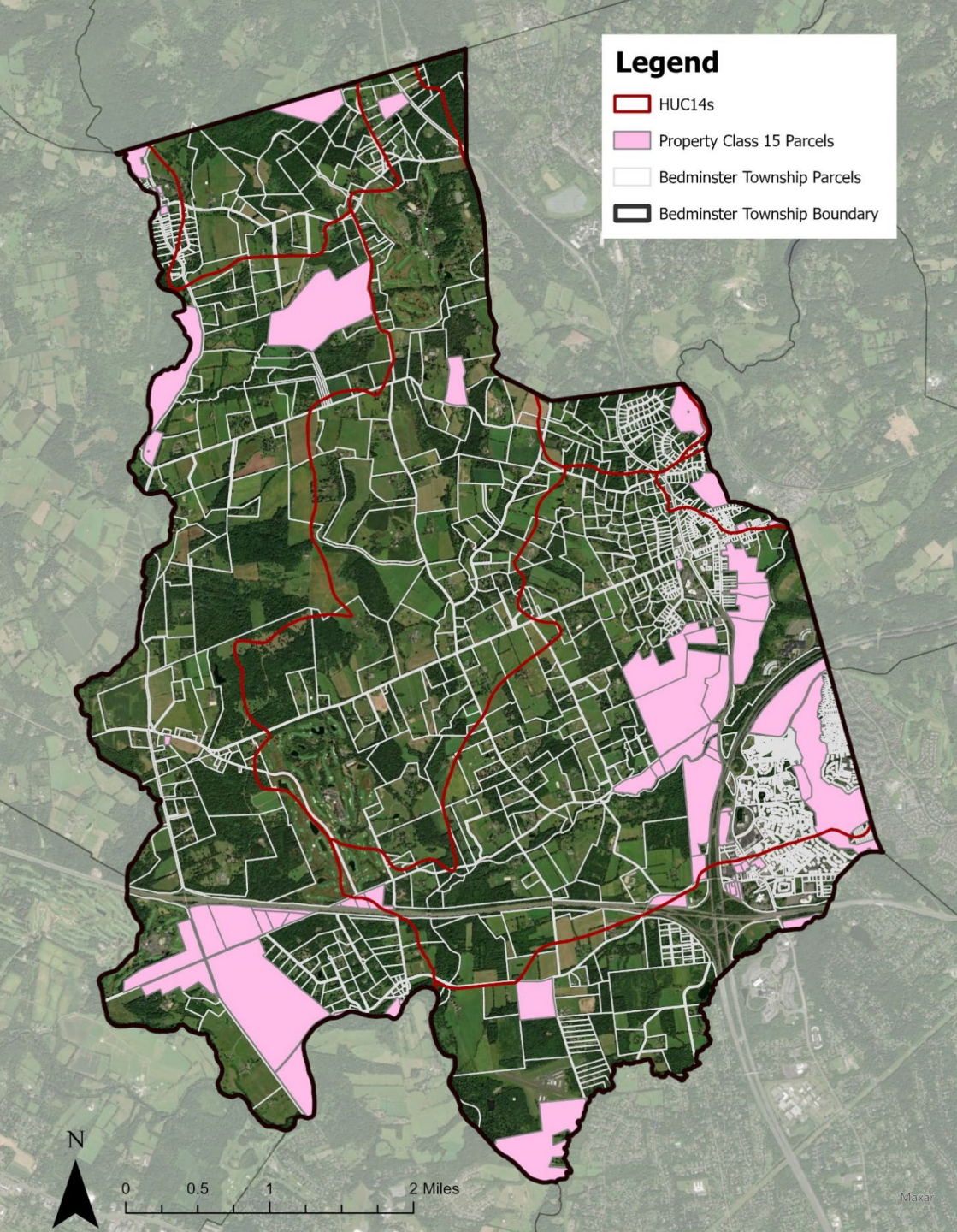
Blk	Lot	Location	Owner	Owner Address
2	1	N Side Pottersville Road	Purnell School	51 Pottersville Rd Box500
2	5	Pottersville Road	Piancone,Louis M.	23 Winterberry Circle
2	5.03	Pottersville Road	Herzog, Melvin E & Mae Emma	89 Brunswick Ave
2	8.03	Windsor Lane	Windsor Meadows Limited Partnership	Po Box 93
2	8.04	Windsor Lane	Uddo, Peter	881 Pottersville Road
2	8.05	Windsor Lane	Uddo, Peter	881 Pottersville Road
5	8	Pottersville Road	The Willow School,Inc.	1150 Pottersville Road
6	1.03	3584 E Side Rt 206	The Seeing Eye Inc	Po Box 375
6	1.04	3630 E Side Sh 206	The Seeing Eye Inc	Po Box 375
6	2	3476 E Side Sh 206	The Seeing Eye Inc	Po Box 375



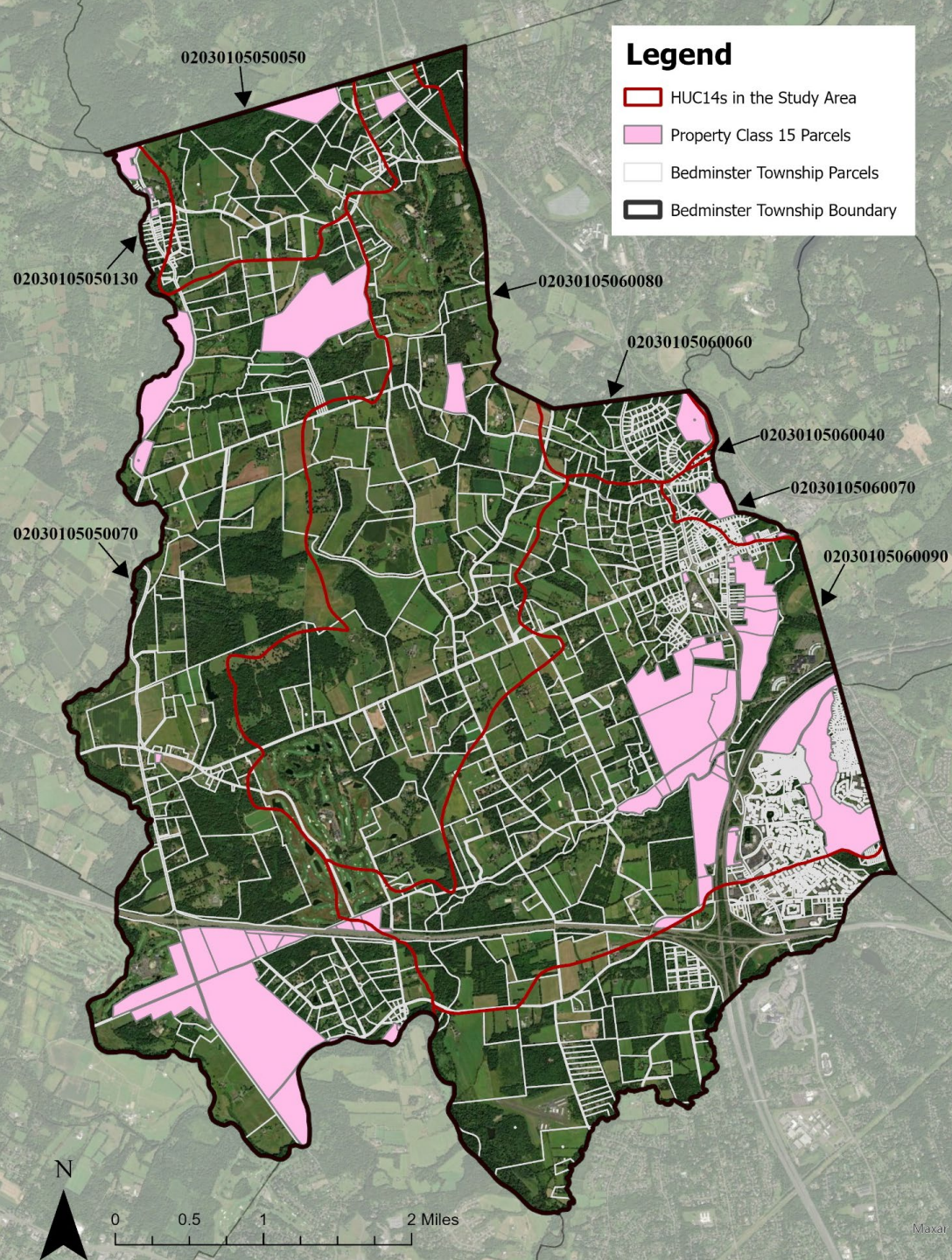
Land Use	Area (acres)
Agriculture	1,004.3
Barren Land	2.6
Forest	1,812.1
Urban	774.1
Water	53.5
Wetlands	193.7
Total:	3,840.3



Blk	Lot	Munic.	Cover Crop	Enhanced Stream Buffer	Impervious Cover Mgt.
1	11	Bedminster Twp	X		
1.08	25	Bedminster Twp	X		
1	13	Bedminster Twp	X		
15	1	Bedminster Twp	X		
14	23	Bedminster Twp	X		
15	9	Bedminster Twp	X		
19	2	Bedminster Twp		X	
19	3	Bedminster Twp		X	
19	14	Bedminster Twp		X	

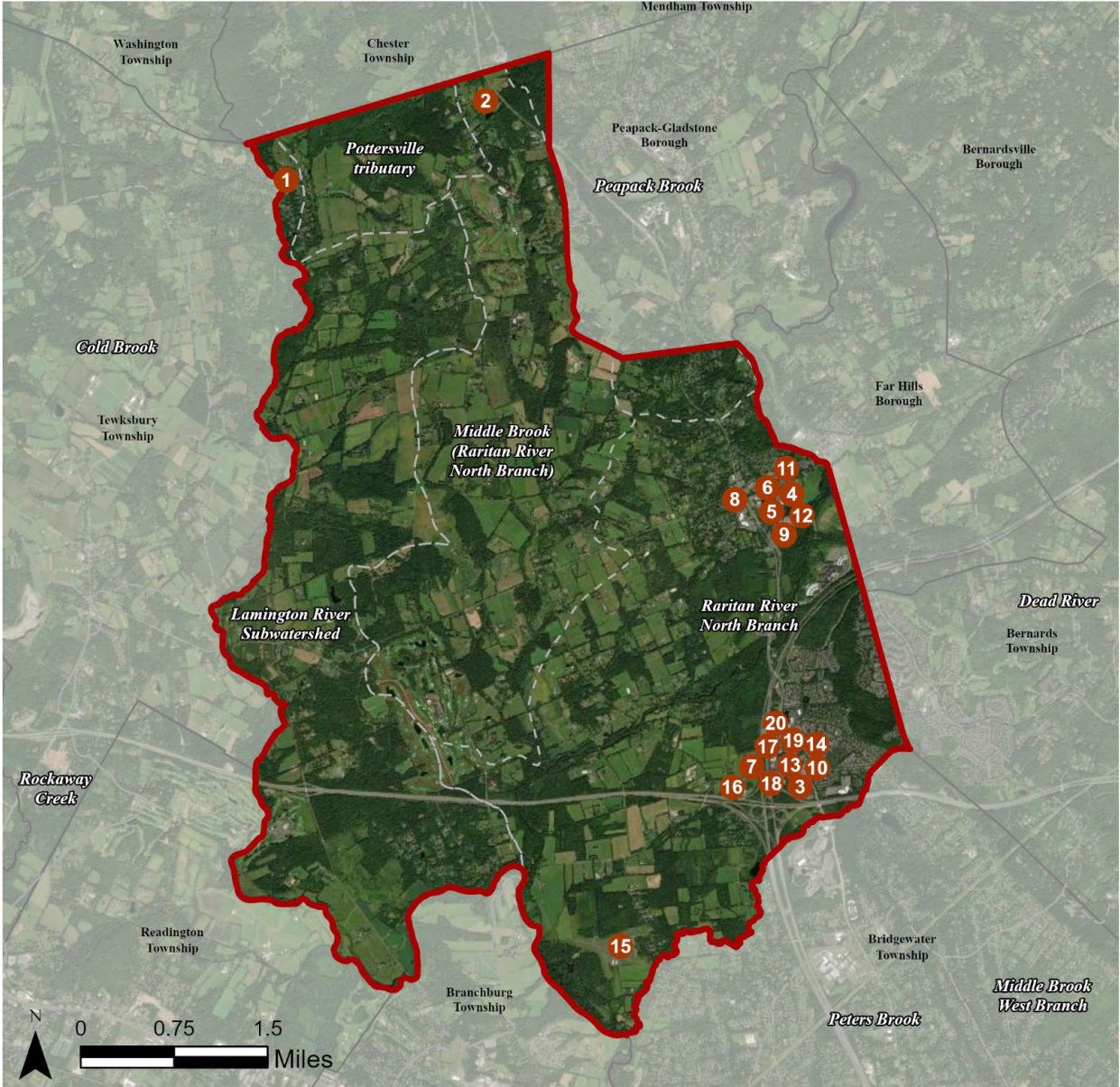


Blk	Lot	Prop Class	Location	Owner	Facility Type
36	1	15A	Somerville Road	Murk, Catherine C.	School
2	1	15B	Pottersville Road	Purnell School	Schools
8	20	15B	2121 Larger Cross Road	Upper Raritan Watershed Assoc.	Educ/Science /Office
38	3	15B	300 Lamington Road	Lamington Presbyterian Church	Schools
61	4	15B	1130 Burnt Mills Road	Forbes, Malcolm S.	School For Autism
62.01	1	15B	1810 Burnt Mills Road	Somerset Hills Learning Institute	School For Autism
5	8	15C	1150 Pottersville Road	The Willow School, Inc.	School
7	22	15C	Black River Road	JLJ Partnership C/O Johnson Off	Vacant Land



Blk	Lot	Prop Class	Location	Owner	Facility Type
*36	1	15A	Somerville Road	Bd Of Ed Of Bedminster Twp	School
2	1	15B	Pottersville Road	Purnell School	Schools
8	20	15B	2121 Larger Cross Road	Upper Raritan Watershed Assoc.	Educ/Science/Office
38	3	15B	300 Lamington Road	Lamington Presbyterian Church	Schools
61 ¹	4	15B	1130 Burnt Mills Road	Forbes, Malcolm S.	School For Autism
*62.01 ¹	1	15B	1810 Burnt Mills Road	Somerset Hills Learning Institute	School For Autism

BEDMINSTER TOWNSHIP: GREEN INFRASTRUCTURE SITES



SITES WITHIN THE LAMINGTON RIVER SUBWATERSHED

- 1. Pottersville Volunteer Fire Company*

SITES WITHIN THE MIDDLE BROOK (RARITAN RIVER NORTH BRANCH) SUBWATERSHED

- 2. Resurgent Church*

SITES WITHIN THE RARITAN RIVER NORTH BRANCH SUBWATERSHED

- 3. Annie's Deli
- 4. Bedminster Public School
- 5. Bedminster Township Municipal Court
- 6. Bedminster USPS
- 7. Burnt Mills Park
- 8. Clarence Dillon Public Library
- 9. Far Hills-Bedminster Fire Department
- 10. Fresh Market
- 11. Grace Chapel*
- 12. Miller Lane Park
- 13. Oasis Day Spa
- 14. Pluckemin USPS
- 15. Somerset Airport
- 16. Somerset Hills Learning Institute
- 17. Sordoni Construction Co
- 18. The Center for Contemporary Art
- 19. The Hills Village Center
- 20. The Pluckemin Inn

*Sites evaluated in 2024 have updated annual rainfall numbers to reflect NJDEP 2023 average annual inches of rainfall per county. These sites also identify HUC14 IDs. The annual rainfall numbers of all other sites reflect NOAA 2000 average annual inches of rainfall per county.

POTTERSVILLE VOLUNTEER FIRE COMPANY



Subwatershed: Lamington River

HUC14 ID: 02030105050130

Site Area: 16,327 sq. ft.

Address: 8 Hacklebarney Road
Pottersville, NJ 07979

Block and Lot: Block 2, Lot 3

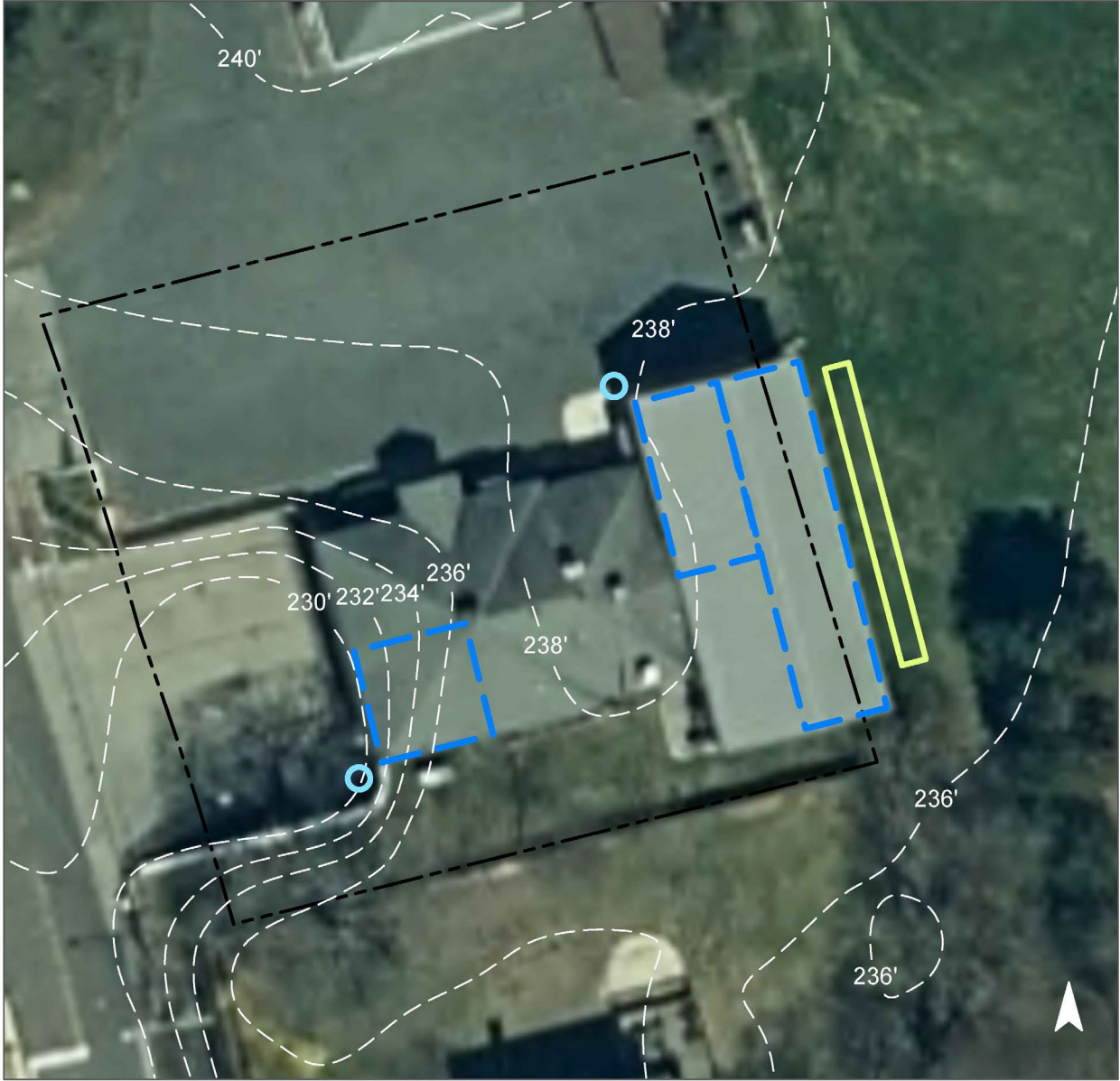


A rain garden can be installed in the grass area to the east of the building to capture, treat, and infiltrate the stormwater runoff from the rooftop. This would require downspout disconnections. Cisterns can be installed to the northeast and southwest of the building to divert and detain the stormwater runoff from the rooftop for later non-potable reuse such as washing vehicles. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure. An underdrain would be required.






Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 49"
94	15,311	0.7	7.7	70.3	0.012	0.47

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	1,155	0.034	6	2,240	0.08	290	\$2,900
Rainwater harvesting	1,085	0.031	4	850	N/A	850 (gal)	\$2,550

GREEN INFRASTRUCTURE RECOMMENDATIONS



Pottersville Volunteer Fire Company

-  bioretention system
-  rainwater harvesting
-  captured drainage area
-  property line
-  2020 Aerial: NJOIT, OGIS



Next Steps

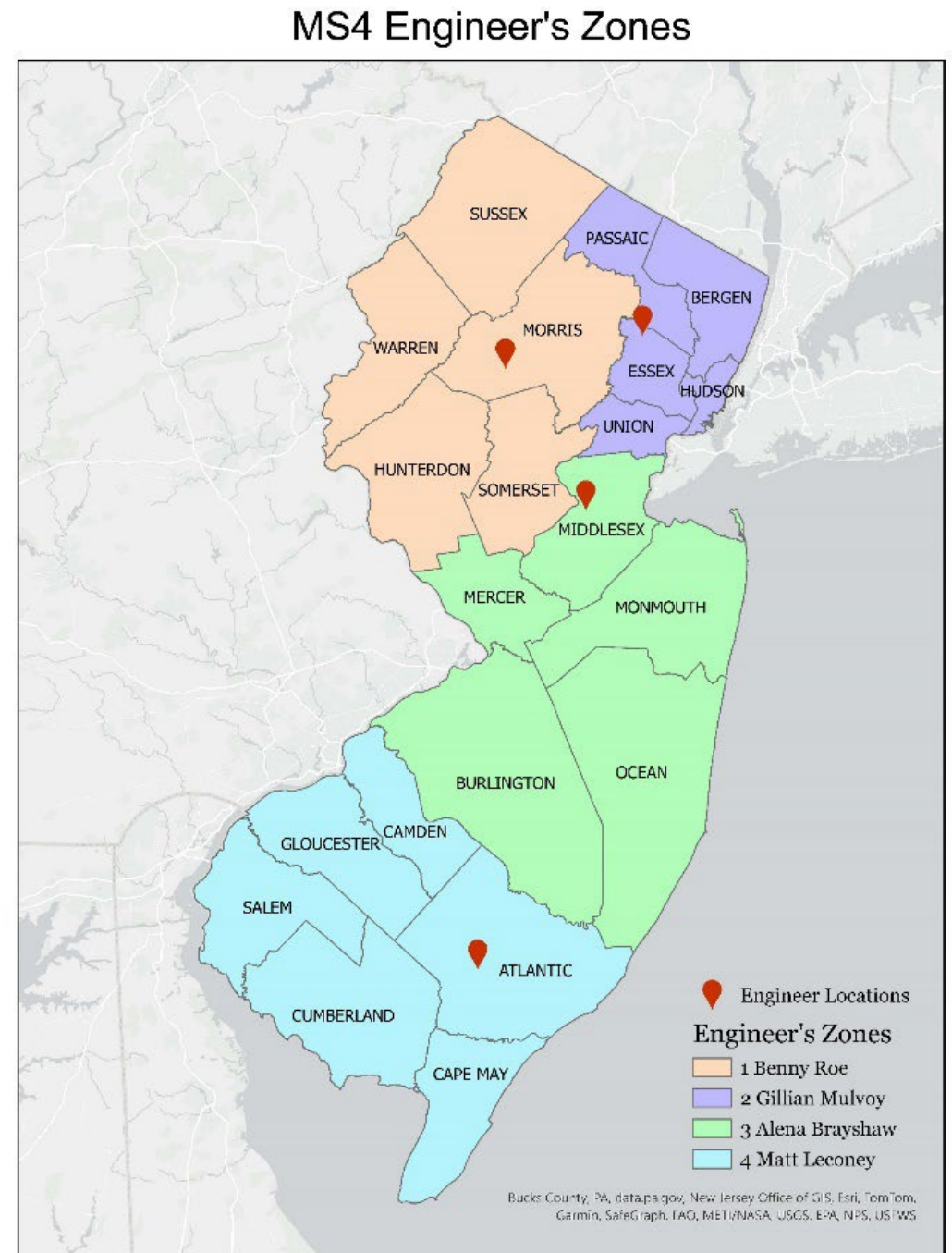
4. Estimation of the amounts of technical and financial assistance needed
5. Development and delivery of informational and education component
6. Development of a schedule for implementing NPS controls
7. Development of interim, measurable milestones
8. Development of criteria to ensure load reductions are being achieved
9. Development of a monitoring component to evaluate effectiveness

How can municipalities use these data?

- MS4 Permit Requirement to Develop a Watershed Improvement Plan
- Mapping is due December 31, 2025
 - Impervious areas will be mapped for the Watershed Restoration and Protection Plan
 - TMDL watershed will be identified and drainage areas to these waters
- Watershed Assessment Report is due December 31, 2026
 - Identification of potential water quality improvement projects
 - Estimate load reduction for each of these projects
- Watershed Improvement Plan Report is due December 31, 2027
 - Summary of potential projects
 - Implementation schedule
 - Project costs

Municipal Stormwater Management Technical Assistance Program

- Three-year agreement w/ NJDEP to support MS4 communities statewide
- Four Regional Engineers
- Provide technical support to all municipalities
 - Focus on former Tier B municipalities



QUESTIONS?

