Clinton Township

Introduction

Located in Hunterdon County in New Jersey, Clinton Township covers about 33.9 square miles. With a population of 13,505 (2020 United States Census), Clinton Township consists of 32.0% of urban land uses by area. Of that urban land use, approximately 52.4% is comprised of rural residential properties (NJDEP Open Data). In addition to residential development, urban land use also includes land used for commercial, industrial, recreational, and transportation purposes. Natural lands (forests, wetlands, and water) make up approximately 50.7% of Clinton Township.

Clinton Township contains portions of eleven subwatersheds (Table 1). There are approximately 99.2 miles of rivers and streams within the municipality; these include Allerton Creek and its tributaries, Beaver Brook and its tributaries, Cramers Creek and its tributaries, tributaries to the North Branch Rockaway Creek, Prescott Brook and its tributaries, South Branch Raritan River and its tributaries, South Branch Rockaway Creek and its tributaries, Spruce Run, and several uncoded tributaries. Clinton Township is within the New Jersey Department of Environmental Protection (NJDEP) Watershed Management Area (WMA) 8 (North and South Branch Raritan).

Table 1: Subwatersheds of Clinton Township

Subwatershed	HUC14
Raritan River South Branch (Stone Mill gage to Califon)	02030105010070
Raritan River South Branch (Spruce Run-Stone Mill gage)	02030105010080
Spruce Run Reservoir / Willoughby Brook	02030105020040
Beaver Brook (Clinton)	02030105020050
Raritan River South Branch (River Road to Spruce Run)	02030105020070
Raritan River South Branch (Prescott Brook to River Road)	02030105020080
Prescott Brook / Round Valley Reservoir	02030105020090
Pleasant Run	02030105040020
Rockaway Creek (above McCrea Mills)	02030105050080
Rockaway Creek (below McCrea Mills)	02030105050090

Rockaway Creek South Branch	02030105050100

The purpose of this report is to provide a comprehensive understanding of key, defining features within the subwatersheds throughout Clinton Township. This involves gathering, organizing, and presenting information about existing conditions and infrastructure within each subwatershed. It aims to serve as a tool for informed decision-making, planning, and implementation of sustainable watershed management strategies aimed to protect and enhance the health of the watershed, its associated ecosystems, and the surrounding communities.

A geographic information system (GIS) was used to visualize data pertaining to the existing stormwater infrastructure, land cover, watershed delineation, and water quality classification and impairments within separate layers. Datasets from the New Jersey Department of Environmental Protection's (NJDEP's) GIS database was used to populate the watershed inventory map, from which the relevant data were isolated. Datasets representing Clinton Township's existing stormwater infrastructure were provided by the municipality and were manipulated, if necessary, for the specific purposes of this report.

Analysis by Municipality

An analysis was completed by municipality. Figure 1 shows Clinton Township in relation to the study area. Figure 2 shows the portions of the eleven HUC14s in Clinton Township and highlights the HUC14s that are contained within the study area. Figure 3 illustrates the land use in Clinton Township. A detailed land use analysis and nonpoint source loading analysis was completed for each HUC14 in Clinton Township and is presented in Table 2. Figure 4 shows the impervious cover in Clinton Township based upon NJDEP's 2015 impervious cover layer. An impervious cover analysis was completed for each HUC14 in Clinton Township and is presented in Table 3.

For the area of the municipality in the study area, a stormwater facilities analysis was completed (see Figure 5). Two sources were used to identify stormwater facilities. The first data source was the New Jersey Hydrologic Modeling Database (SCS, 2024) that was prepared by the Soil Conservation Districts (SCD) and Rutgers University. The second data source was the NJDEP 2020 land use/land cover GIS Layer. Land use data uses a land use code (1499) to identify stormwater basins. Each stormwater basin was inspected (see Table 4). The detention basins in Table 4 (identified as type "D") could benefit from naturalization (i.e., conversion from a detention basin to a bioretention basin). Detention basins that are already naturalized are identified as type "N". The retention basins in Table 4 (identified as type "R") could benefit from the addition of vegetative shoreline buffers. Retention basins that already have a vegetative shoreline buffer are listed as type "RB". Only detention basins and naturalized detention basins were identified in Clinton Township within the study area.

The Q-Farms in Clinton Township have been identified (see Figure 6). Table 5 presents the data available for each Q-Farm parcel. Q-Farms are the parcels that have been qualified for farmland tax assessment. The Q-Farms in the study area of Clinton Township have been identified (see Figure 7 and Table 6). It is important to note that the land use on a Q-Farm is often not all agriculture. Figure 8 illustrates the land use on the Q-Farms, which is summarized in Table 7.

There are 3,636.5 acres of agricultural land use in Clinton Township, of which, 66.2 acres lie within the study area for this Watershed Restoration and Protection Plan. There are 17 Q-Farms and a portion of one Q-Farm parcel in the study area portion of Clinton Township, totaling 212.2 acres. Within the 17 Q-Farms and portion of one Q-Farm, there are approximately 45.9 acres of agricultural land use. Aerial photography (see Figure 9) was used to identify areas where riparian buffers may be able to be enhanced to further protect the waterways from agricultural impacts. Based upon the aerial photograph and site visits, there are no recommendations for green infrastructure implementation on the agricultural lands in the study area in Clinton Township.

The impervious cover analysis was used to calculate targets for areas of rooftops to be treated with rain gardens and length of roadways to be managed with bioswales. Two HUC14s are included in the study area (02030105010070, 02030105010080). Within these two HUC14s, there are 34.2 acres of buildings and 75.6 acres of roadway. The Watershed Restoration and Protection Plan recommends managing stormwater runoff from ¼ of 25% of the building rooftops. For the study area within Clinton Township, approximately 2.1 acres of rooftop runoff would be managed with 0.43 acres of rain gardens. The plan also calls for the management of 10% of the roadways with bioswales. For the study area within Clinton Township, approximately 7.6 acres of roadway would be managed, or 2.1 miles of roadway.

Finally, the parcel data was used to identify parcels that are classified as Property Class 15. Property Class 15 parcels are tax-exempt, and include six subcategories:

15A – Public School Property

15B- Other School Property

15C- Public Property

15D- Church and Charitable Property

15E- Cemeteries and Graveyards

15F- Other Exempt

The Property Class 15 parcels for Clinton Township are shown in Figure 10 and presented in Table 8. When the municipality develops their Watershed Improvement Plan to satisfy their Municipal Separate Storm Sewer System (MS4) permit, these are the first sites that are assessed for opportunities to install watershed improvement projects. This assessment was completed for the Property Class 15 parcels in the study area (see Figure 11). Available information for each parcel in the study area is presented in Table 9. Class 15E parcels were excluded from the assessment. Two of these properties offer opportunities to be retrofitted with green infrastructure to help reduce pollutant loads. These properties are identified in Table 9 and represent watershed improvement projects that can be included in the municipality's Watershed Improvement Plan. Figure 12 shows parcels within the entire municipality that offer opportunities to be retrofitted with green infrastructure. These sites are included in the Impervious Cover Reduction Action Plan that was completed by the RCE Water Resources Program for the municipality.

Water Quality Classification

The New Jersey Department of Environmental Protection (NJDEP) Surface Water Quality Standards (SWQS) are regulations that govern the water quality goals and pollution limitations

for surface waters in New Jersey. Surface waters are classified based on their designated uses, such as drinking water supply, aquatic life habitat, recreation, or shellfish harvesting. The SQWS are used to protect those uses and guide permitting, monitoring, and water quality restoration efforts.

Under the SWQS, freshwaters are classified as Fresh Water 1 (FW1), Fresh Water 2 (FW2), or Pinelands (PL). FW1 waters are nondegradation waters with unique ecological significance, in which man-made wastewater discharges are not permitted. FW2 waters are all other freshwaters except for Pinelands waters. FW2 waters are further classified based on their ability to support trout. Trout Production waters (TP) are designated for use by trout for spawning or nursery purposes during their first summer. Trout Maintenance waters (TM) are designated for the support of trout throughout the year. Nontrout waters (NT) are generally unsuitable for trout due to their physical, chemical, or biological characteristics. Pinelands waters – which may be either fresh or saline waters – are surface waters within the Pinelands Protection and Preservation areas.

Saline waters that are not PL are classified under the SWQS as either Saline Estuarine (SE) or Saline Coastal (SC). SE waters are further classified based on their ability to support recreation, shellfish harvesting, and warm water fish species. SE1 waters have the highest protection within the SE category, and must support the maintenance, migration, and propagation of fish and aquatic life, as well as shellfish harvesting. SE2 waters must support the maintenance, migration, and propagation of fish and aquatic life but do not need to support shellfish harvesting. SE3 waters must support the migration of fish but do not need to support permanent aquatic biota populations or shellfish harvesting. Some coastal waters have dual classifications where the waters change from freshwater to saltwater as they drain into the estuary or ocean.

Finally, there are three antidegradation classifications assigned to all New Jersey surface waters. Outstanding National Resource Waters (ONRW) is the most protective classification and applies to all F1 and PL waters. No degradation is permitted in ONRW waters. Category One waters (C1) are protected from any measurable change to existing water quality because of their exceptional ecological significance, exceptional recreational significance, exceptional water supply significance, or exceptional fisheries resources. Category Two waters (C2) permit some measurable degradation in water quality, but the changes must be limited and justified. C2 is the default classification for all surface waters that are not categorized as F1, PL, or C1.

There are four classifications that apply to the streams in Clinton Township. Figure 13 depicts the water quality classifications of surface waters throughout Clinton Township and Table 10 summarizes the total miles and percentage of each surface water quality classification in the municipality.

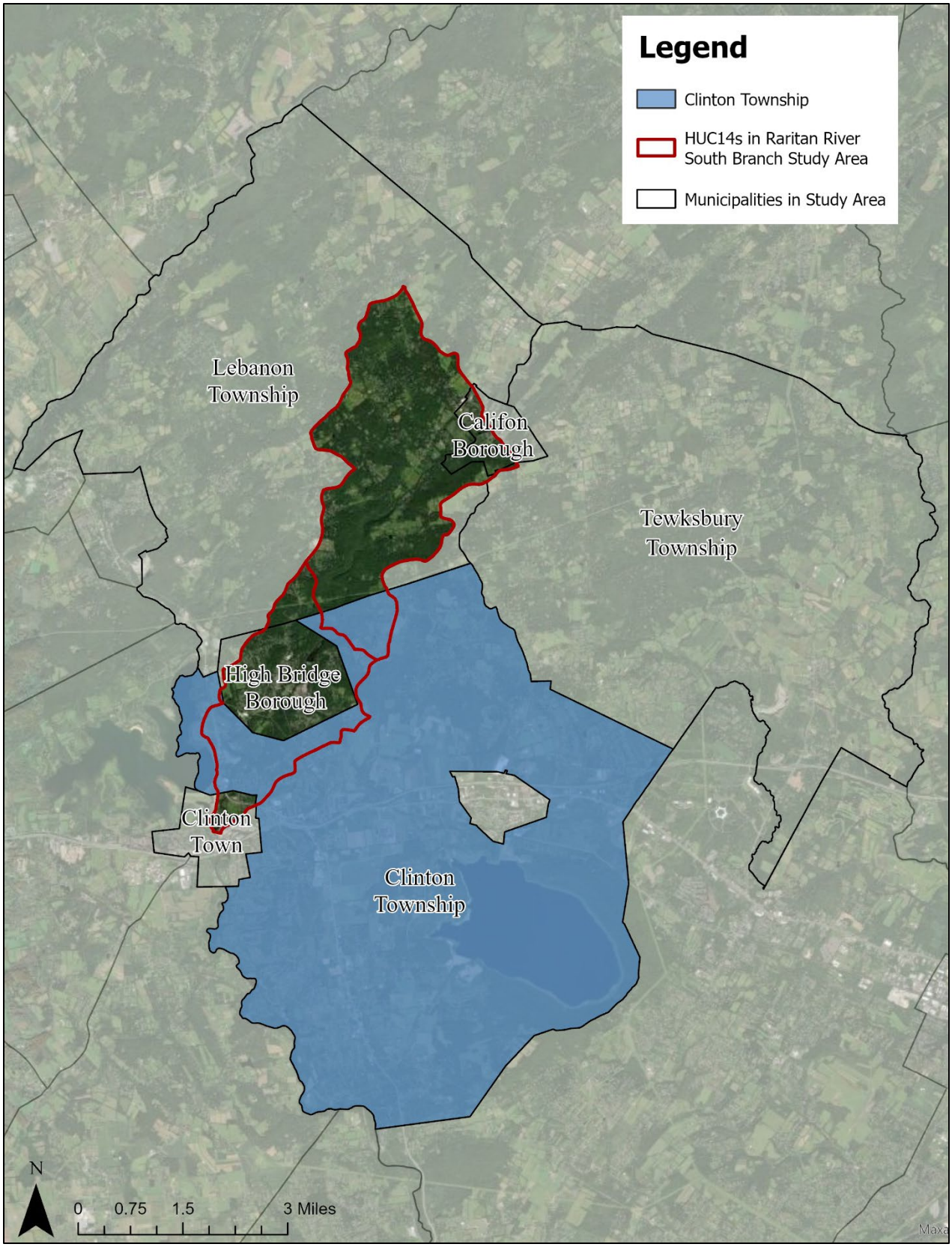


Figure 1: Municipalities in the Study Area

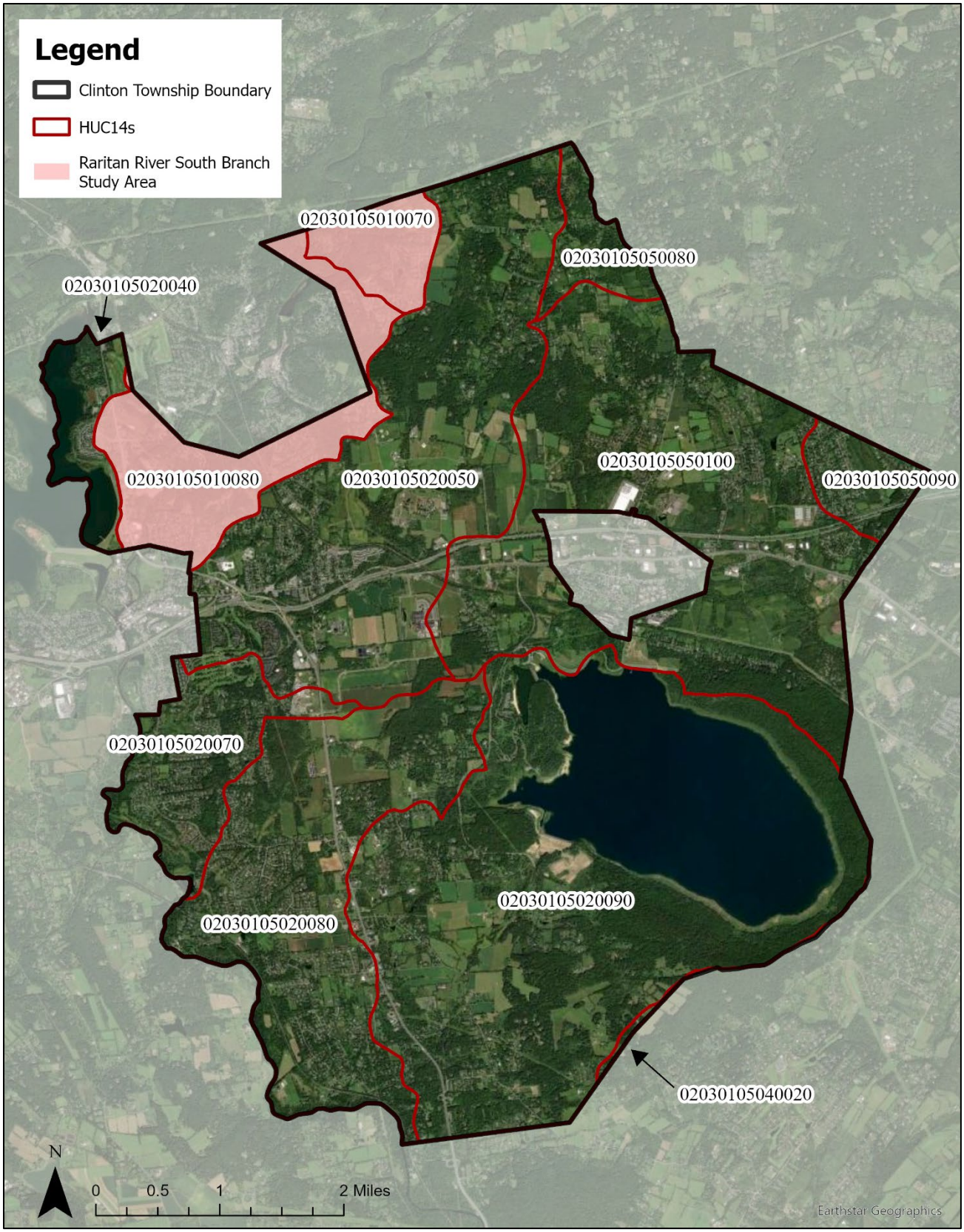


Figure 2: Portions of eleven HUC14s are in Clinton Township

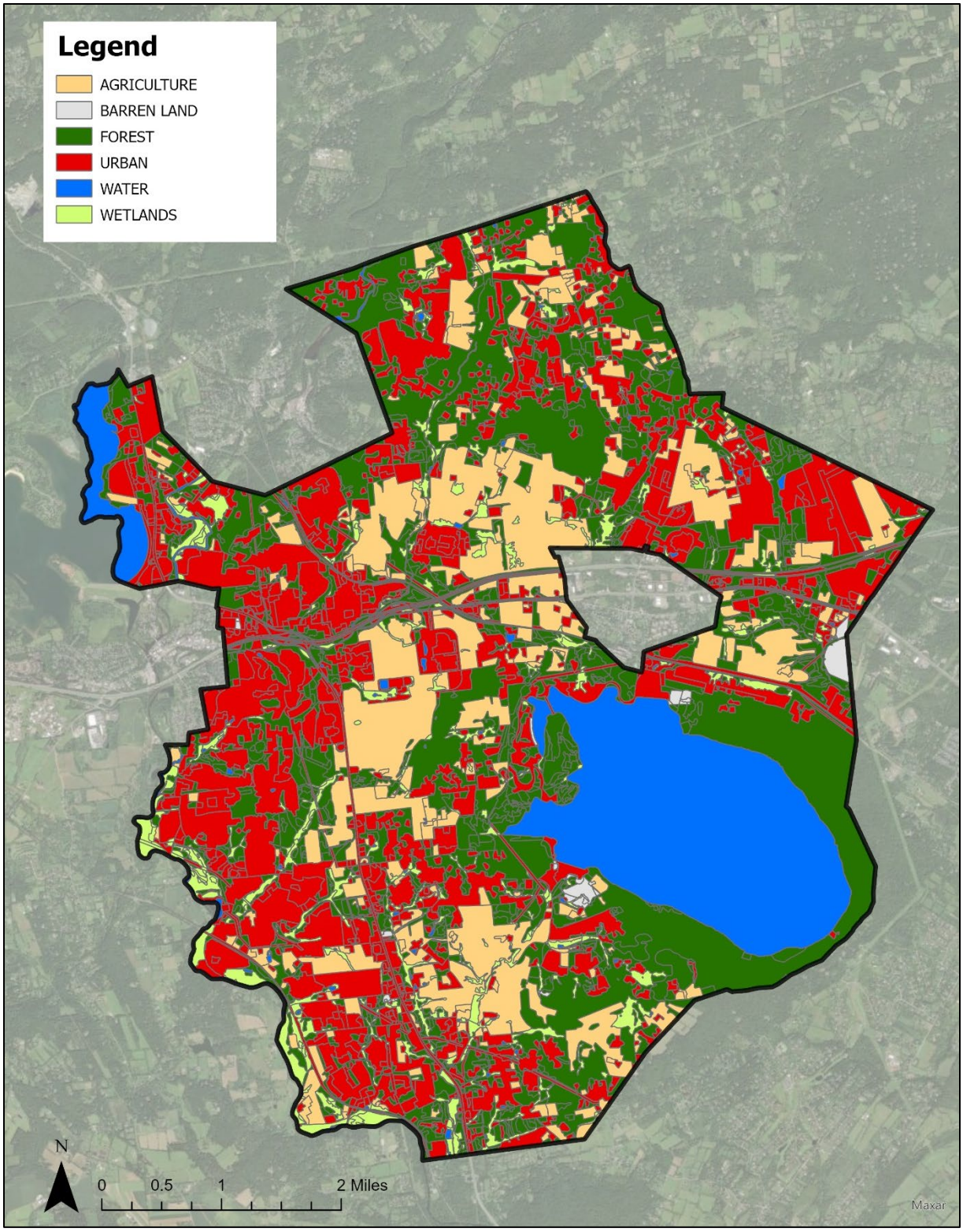


Figure 3: Land Use in Clinton Township

Table 2: Land Use Analysis and Nonpoint Source Loading Analysis by HUC14 for Clinton Township

Land Use Type	Area (acres)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Load (lbs/yr)
02030105010070				
Agriculture	25.8	33.5	258.0	7,739.3
Barren Land	0.0	0.0	0.0	0.0
Forest	198.1	19.8	594.3	7,924.4
Urban	167.8	234.9	2,516.7	23,489.1
Water	6.6	0.7	19.8	264.1
Wetlands	18.9	1.9	56.8	756.8
TOTAL =	**417.2**	**290.8**	**3,445.6**	**40,173.8**
02030105010080				
Agriculture	40.4	52.5	404.2	12,125.8
Barren Land	0.0	0.0	0.0	0.5
Forest	444.9	44.5	1,334.7	17,796.6
Urban	568.5	795.9	8,527.8	79,592.8
Water	19.5	1.9	58.4	778.0
Wetlands	61.8	6.2	185.5	2,473.2
TOTAL =	**1,135.1**	**901.1**	**10,510.6**	**112,766.9**
02030105020040				
Agriculture	9.7	12.5	96.5	2,895.7
Barren Land	0.0	0.0	0.0	0.0
Forest	71.9	7.2	215.6	2,874.1
Urban	134.1	187.7	2,011.2	18,770.9
Water	242.1	24.2	726.4	9,685.7
Wetlands	1.0	0.1	3.1	41.7
TOTAL =	**458.8**	**231.8**	**3,052.8**	**34,268.1**
02030105020050				
Agriculture	1,153.7	1,499.8	11,536.7	346,101.7
Barren Land	2.3	1.1	11.4	137.3
Forest	1,245.7	124.6	3,737.1	49,827.8
Urban	1,433.2	2,006.5	21,498.3	200,650.8
Water	32.0	3.2	96.1	1,281.5
Wetlands	162.9	16.3	488.6	6,515.0
TOTAL =	**4,029.8**	**3,651.5**	**37,368.3**	**604,514.1**
02030105020070				
Agriculture	38.9	50.6	389.0	11,670.9
Barren Land	0.0	0.0	0.0	0.0
Forest	208.5	20.8	625.4	8,338.6
Urban	600.3	840.4	9,004.4	84,041.0
Water	25.4	2.5	76.3	1,017.0
Wetlands	112.6	11.3	337.7	4,503.3

TOTAL =	**985.7**	**925.6**	**10,432.8**	**109,570.8**
02030105020080				
Agriculture	555.7	722.4	5,557.1	166,712.2
Barren Land	3.0	1.5	15.0	180.6
Forest	776.8	77.7	2,330.3	31,070.7
Urban	1,213.0	1,698.2	18,194.8	169,818.0
Water	32.3	3.2	96.9	1,292.2
Wetlands	262.1	26.2	786.2	10,482.1
TOTAL =	**2,842.8**	**2,529.2**	**26,980.3**	**379,555.8**
02030105020090				
Agriculture	731.2	950.5	7,311.9	219,356.6
Barren Land	42.4	21.2	212.0	2,543.6
Forest	2,290.9	229.1	6,872.8	91,637.1
Urban	1,031.6	1,444.3	15,474.3	144,427.1
Water	2,314.7	231.5	6,944.2	92,589.8
Wetlands	265.8	26.6	797.5	10,632.9
TOTAL =	**6,676.7**	**2,903.2**	**37,612.7**	**561,187.0**
02030105040020				
Agriculture	8.1	10.5	80.9	2,428.1
Barren Land	0.0	0.0	0.0	0.0
Forest	14.5	1.5	43.5	580.5
Urban	8.8	12.3	131.3	1,225.6
Water	0.0	0.0	0.0	0.0
Wetlands	0.0	0.0	0.0	0.0
TOTAL =	**31.4**	**24.2**	**255.8**	**4,234.2**
02030105050080				
Agriculture	43.9	57.0	438.8	13,163.2
Barren Land	0.0	0.0	0.0	0.0
Forest	202.7	20.3	608.0	8,106.2
Urban	113.5	158.9	1,702.7	15,891.7
Water	1.0	0.1	3.0	39.4
Wetlands	0.5	0.1	1.6	21.1
TOTAL =	**361.6**	**236.4**	**2,754.0**	**37,221.6**
02030105050090				
Agriculture	77.6	100.8	775.6	23,266.6
Barren Land	0.0	0.0	0.0	0.0
Forest	40.5	4.0	121.4	1,618.7
Urban	248.1	347.3	3,721.5	34,734.2
Water	0.4	0.0	1.1	14.6
Wetlands	5.8	0.6	17.3	231.1
TOTAL =	**372.3**	**452.8**	**4,636.9**	**59,865.2**
02030105050100				
Agriculture	951.7	1,237.2	9,516.7	285,500.1

Barren Land	58.8	29.4	294.2	3,529.9
Forest	1,784.4	178.4	5,353.1	71,374.0
Urban	1,432.3	2,005.2	21,484.5	200,522.4
Water	26.4	2.6	79.3	1,057.9
Wetlands	134.2	13.4	402.7	5,369.8
TOTAL =	**4,387.8**	**3,466.3**	**37,130.5**	**567,354.2**
All HUCs				
Agriculture	3,636.5	4,727.5	36,365.3	1,090,960.2
Barren Land	106.5	53.3	532.7	6,392.0
Forest	7,278.7	727.9	21,836.1	291,148.6
Urban	6,951.2	9,731.6	104,267.5	973,163.7
Water	2,700.5	270.1	8,101.5	108,020.2
Wetlands	1,025.7	102.6	3,077.0	41,027.1
TOTAL =	**21,699.1**	**15,612.9**	**174,180.2**	**2,510,711.7**

Impervious Cover Analysis

NJDEP's Open Data impervious surface GIS data layer depicts surfaces throughout Clinton Township that have been covered with materials that are highly resistant to infiltration by water, rendering them impervious. These surfaces include rooftops, roadways, sidewalks, and other paved areas. These impervious cover values were used to estimate the impervious coverage for Clinton Township. Based upon the NJDEP impervious surface data, Clinton Township has impervious cover totaling 9.7%. Table 3 shows impervious cover for each HUC14. The extent of the impervious cover in Clinton Township is shown in Figure 4.

The literature suggests a link between impervious cover and stream ecosystem impairment (Schueler, 1994; Arnold and Gibbons, 1996; May et al., 1997). Impervious cover may be linked to the quality of lakes, reservoirs, estuaries, and aquifers (Caraco et al., 1998), and the amount of impervious cover in a watershed can be used to project the current and future quality of streams. Based on scientific literature, Caraco et al. (1998) classified urbanizing streams into the following three categories: sensitive streams, impacted streams, and non-supporting streams.

Schueler (1994, 2004) developed an impervious cover model that classified "sensitive streams" as typically having a watershed impervious surface cover from 0-10%. "Impacted streams" have a watershed impervious cover ranging from 11-25% and typically show clear signs of degradation from urbanization. "Non-supporting streams" have a watershed impervious cover of greater than 25%; at this high level of impervious cover, streams are simply conduits for stormwater flow and no longer support a diverse stream community.

Schueler et al. (2009) reformulated the impervious cover model based upon new research that had been conducted. This analysis determined that stream degradation was first detected at 2 to 15% impervious cover. The updated impervious cover model recognizes the wide variability of stream degradation at impervious cover below 10%. The updated model also moves away from having a fixed line between stream quality classifications. For example, 5 to 10% impervious cover is included for the transition from sensitive to impacted, 20 to 25% impervious cover for

the transition between impacted and non-supporting, and 60 to 70% impervious cover for the transition from non-supporting to urban drainage.

Based upon this information, Clinton Township's impervious cover percentage would suggest that its waterways are primarily sensitive and most likely preventing degradation of the state's surface water quality standards.

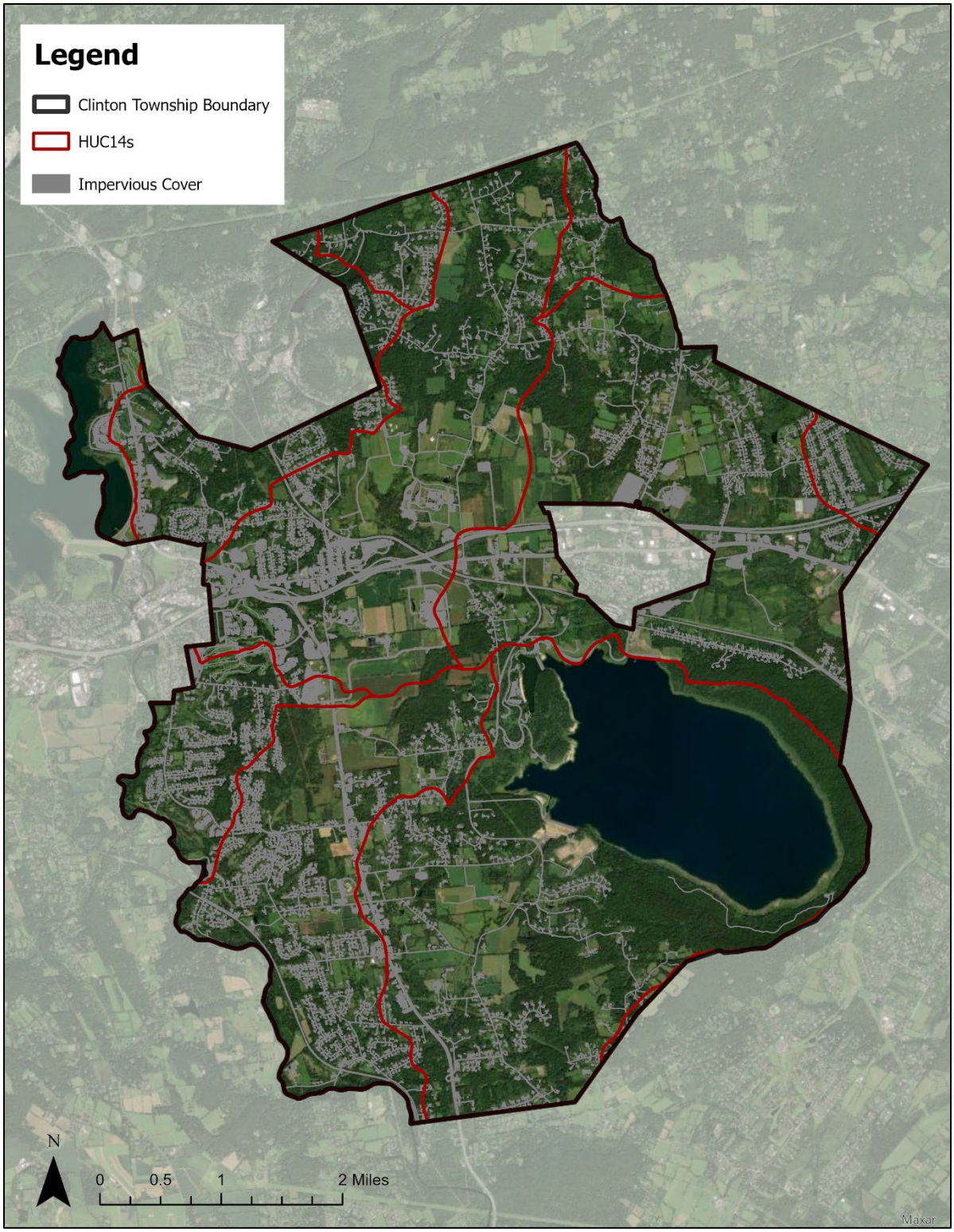


Figure 4: Impervious Cover in Clinton Township

Table 3: Impervious Cover Analysis by HUC14 for Clinton Township

Class	Area (acres)	HUC Impervious Cover (%)
02030105010070		
Building	6.96	
Other	17.61	
Road	15.87	
TOTAL =	**40.4**	**9.7%**
02030105010080		
Building	27.22	
Other	79.65	
Road	59.76	
TOTAL =	**166.6**	**14.7%**
02030105020040		
Building	6.00	
Other	12.14	
Road	13.50	
TOTAL =	**31.6**	**6.9%**
02030105020050		
Building	89.25	
Other	234.28	
Road	210.00	
TOTAL =	**533.5**	**13.2%**
02030105020070		
Building	35.84	
Other	73.77	
Road	53.82	
TOTAL =	**163.4**	**16.6%**
02030105020080		
Building	62.28	
Other	182.61	
Road	121.41	
TOTAL =	**366.3**	**12.9%**
02030105020090		
Building	40.20	
Other	139.71	
Road	112.19	
TOTAL =	**292.1**	**4.4%**
02030105040020		
Building	0.54	
Other	1.29	
Road	1.09	
TOTAL =	**2.9**	**9.3%**
02030105050080		
Building	4.77	
Other	9.89	
Road	8.91	
TOTAL =	**23.6**	**6.5%**

02030105050090		
Building	11.92	
Other	22.78	
Road	25.33	
TOTAL =	**60.0**	**16.1%**
02030105050100		
Building	76.30	
Other	191.72	
Road	153.10	
TOTAL =	**421.1**	**9.6%**
All HUCs		
Building	361.30	
Other	965.46	
Road	774.97	
TOTAL =	**2,101.7**	**9.7%**

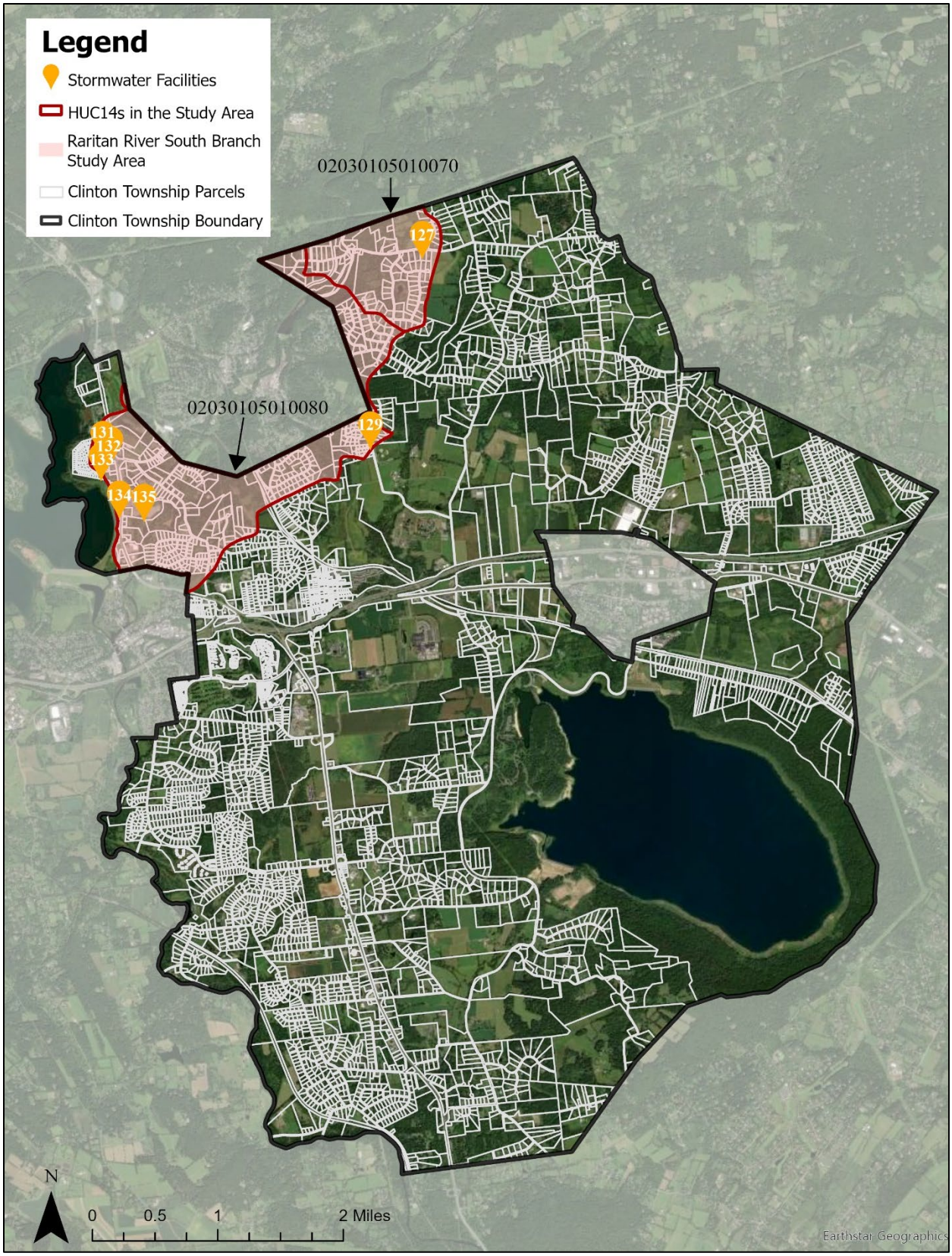


Figure 5: Stormwater Facilities in the Study Area of Clinton Township

Table 4: Location of Stormwater Facilities in the Study Area of Clinton Township

Raritan River South Branch Study Area		
ID	**Address**	**Type**
127	1 Perry Road	N
129	170 East Main Street	N
131	12 Elm Drive	D
132	1801 Route 31	N
133	7 Arbor Court	D
134	1747 Route 31	D
135	1738 Route 31	D

"D" = Detention, "N" = Naturalized

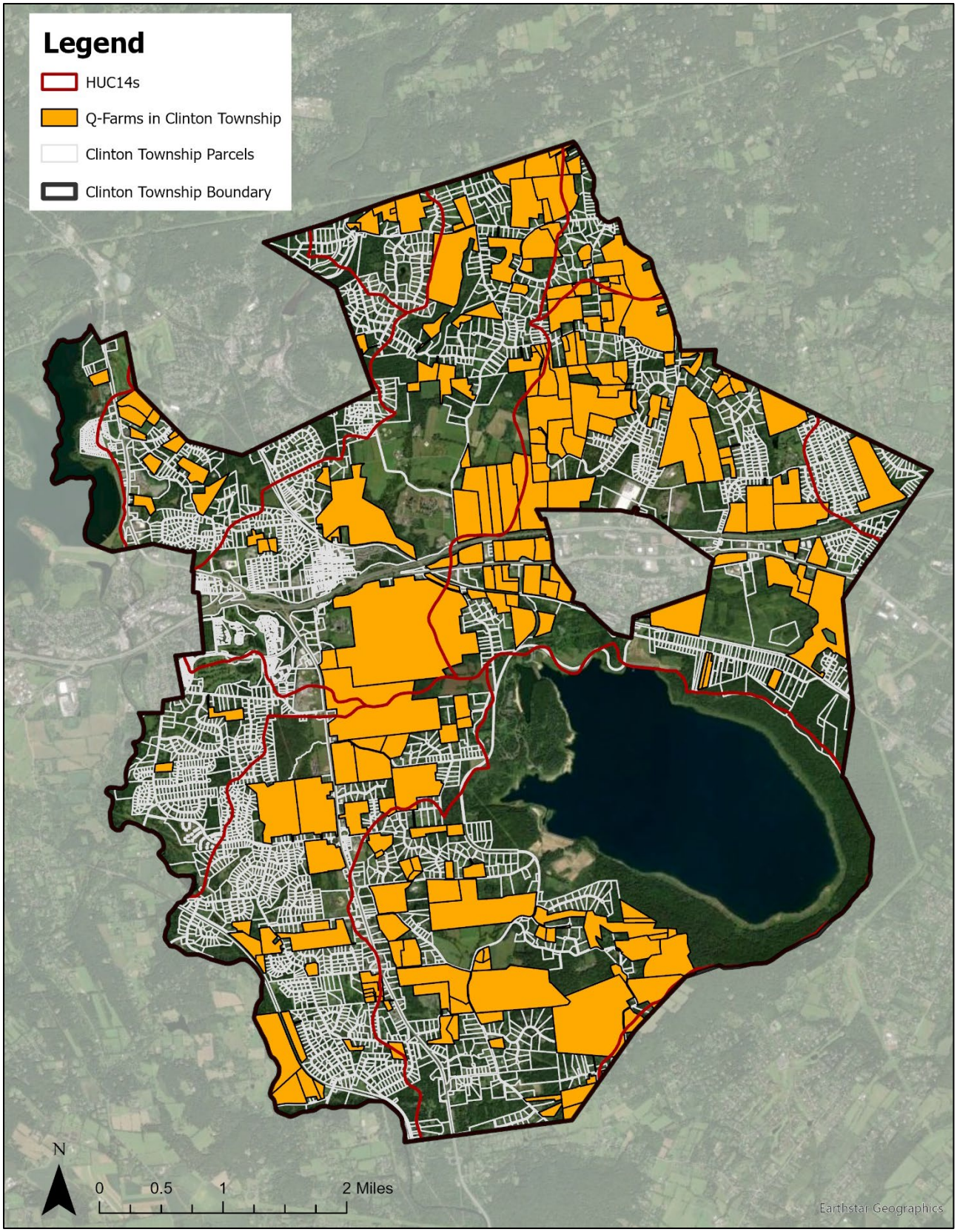


Figure 6: Q-Farm Parcels in Clinton Township

Table 5: Q-Farm Parcels in Clinton Township

Block	Lot	Q-Code	Prop Class	Location
1	25	Q0001	3B	3 Frontage Road
29	4.01	Q0002	3B	63 Valley Crest Road
30	15	Q0002	3B	80 Valley Crest Road
3	1	Q0003		Cokesbury Rd
3	4	Q0004	3B	1 Burlinghoff Lane
3	6	Q0005		Burlinghoff Ln
3	8	Q0005		Burlinghoff Ln
3	7	Q0006	3B	17 Burlinghoff Lane
3	11	Q0007	3B	27 Sheridan Road
3	16	Q0009	3B	7 Old Blossom Hill Road
3	18	Q0010	3B	150 Cokesbury Road
4	20	Q0012	3B	5 Muirfield Lane
4	22	Q0012	3B	72 Blossom Hill Road
7	3	Q0015	3B	1011 Route 22
7	33	Q0019	3B	1 Kullman Corporate Campus
10	2	Q0020	3B	46 Haytown Road
12	15.01	Q0021	3B	54 Haytown Road
9	8	Q0022	3B	10 Haytown Road
9	8.04	Q0022	3B	159 Cokesbury Road
10	1	Q0023	3B	191 Cokesbury Road
10	9.01	Q0023	3B	211 Cokesbury Road
10	4	Q0025	3B	6 Mccatharn Road
10	4.02	Q0026	3B	12 Mccatharn Road
10	4.03	Q0026	3B	14 Mccatharn Road
10	6	Q0027	3B	18 Mccatharn Road
11	7	Q0028	3B	17 Cokesbury-Califon Road
11	8	Q0029	3B	324 Cokesbury Road
11	10	Q0030	3B	352 Cokesbury Road
11	19.02	Q0031		Cokesbury Califon Rd
11	19	Q0034	3B	41 Cokesbury-Califon Road
11	20	Q0035	3B	45 Cokesbury-Califon Road
11	21	Q0036	3B	33 Cokesbury-Califon Road
12	10.01	Q0038	3B	25 Mccatharn Road
12	10.07	Q0038	3B	23 Mccatharn Road
12	12	Q0040	3B	15 Mccatharn Road
4.03	31	Q0041		Us Hwy 22
12	17.05	Q0042	3B	62 Haytown Road
12	24	Q0045	3B	150 Petticoat Lane
12	25	Q0046	3B	327 Cokesbury Road
13	1	Q0047	3B	20 Petticoat Lane
13	3	Q0048	3B	11 Spencer Lane

13	4	Q0049	3B	15 Spencer Lane
13	8	Q0050	3B	Route 78/Voegthen Lane
13	7.08	Q0051	3B	34 Chalfonte Drive
13	7.04	Q0054	3B	35 Chalfonte Drive
13	7.05	Q0055	3B	41 Chalfonte Drive
13	7.10	Q0056	3B	32 Chalfonte Drive
13	5	Q0057	3B	58 Petticoat Lane
9	11	Q0059	3B	18 Haytown Road
13	24.03	Q0059	3B	19 Haytown Road
13	25	Q0059	3B	21 Haytown Road
13	25.01	Q0059	3B	27 Haytown Road
13	26	Q0060	3B	39 Haytown Road
13	26.04	Q0061	3B	35 Haytown Road
13	31.05	Q0063	3B	71 Haytown Road
13	7.06	Q0065	3B	43 Chalfonte Drive
13	7.07	Q0065	3B	44 Chalfonte Drive
13	32	Q0065	3B	Off Haytown Road
13	33	Q0065	3B	85 Haytown Road
13	33.01	Q0065	3B	91 Haytown Road
13	33.02	Q0066	3B	93 Haytown Road
13	34.01	Q0066	3B	97 Haytown Road
13	34	Q0067	3B	103 Haytown Road
13.01	7	Q0069	3B	1450 Route 22
*13.01	8	Q0070	3B	1400 Voegtlens Lane
14	3	Q0071	3B	1401 Route 22
14	4	Q0072	3B	1421 Route 22
13.01	8.02	Q0073	3B	1410 Route 22
14	7	Q0074	3B	1461 Route 22
14	5	Q0075	3B	1431 Route 22
15	4	Q0077	3B	32 Sand Hill Road
15	4.02	Q0078		Us Hwy 22
15	5	Q0079	3B	5 Davis Farm Road
15	7	Q0079	3B	Off Sand Hill Road
15	9.01	Q0080	3B	56 Sand Hill Road
16	16	Q0081	3B	84 Old Mountain Road
16	51	Q0083	3B	1116 Stanton-Lebanon Road
16	51.02	Q0084	3B	4 Bass Lane
16	51.03	Q0084	3B	6 Bass Lane
16	59	Q0087	3B	1114 Stanton-Lebanon Road
16	62	Q0087	3B	234 Stanton Mountain Road
16	63	Q0087	3B	236 Stanton Mountain Road
16	64	Q0089	3B	220 Stanton Mountain Road
19	35	Q0089	3B	221 Stanton Mountain Road
16	73	Q0092	3B	182 Stanton Mountain Road

16	74	Q0094	3B	154 Stanton Mountain Road
19	11	Q0098		Stanton Mountain Rd
19	13	Q0098	3B	101 Stanton Mountain Road
19	14	Q0099	3B	99 Stanton Mountain Road
19	16	Q0100	3B	1002 Stanton-Lebanon Road
19	18.01	Q0101	3B	1010 Stanton-Lebanon Rd
19	23	Q0104		Stanton Lebanon Rd
19	26	Q0106	3B	1040 Stanton-Lebanon Road
19	27	Q0107	3B	1060 Stanton-Lebanon Road
23	5	Q0107	3B	15 Payne Road
19	37	Q0109	3B	149 Stanton Mountain Road
19	38	Q0109	3B	149 Stanton Mountain Road
21	2	Q0112	3B	21 Cratetown Road
21	3.04	Q0112	3B	9 Cratetown Road
23	6	Q0118	3B	14 Cratetown Road
24	18.01	Q0119		Payne Rd
23	9	Q0120	3B	2 Cratetown Road
24	10	Q0121	3B	25 Tine Road
24	18	Q0122	3B	26 Payne Road
25	7	Q0123	3B	1101 Stanton-Lebanon Road
25	11	Q0124	3B	31 Molasses Hill Road
25	16	Q0125	3B	42 Tine Road
28	4	Q0127	3B	1151 Stanton-Lebanon Road
29	4	Q0128	3B	65 Valley Crest Road
29	20	Q0129		Allerton Rd & Blue Cliff Dr
29	31	Q0130	3B	1310 Route 31
28	29	Q0131	3B	28 Molasses Hill Road
30	12	Q0132	3B	6 Pine Tree Drive
30	12.03	Q0133		Galloping Hill Rd & Valley Crest Rd
30	13.01	Q0135		Stone Gate Ln
30	17	Q0136	3B	1380 Route 31
30	30	Q0136	3B	1545 Route 22
30	41	Q0136	3B	304 Old Allerton Road
31	1	Q0136	3B	80 Sand Hill Road
33	6	Q0141	3B	31 Herman Thau Road
33	6.01	Q0142		Beaver Brook Rd & Herman Thau Rd
34	1	Q0145	3B	405 Cokesbury Road
36	6	Q0145	3B	404 Cokesbury Road
34	5	Q0148		David Post Rd & Petticoat Ln
35	1	Q0148		Petticoat Ln
34	6.18	Q0149		Beaver Brook Rd
35	21	Q0152	3B	147 Petticoat Lane
36	5	Q0153	3B	51 Mount Grove Road

36	19	Q0155	3B	440 Cokesbury Road
36	21	Q0155	3B	6 Stone Mill Road
46	33	Q0158	3B	106 Annandale-Hb Road
46	33.01	Q0158	3B	2 Main Street
47.02	1	Q0161	3B	1 Petticoat Lane
60	59.03	Q0165		Studer Rd & Sunrise Cir
63	8	Q0170	3B	58 Grayrock Road
64	1	Q0171		Old Jericho Rd
65	2	Q0171		W Main St
66	7	Q0172		W Main St
70	6	Q0180		State Hwy 31
82	3	Q0185		State Hwy 31
82	54	Q0187	3B	23 Windy Hill Road
82.02	15	Q0191	3B	223 Hamden Road
87	4.02	Q0197	3B	526 Hamden Road
87	6	Q0197	3B	128 Lilac Drive
87	19	Q0201	3B	23 Victoria Drive
88	3	Q0202	3B	111 Allerton Road
89	10	Q0203	3B	17 Red Schoolhouse Road
89	10.09	Q0203	3B	21 Red Schoolhouse Road
89	19.02	Q0208	3B	105 Lilac Drive
95	2	Q0209	3B	29 Victoria Drive
90	2.05	Q0210		Bohem Dr
90	2.06	Q0210		Bohem Dr
90	2.07	Q0210		Bohem Dr
90	2.08	Q0210		Bohem Dr
90	2.09	Q0210		Bohem Dr
90	2.15	Q0210		Payne Rd
91	6	Q0215	3B	15 Hibbler Road
95	4	Q0219	3B	24 Kiceniuk Road
95	4.01	Q0219	3B	40 Kiceniuk Road
95	4.05	Q0219	3B	22 Kiceniuk Road
28	6	Q0230	3B	33 Allerton Road
13	31	Q0242	3B	73 Haytown Road
13	31.09	Q0242	3B	75 Haytown Road
28.01	13	Q0252	3B	49 Allerton Road
28.01	13.01	Q0252	3B	9 Saddle Ridge Drive
34	8.02	Q0260	3B	30 Herman Thau Road
63	9	Q0277	3B	68 Grayrock Road
66	13	Q0285	3B	1826 Route 31
4	23	Q0290	3B	30 Blossom Hill Road
4.03	28	Q0295	3B	1030 Route 22
2	10	Q0302	3B	74 Deer Hill Road
28.01	27.01	Q0303		Molasses Hill Rd

28.01	27.02	Q0303		Molasses Hill Rd
28.01	27.03	Q0303		Molasses Hill Rd
12	23	Q0304	3B	144 Petticoat Lane
5	1	Q0311	3B	1121 Route 22
46	49	Q0312		Possum Hollow Run
1.03	32	Q0314	3B	14 Welsh Road
36	15	Q0315		Cokesbury Rd
36	16	Q0315		Cokesbury Rd
66	14	Q0316	3B	1834 Route 31
87	4.04	Q0318		Bristol Ct & Huntington Dr
33	11.04	Q0319	3B	85 Petticoat Lane
3	9.14	Q0320	3B	16 Wonderview Way
12	10.02	Q0323	3B	17 Mccatharn Road
14	9	Q0324	3B	1473 Route 22
16	32	Q0325		Old Mountain Rd
16	33	Q0325		Old Mountain Rd
18	3	Q0326		Stanton Mountain Rd
3	15.09	Q0327	3B	13 Ramsey Road
13.01	1	Q0328	3B	1480 Route 22
3	15	Q0331	3B	11 Old Blossom Hill Road
82.17	28	Q0334	3B	61 Regional Road
19	28.01	Q0340	3B	1084 Stanton-Lebanon Road
19	28.03	Q0340	3B	Stanton-Lebanon Road
19	28.02	Q0341	3B	1076 Stanton-Lebanon Road
28	30	Q0342	3B	3 Fawn Ridge Road
33	1.01	Q0344	3B	6 Craig Road
71	9	Q0345		Grayrock Rd
13	6	Q0346	3B	17 Spencer Lane
13	7.01	Q0346	3B	21 Spencer Lane
36	8.12	Q0351	3B	7 Perry Road
9	4	Q0352		Hunters Path
91	1.01	Q0353	3B	67 Lilac Drive
87	12	Q0360	3B	25 Twin Oaks Lane
16	70	Q0361	3B	186 Stanton Mountain Road
16	71	Q0361	3B	190 Stanton Mountain Road
16	72	Q0361	3B	188 Stanton Mountain Road
7	19	Q0362	3B	1061 Route 22
7	20	Q0362	3B	1041 Route 22
60	62	Q0365		Foxfire Ln
60	62.01	Q0365		Highfields Rd
17	1	Q0366	3B	116 Stanton Mtn Road
66	12	Q0368	3B	156 West Main Street
14	6	Q0381	3B	1457 Route 22
29	3	Q0392	3B	14 Allerton Road

30	15.01	Q0392	3B	70 Valley Crest Road
68	6	Q0396		State Hwy 31
4	21	Q0398	3B	78 Blossom Hill Road
11	18.06	Q0401	3B	11 Northstar Drive
12	22.02	Q0402	3B	130 Petticoat Lane
4	14	QFARM	3B	605 Cokesbury Rd

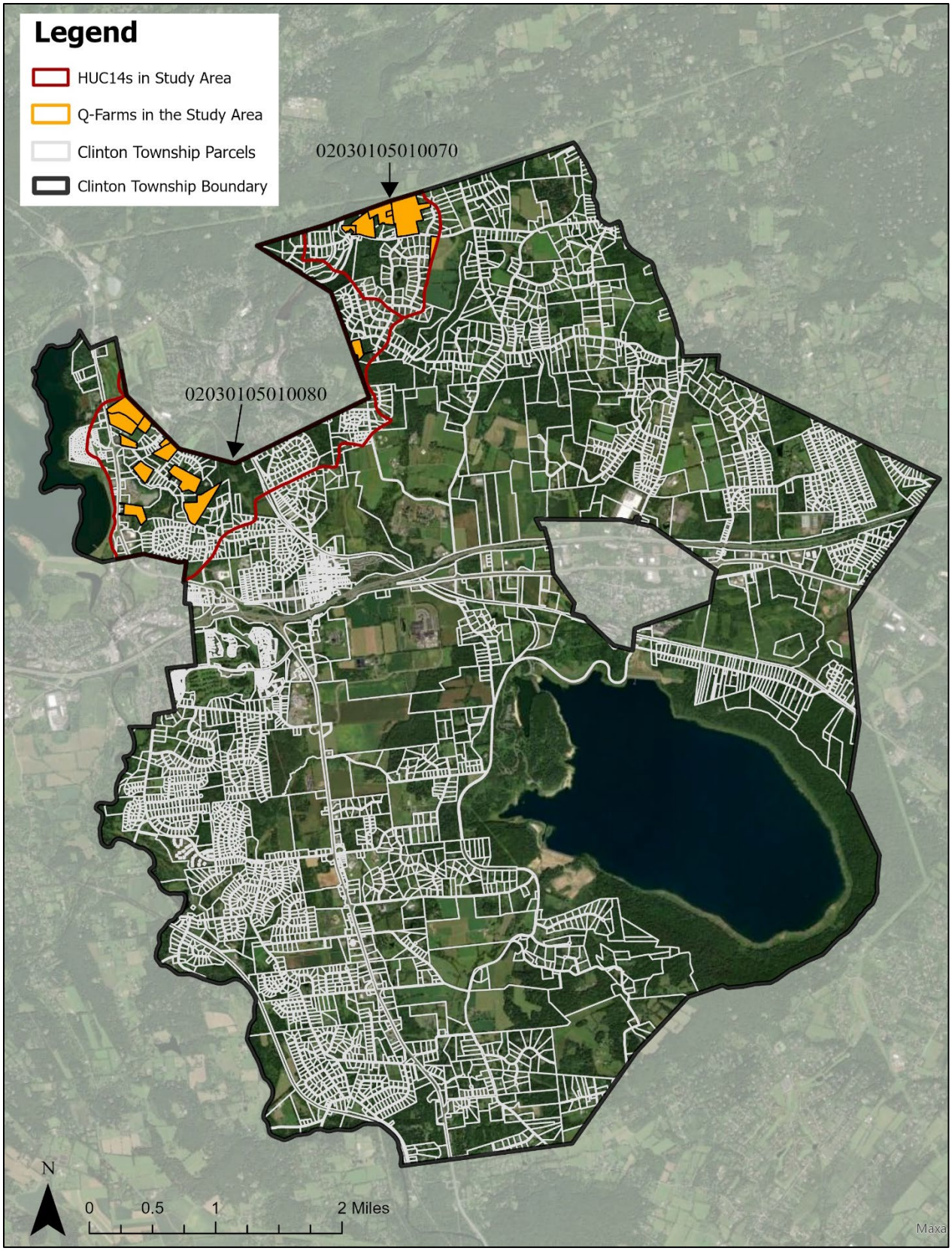


Figure 7: Q-Farm Parcels in the Study Area of Clinton Township

Table 6: Q-Farm Parcels in the Study Area of Clinton Township

Block	Lot	Q-Code	Prop Class	Location
34	1	Q0145	3B	405 Cokesbury Road
36	19	Q0155	3B	440 Cokesbury Road
36	21	Q0155	3B	6 Stone Mill Road
63	8	Q0170	3B	58 Grayrock Road
64	1	Q0171		Old Jericho Rd
65	2	Q0171		W Main St
66	7	Q0172		W Main St
70	6	Q0180		State Hwy 31
63	9	Q0277	3B	68 Grayrock Road
66	13	Q0285	3B	1826 Route 31
36	15	Q0315		Cokesbury Rd
36	16	Q0315		Cokesbury Rd
66	14	Q0316	3B	1834 Route 31
33	1.01	Q0344	3B	6 Craig Road
71	9	Q0345		Grayrock Rd
36	8.12	Q0351	3B	7 Perry Road
66	12	Q0368	3B	156 West Main Street
*4	14	QFARM	3B	605 Cokesbury Rd

*Only a portion of the Q-Farm parcel is within the study area

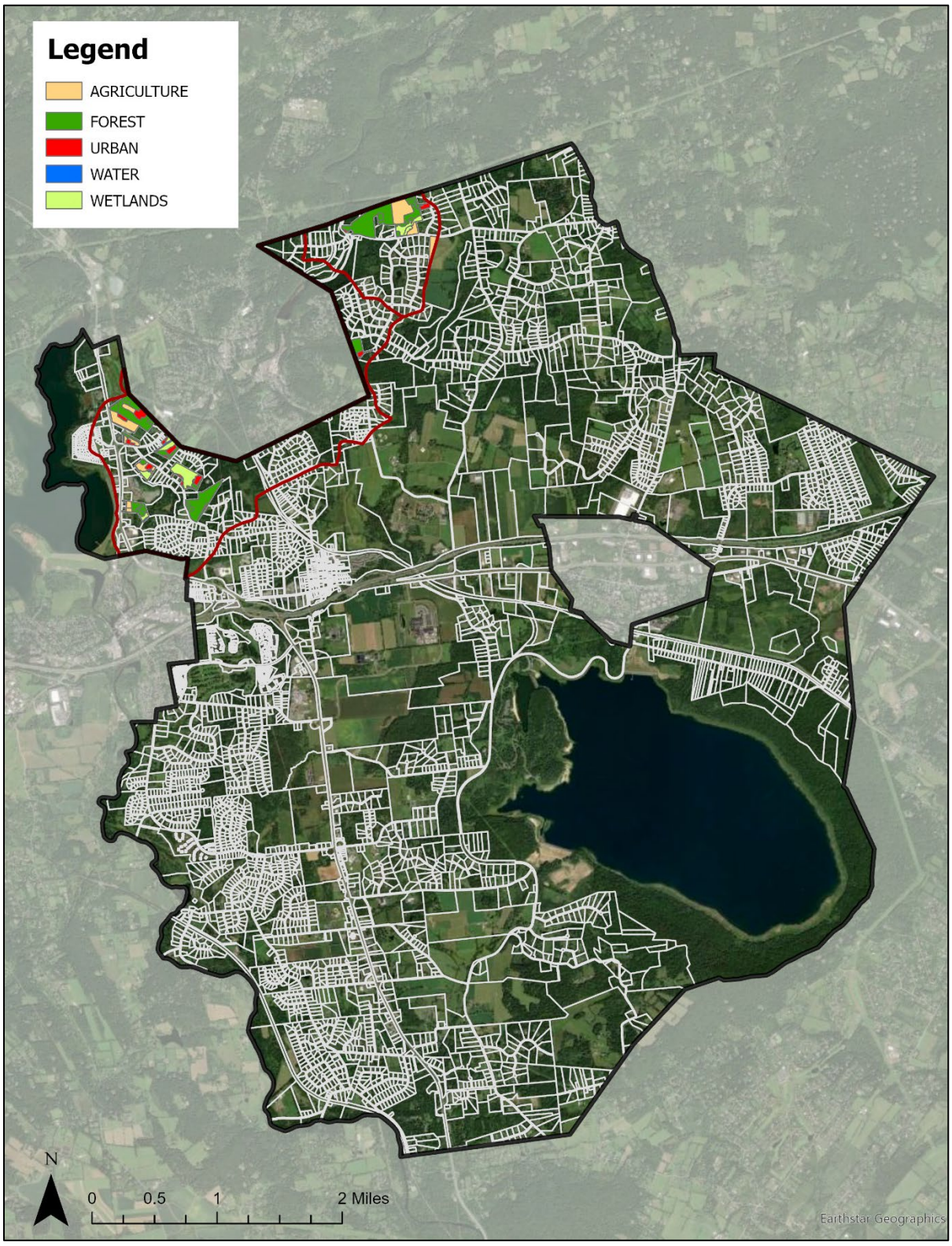


Figure 8: Land Use on Q-Farm Parcels in the Study Area of Clinton Township

Table 7: Land Use on Q-Farms in the Study Area of Clinton Township

Land Use	Area (acres)
Agriculture	45.9
Barren Land	0.0
Forest	115.4
Urban	20.5
Water	1.7
Wetlands	28.7
Total:	**212.2**

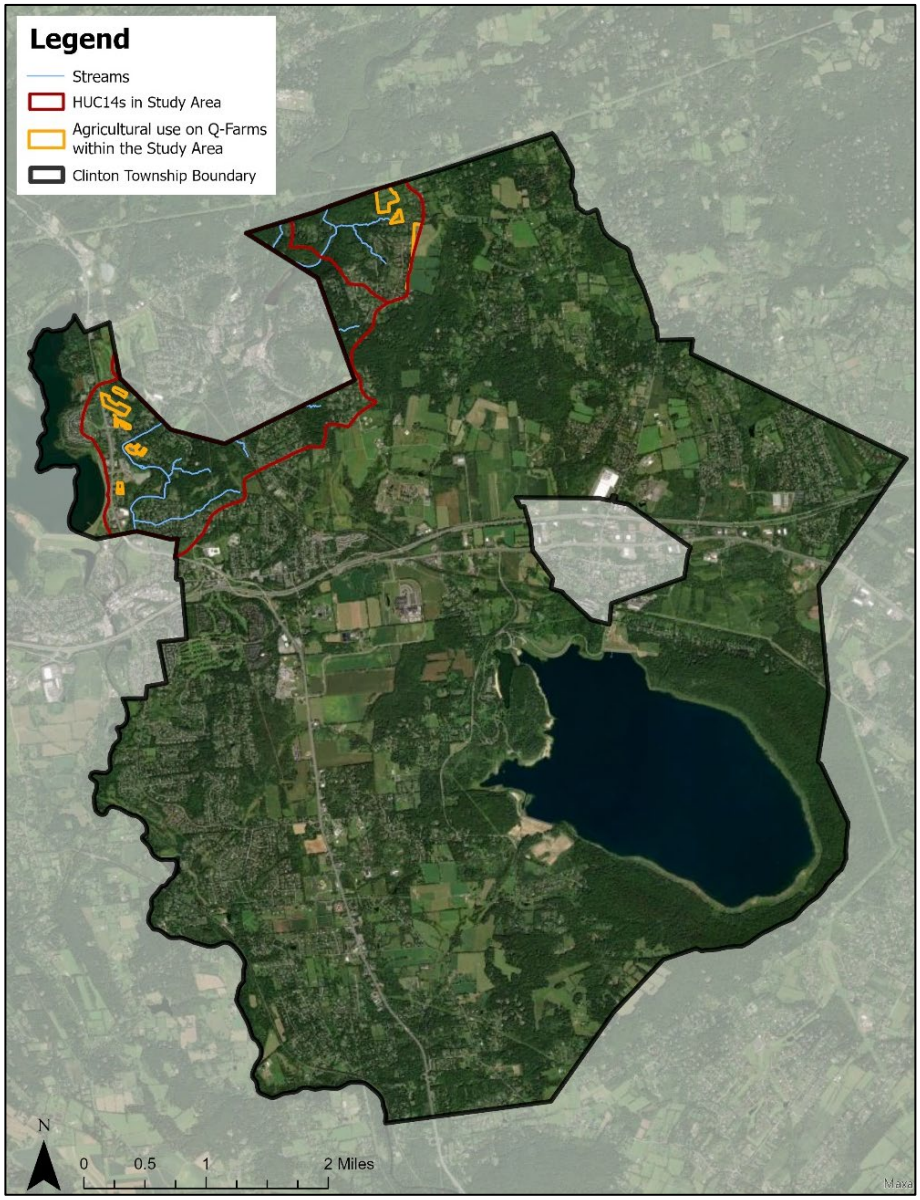


Figure 9: Aerial View of Agricultural Use on Q-Farm Parcels within the Study Area of Clinton Township

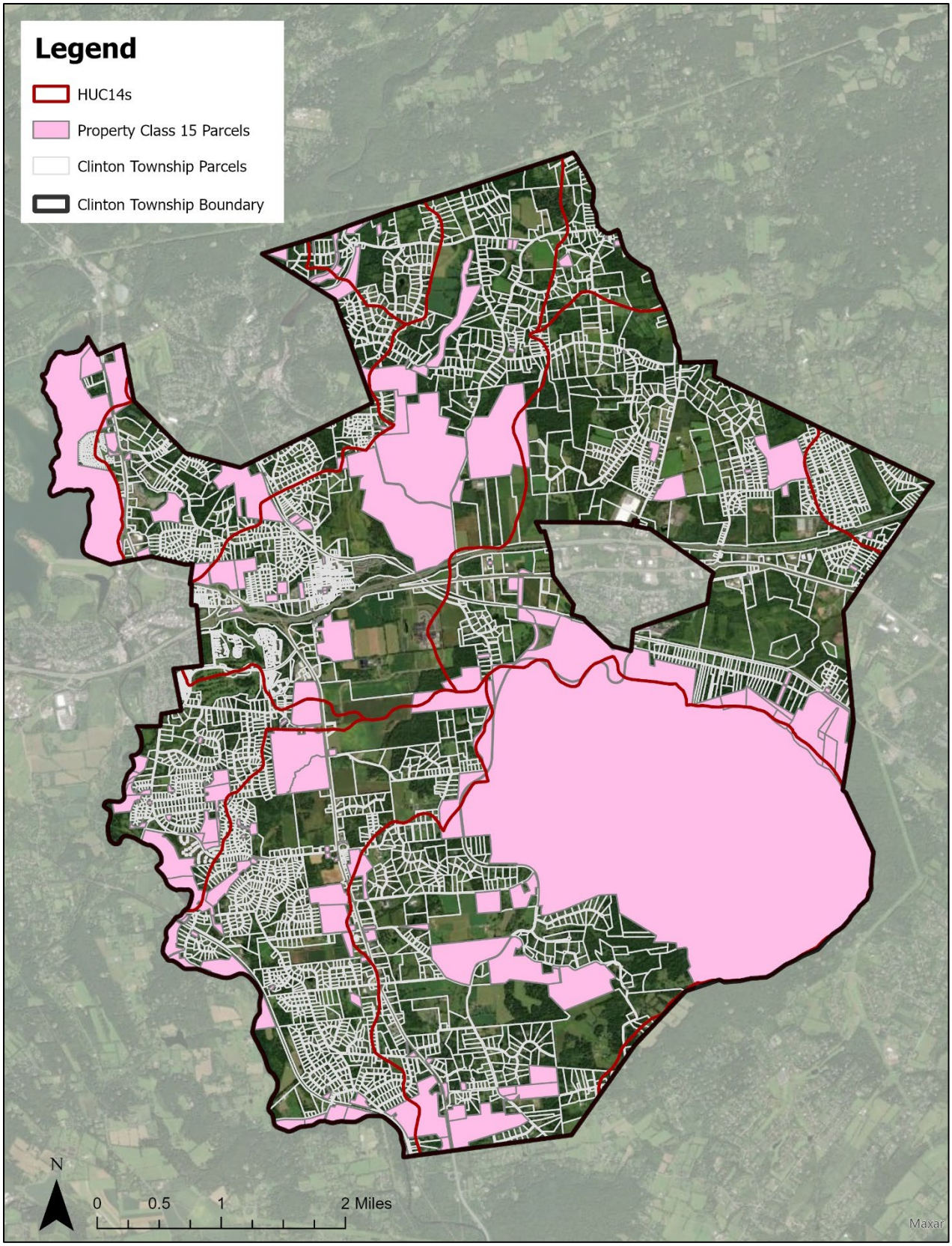


Figure 10: Property Class 15 Parcels in Clinton Township

Table 8: Property Class 15 Parcels in Clinton Township

Block	Lot	Prop Class	Location	Facility Type
3	19	15A	128 Cokesbury Road	Schools
28.01	12.04	15A	63 Allerton Road	School
60	51	15A	27 Belvidere Avenue	Schools
60	56	15A	34 Grayrock Road	Schools
71.04	1	15A	35 Grayrock Road	Vacant Lands
79	1	15A	1445 Route 31	High School
7	4.03	15C	101 Old Mountain Road	Water Supply
8	5	15C	85 Old Mountain Road	Park
13	2	15C	52 Petticoat Lane	Vacant Land
13	28	15C	53 Haytown Road	Vacant Land
13	38	15C	66 Petticoat Lane	Vacant Land
13.01	8.01	15C	Route 22	Jug Handle
14	5.01	15C	Route 22	Admin Office
14	7.02	15C	1451 Route 22	Admin Office
15	1	15C	County Road 629	Round Valley Reserv
15	3	15C	1427 Route 22	Round Valley Reserv
15	3.01	15C	Round Valley Access Rd	Roads
15	4.01	15C	Route 22	Round Valley Reserv
16	1	15C	County Road 629	Park
16	3	15C	106 Old Mountain Road	Park
16	4	15C	106 Old Mountain Road-Rea	Park
16	6	15C	104 Old Mountain Road-Rea	Park
16	7	15C	104 Old Mountain Road	Park
16	10	15C	88 Old Mountain Road-Rear	Park
16	11	15C	88 Old Mountain Road-Rear	Park
16	15	15C	88 Old Mountain Road	Park
16	17	15C	88 Old Mountain Road-Rear	Park
16	19	15C	66 Old Mountain Road	Park
16	69	15C	196 Stanton Mountain Road	Vacant Land
19	20	15C	1020 Stanton-Lebanon Road	Forest
19	20.01	15C	1018 Stanton-Lebanon Road	Vacant Land
19	21.09	15C	Acorn Lane Rear	Vacant Land
19	28	15C	1080 Stanton-Lebanon Road	Camp
20	2.01	15C	1030 Route 31	Park
20	4	15C	1020 Route 31	Arboretum
20	5	15C	1000 Route 31	Vacant Land
20	6	15C	1002 Route 31	Vacant Land
21	4	15C	1 Old Clinton Road	Storage Bldg
22	2	15C	16 Old Clinton Road	Vacant Land
24	1	15C	1230 Route 31	Vacant Land
25	3	15C	7 Molasses Hill Road	Reservoir
25	10	15C	1081 Stanton-Lebanon Road	Open Space
27.01	10	15C	Route 31	Vacant Land
28	34	15C	County Road 629	Round Valley Reserv
29	32	15C	Route 31	Jughandle
30	1	15C	County Road 629	Reservoir

30	16	15C	1370 Route 31	Court & Police St
30	19	15C	1 Sand Hill Road	Vacant Land
30	23	15C	25 Sand Hill Road	Vacant Land
30	39	15C	330 Old Allerton Road	Vacant Land
30.01	39.01	15C	Allerton Road	Vacant Land
33	2	15C	47 Herman Thau Road	Vacant Land
33	4	15C	37 Herman Thau Road	Vacant Land
33	9	15C	172 East Main Street	Vacant Land
33	10	15C	59 Petticoat Lane	Emergency Services
34	2	15C	19 David Post Road	Vacant Land
*34.06	16	15C	459 County Road 639	Park
36	17	15C	438 Cokesbury Road	Vacant Land
36	20	15C	8 Stone Mill Road	Vacant Land
36	24	15C	10 Stone Mill Road	Vacant Land
39	1	15C	Route 513	Park
39	7	15C	Route 513	Footpath
46	14.01	15C	29 Round Top Drive	Vacant Land
46	32	15C	31 Petticoat Lane	Disabled Veteran Ss
53	3	15C	6 West Street	Municipal Bldg.
54	1	15C	Beaver Avenue	Vacant Land
56	4	15C	10 Humphrey Road	Vacant Land
58	1	15C	Humphrey Road	Vacant Land
60	27	15C	84 Beaver Avenue	Garage
60.02	23	15C	16 Austin Hill Road	Garage
60.03	26.08	15C	68 Beaver Avenue	Volunteer Fire Co.
61	4	15C	111 Annandale-Hb Road	Residence
61	4.01	15C	115 Annandale-Hb Road	Residence
61	5	15C	117 Annandale-Hb Road	Bunkhouse
61	15	15C	139 Annandale-Hb Road	Dedicated Open Spacee
63	2	15C	153 Annandale-Hb Road	Open Space
63	3.14	15C	16 Sunrise Circle	Open Space
68	2	15C	1871 Route 31	Vacant Land
68	9.01	15C	1801 Route 31	Vacant Land
68	9.04	15C	1763 Route 31	Vacant Land
68	15	15C	1851 Route 31	Vacant Land
70	2.01	15C	1704 Route 31	Vacant Land
70	8	15C	1740 Route 31	Park
70	20	15C	1764 Route 31	Vacant Land
76	3	15C	194 Center Street	Parking Area
81	1	15C	200 Hamden Road	Vacant Land
81	3	15C	260 Hamden Road	Park
81	5.01	15C	262 Hamden Road	Park
81	6.01	15C	264 Hamden Road	Park
81	8	15C	244 Hamden Road	Park
81	40	15C	Wales Court	Park
82	4	15C	1375 Route 31	Marookian
82	4.03	15C	1355 Route 31	Marookian
82.06	40	15C	Andreann Drive	Vacant Land
82.11	12	15C	Wellington Drive	Vacant Land

82.13	57.01	15C	245 Hamden Road	Park
82.13	58	15C	512 River Road	Open Space
82.19	29	15C	Southgate Drive	Open Space
83	4	15C	Hamden Road rear of Llock	Vacant Land
86	2	15C	502 Hamden Road	Park
86	2.01	15C	off Lilac Drive	Park
87	60	15C	Allerton Road off-of	Water Supply
88	2	15C	1291 Route 31	Vacant Land
88	3.02	15C	1251 Route 31	Dedicated Open Space
89	6.01	15C	1215 Route 31	Fire House
90	15	15C	1101 Route 31	Vacant Land
90.02	1	15C	Route 31	Vacant Land
91.01	9.01	15C	Route 31	Jug Handle
91.01	11	15C	1001 Route 31	Vacant Land
91.01	13	15C	41 Lilac Drive	Jug Handle
93	1	15C	29 Kiceniuk Road	Park
93	1.02	15C	Lilac Drive	Park
93	2	15C	27 Kiceniuk Road	Park
94	1	15C	37 Kiceniuk Road	Park
94	2	15C	47 Kiceniuk Road	Park
95	1	15C	Lilac Drive	Park
300	1	15C	Railroad	Park
400	1	15C	Railroad Track	Camp
400	2	15C	Stone Mill Road	Footpath
3	13	15D	79 Blossom Hill Road	Camp
4	21.01	15D	78 Blossom Hill Road	Camp
7	34	15D	40 Cherry Street	Vacant Land
10	12	15D	245 Cokesbury Road	Vacant Land
10	18	15D	259 Cokesbury Road	Parsonage
13.02	23.01	15D	3 Haytown Road	Parsonage
19	31	15D	267 Stanton Mountain Road	Camp
19	32	15D	245 Stanton Mountain Road	Camp
30	35	15D	316 Old Allerton Road	Church-School
53	1	15D	2 West Street	Municipal Bldg.
82	1	15D	104 Allerton Road	Church
82.15	1	15D	4 Andreann Drive	Parsonage
88	1.01	15D	107 Allerton Road	Parking Areas
89	10.03	15D	9 Red Schoolhouse Road	Religious Fac
90	2.03	15D	3 Springhouse Ct	Parsonage
1.01	2	15F	8 South Deer Hill Road	Disabled Veteran
3.02	8	15F	12 Ramsey Road	Disabled Veteran
4.03	23	15F	17 Wayside Lane	Disabled Veteran
7	28	15F	228 Main Street	Disabled Veteran
12	10.11	15F	5 Fieldstone Drive	Disabled Veteran
12	18.03	15F	5 Colonial Court	Disabled Veteran
13.01	5	15F	1464 Route 22	Unknown
21	10	15F	16 Stanton Grange Road	Grange Hall
24	6	15F	1222 Route 31	Vacant Land
25	8	15F	15 Molasses Hill Road	Vacant Land

25	17	15F	Tine Road	Vacant Land
26	4	15F	1232 Route 31	Vacant Land
35	19	15F	355 Cokesbury Road	Disabled Veteran
35	20	15F	353 Cokesbury Road	Disabled Veteran
39	4.03	15F	530 Cokesbury Road	Vacant Land
41	3.01	15F	509 Cokesbury Road	Camp
41	4	15F	511 Cokesbury Road	Camp
46	27.01	15F	15 Possum Hollow Run	Disabled Veteran Ss
48	3	15F	24 Main Street	Disabled Veteran
52	7	15F	5 West Street	Disabled Vet
61	19	15F	28 Michael Lane	Vacant Land
66	15	15F	1860 Route 31	Golf Course
81	7	15F	Kent Court	Park
81	35	15F	10 Wales Court	Disabled Veteran
82	7	15F	19 Regional Road	Disabled Veteran
82.02	9	15F	5 Amherst Court	Open Space
82.04	16	15F	18 Lexington Road	Open Space
82.06	6	15F	30 Bennington Road	Vacant Land
82.07	25	15F	Dartmouth Road	Open Space
82.07	28	15F	6 Dartmouth Road	Disabled Veteran
82.07	43	15F	2 Wellington Drive	Open Space
82.08	8	15F	Cambridge Drive	Open Space
82.12	11	15F	7 Wellington Drive	Open Space
82.13	61.34	15F	Brighton Court	Open Space
82.18	49.13	15F	33 Southgate Drive	Disabled Veteran
83	1	15F	521 River Road	Vacant Land
83	5	15F	Hamden Road rear of Llock	Vacant Land
84	3	15F	2 Camp Buck Road	Administrative Bldg.
85	1	15F	1 Camp Buck Road	Residence
86	1.01	15F	524 Hamden Road	Ss Disabled Veteran
87	11.21	15F	11 Twin Oaks Lane	Disabled Veteran Ss
87	47	15F	44 Whispering Hills Drive	Dedicated Open Spacee
88	3.03	15F	8 Red Schoolhouse Road	Dedicated Open Space
88	12	15F	Route 31	Water Supply
92	7	15F	54 Lilac Drive	Disabled Veteran

*Only a portion of the parcel is within the Clinton Township boundary

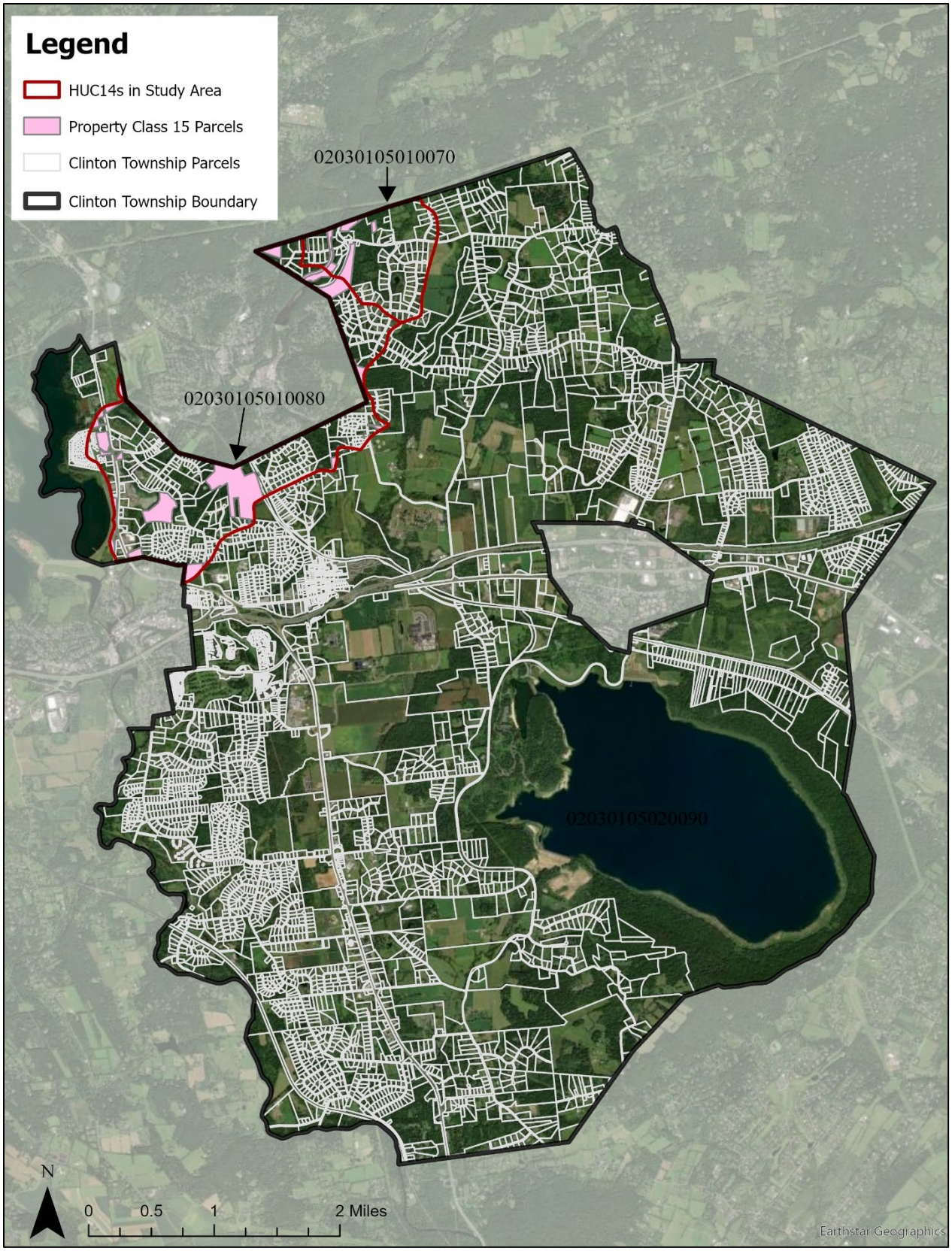


Figure 11: Property Class 15 Parcels in the Study Area of Clinton Township

Table 9: Property Class 15 Parcels in the Study Area of Clinton Township

Block	Lot	Prop Class	Location	Facility Type
***60[1]**	**56**	**15A**	**34 Grayrock Road**	**Schools**
71.04[1]	1	15A	35 Grayrock Road	Vacant Lands
33[1]	2	15C	47 Herman Thau Road	Vacant Land
33[1]	9	15C	172 East Main Street	Vacant Land
***33[1]**	**10**	**15C**	**59 Petticoat Lane**	**Emergency Services**
34.06	16	15C	459 County Road 639	Park
36	17	15C	438 Cokesbury Road	Vacant Land
36	20	15C	8 Stone Mill Road	Vacant Land
36	24	15C	10 Stone Mill Road	Vacant Land
39	1	15C	Route 513	Park
39	7	15C	Route 513	Footpath
46	14.01	15C	29 Round Top Drive	Vacant Land
46[1]	32	15C	31 Petticoat Lane	Disabled Veteran Ss
61	15	15C	139 Annandale-Hb Road	Dedicated Open Space
63[1]	2	15C	153 Annandale-Hb Road	Open Space
63	3.14	15C	16 Sunrise Circle	Open Space
68	9.01	15C	1801 Route 31	Vacant Land
68	9.04	15C	1763 Route 31	Vacant Land
68	15	15C	1851 Route 31	Vacant Land
70	2.01	15C	1704 Route 31	Vacant Land
70	8	15C	1740 Route 31	Park
70	20	15C	1764 Route 31	Vacant Land
400	1	15C	Railroad Track	Camp
400	2	15C	Stone Mill Road	Footpath
39	4.03	15F	530 Cokesbury Road	Vacant Land
41	3.01	15F	509 Cokesbury Road	Camp
41	4	15F	511 Cokesbury Road	Camp
46[1]	27.01	15F	15 Possum Hollow Run	Disabled Veteran Ss
61	19	15F	28 Michael Lane	Vacant Land
66	15	15F	1860 Route 31	Golf Course

*** Sites that can be retrofitted with green infrastructure**

Only a portion of the parcel is within the study area

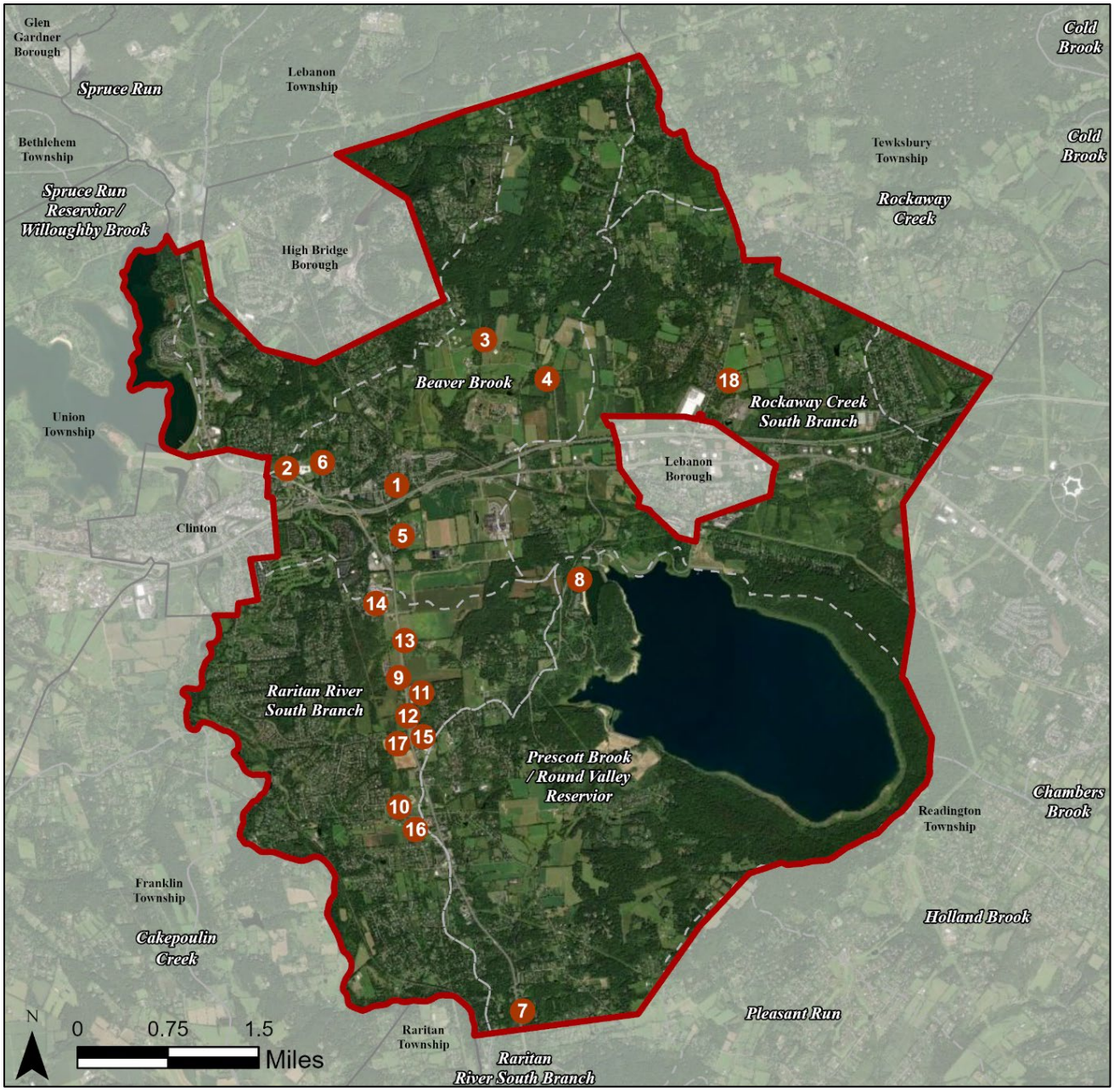


Figure 12: Sites with Green Infrastructure Opportunities in Clinton Township

ANNANDALE REFORMED CHURCH

RAP ID: 1

Subwatershed: Beaver Brook

HUC14 ID: 02030105020050

Site Area: 25,986 sq. ft.

Address: 2 West Street,
Annandale, NJ 08801

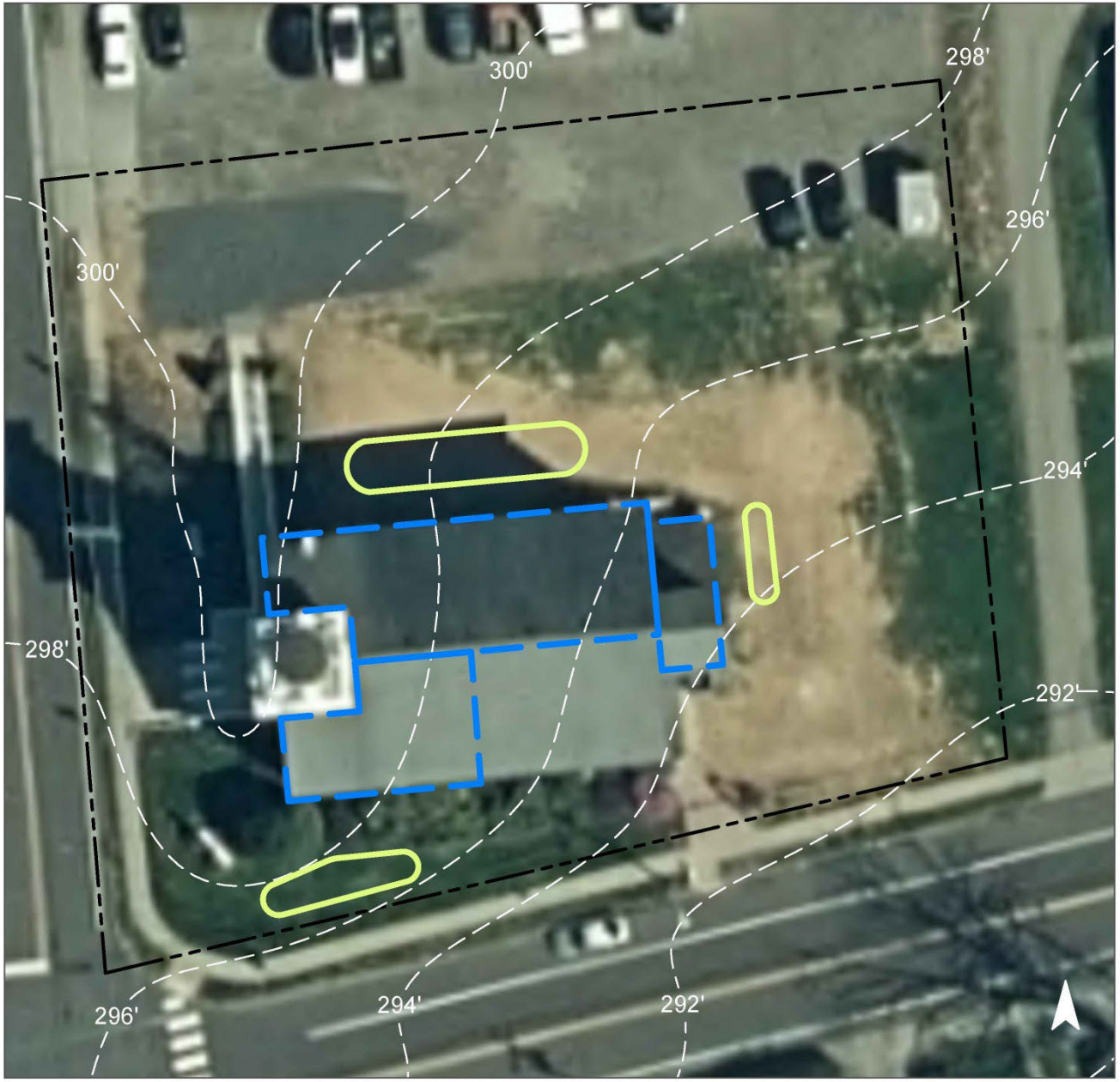
Block and Lot: Block 53, Lot 1

Three rain gardens requiring downspout disconnection and redirection can be installed in the grass areas around the building to capture, treat, and infiltrate stormwater runoff from the roof. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

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 49.4"
56	14,609	0.7	7.4	67.1	0.011	0.45

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	2,995	0.088	13	6,010	0.23	750	$7,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



Annandale Reformed Church

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

0 15' 30'

CLINTON TOWNSHIP MIDDLE SCHOOL

RAP ID: 2

Subwatershed: Beaver Brook

Site Area: 1,150,067 sq. ft.

Address: 34 Grayrock Road
Clinton, NJ 08809

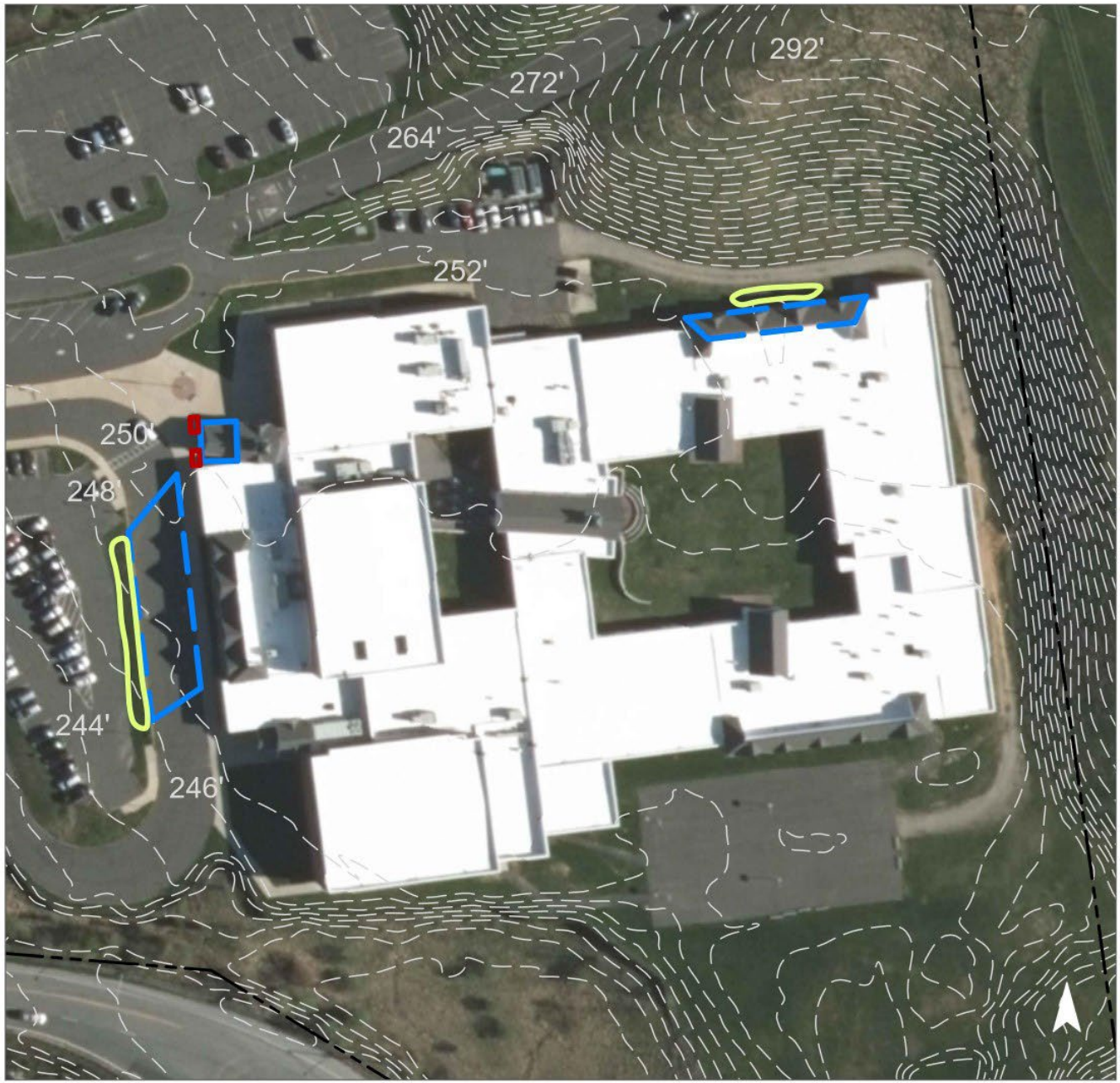
Block and Lot: Block 60, Lot 56

Two downspout planter boxes can be installed along the building, and bioretention systems can be installed in the turfgrass median in front of the building. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

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 44"
31	353,034	17.0	178.3	1,620.9	0.275	9.68

Recommended Green Infrastructure Practices	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 systems	0.165	28	12,536	0.55	1,165	$5,825
Planter boxes	n/a	2	n/a	n/a	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Clinton Township Middle School

- bioretention system
- planter box
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 50' 100'

HUNTERDON COUNTY EMERGENCY SERVICES

RAP ID: 3

Subwatershed: Beaver Brook

HUC14 ID: 02030105020050

Site Area: 11,443,751 sq. ft.

Address: 59 Petticoat Lane,
Annandale, NJ 08801

Block and Lot: Block 33, Lot 10

A rain garden can be installed in the grass area near the southwest side of the building to capture, treat, and infiltrate stormwater runoff from the roof. Another rain garden requiring downspout disconnection and redirection can be installed in the grass area near the northwest side of the building to capture, treat, and infiltrate stormwater runoff from the roof. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure

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 49.4"
5	528,755	25.5	267.0	2,427.7	0.412	16.28

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	1,290	0.038	6	2,590	0.10	320	$3,200

GREEN INFRASTRUCTURE RECOMMENDATIONS

Hunterdon County Emergency Services

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

0 15' 30'

HUNTERDON PREPARATORY SCHOOL

RAP ID: 4

Subwatershed: Beaver Brook

Site Area: 1,960,034 sq. ft.

Address: 11 Spencer Lane
Annandale, NJ 08801

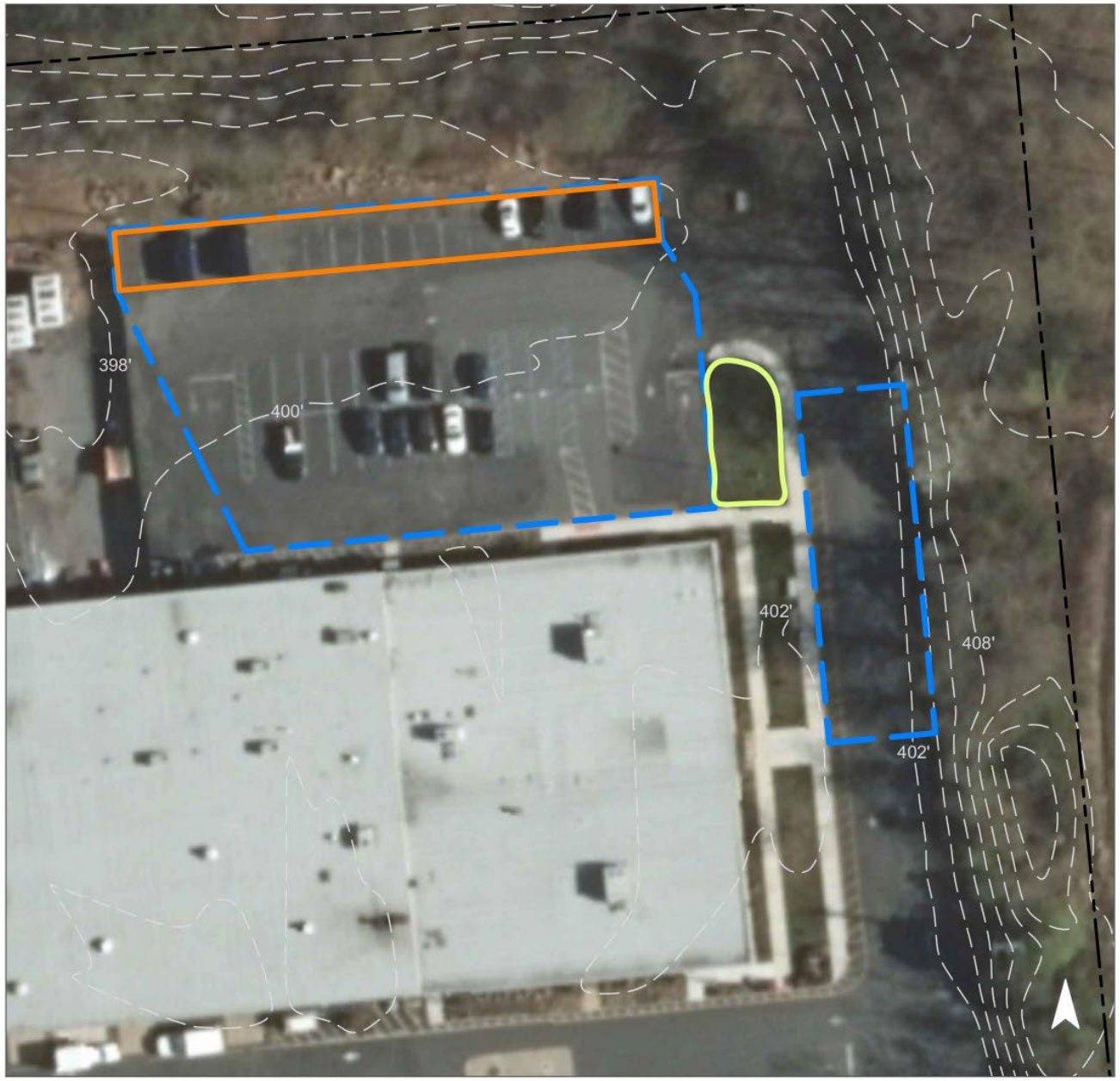
Block and Lot: Block 13, Lot 3

Pervious pavement can be installed in the northern parking lot spots to capture and infiltrate stormwater. A rain garden can be installed in the turfgrass area to the northeast corner of the building to allow for the capture, infiltration, and filtration of stormwater. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

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 44"
14	279,043	13.5	140.9	1,281.2	0.217	7.65

Recommended Green Infrastructure Practices	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	0.105	18	7,944	0.35	1,015	$5,075
Pervious pavement	0.491	82	37,198	1.64	3,600	$90,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Hunterdon Preparatory School

- bioretention system
- pervious pavement
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 25' 50'

IMMACULATE CONCEPTION SCHOOL AND ROMAN CATHOLIC CHURCH

RAP ID: 5

Subwatershed: Beaver Brook

HUC14 ID: 02030105020050

Site Area: 2,277,779 sq. ft.

Address: 314 Old Allerton Road, Annandale, NJ 08801

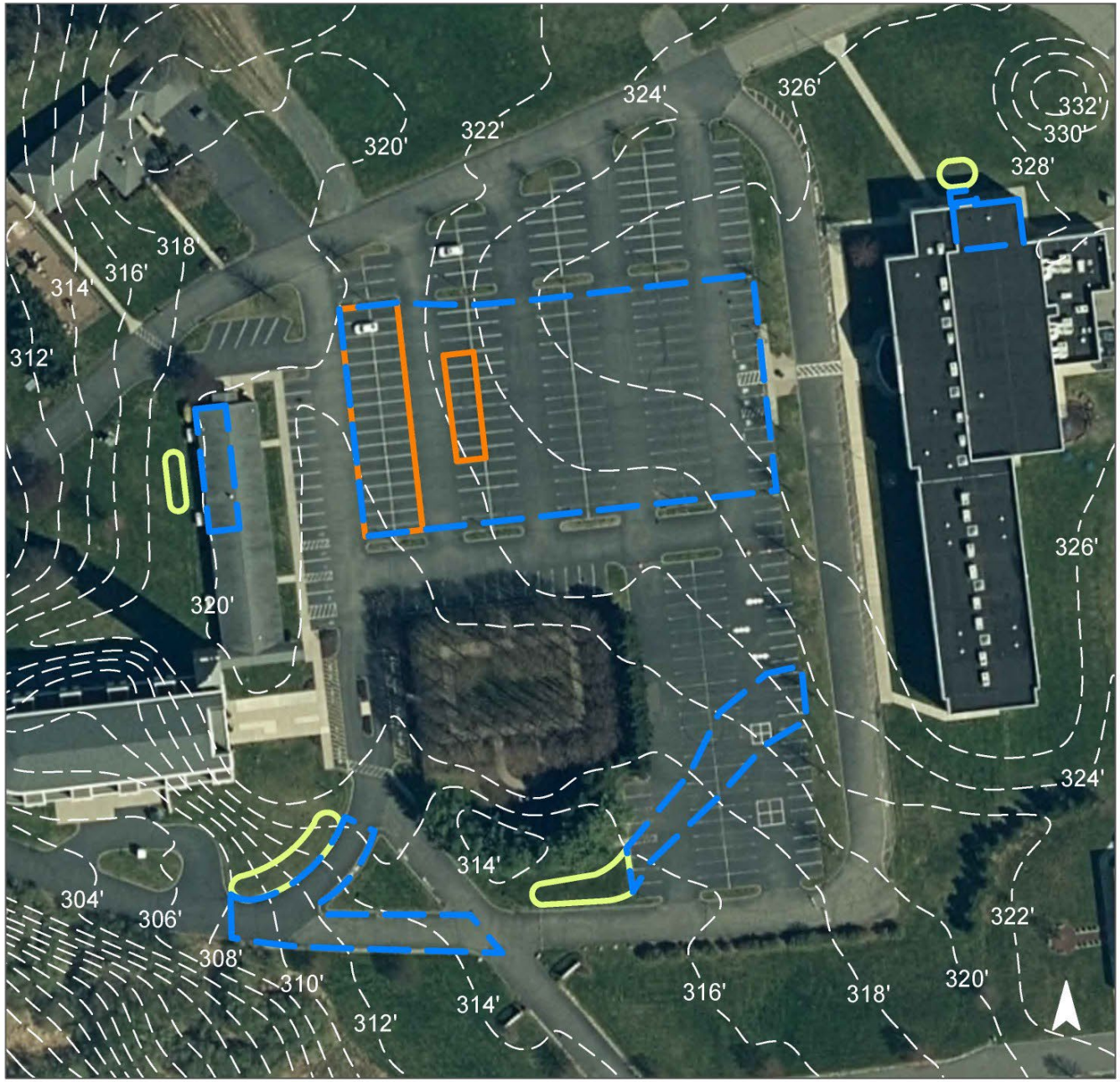
Block and Lot: Block 30, Lot 35

Parking spaces in the lot can be converted to porous pavement to capture and infiltrate stormwater runoff from the asphalt. Two rain gardens requiring downspout disconnection and redirection can be installed in the grass areas near the west and east buildings to capture, treat, and infiltrate stormwater runoff from the roof. Two rain gardens with curb cuts and trench drains can be installed in the grass areas south of the parking lot to capture, treat, and infiltrate stormwater runoff from the pavement. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

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 49.4"
19	438,104	21.1	221.3	2,011.5	0.341	13.49

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	13,345	0.390	59	26,760	1.01	3,340	$33,400
Pervious pavement	39,105	1.144	171	78,410	2.95	7,060	$176,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



Immaculate Conception School and Roman Catholic Church

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 50' 100'

SPRUCE RUN SCHOOL

RAP ID: 6

Subwatershed: Beaver Brook

Site Area: 741,140 sq. ft.

Address: 27 Belvidere Avenue
Clinton, NJ 08809

Block and Lot: Block 60, Lot 51

Bioretention systems can be installed in the north, west, and east corners of the building to capture, treat, and infiltrate rooftop runoff. Downspout planter boxes can be constructed along the south of the building to allow roof runoff to be reused. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

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 44"
27	201,128	9.7	101.6	923.5	0.157	5.52

Recommended Green Infrastructure Practices	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 systems	0.160	27	12,133	0.53	1,540	$7,700
Planter boxes	n/a	2	n/a	n/a	3 (boxes)	$3,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Spruce Run School

- bioretention system
- planter box
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 30' 60'

HUNTERDON COUNTY ARBORETUM

RAP ID: 7

Subwatershed: Prescott Brook/Round Valley Reservoir

Site Area: 3,189,338 sq. ft.

Address: 1020 NJ-31
Lebanon, NJ 08833

Block and Lot: Block 20, Lot 4

A bioretention system can be installed along the north edge of the parking lot to capture, treat, and infiltrate rooftop runoff from the tilted pitch of the pavement. Downspout planter boxes can be installed to treat the rooftop stormwater near the western entrance. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

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 44"
3	98,515	4.7	49.8	452.3	0.077	2.70

Recommended Green Infrastructure Practices	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	0.133	22	10,091	0.44	2,045	$10,225
Planter boxes	n/a	5	n/a	n/a	4 (boxes)	$4,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Hunterdon County Arboretum

- bioretention system
- planter box
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 30' 60'

ROUND VALLEY RECREATION AREA

RAP ID: 8

Subwatershed: Prescott Brook/Round Valley Reservoir

Site Area: 159,333,833 sq. ft.

Address: 1220 Stanton Lebanon Road
Lebanon, NJ 08833

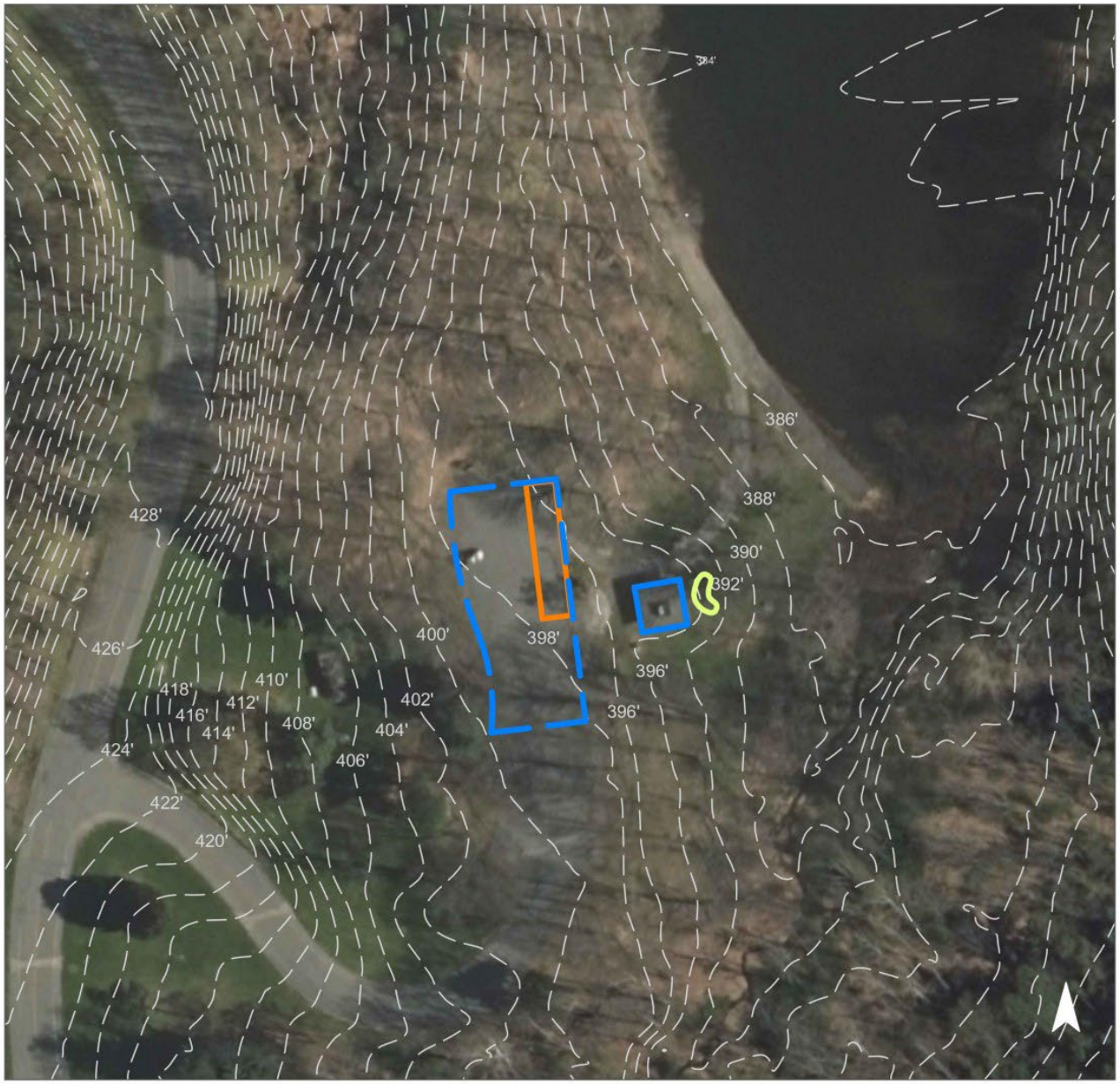
Block and Lot: Block 16, Lot 1

A bioretention system can be installed to capture the stormwater runoff from the building on its eastern side. Pervious pavement on the northeastern corner of the parking lot can capture and treat the stormwater runoff from the parking lot. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

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 44"
1	2,134,801	102.9	1078.2	9,801.7	1.663	58.55

Recommended Green Infrastructure Practices	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	0.023	4	1,780	0.08	225	$1,125
Pervious pavement	0.263	44	19,897	0.88	1,800	$45,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Round Valley Recreation Area

- bioretention system
- pervious pavement
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 50' 100'

ALL TRADES CONTRACTING, INC.

RAP ID: 9

Subwatershed: Raritan River South Branch

Site Area: 134,783 sq. ft.

Address: 1335 NJ-31
Annandale, NJ 08801

Block and Lot: Block 82, Lot 3.01

A bioretention system can be installed north of the building to capture, treat, and infiltrate stomwater runoff from the roof. Pervious pavement can be installed in the southern parking spots to capture and infiltrate stormwater runoff from the parking lot. Downspout planter boxes can be installed next to the eastern entrance to capture and treat the stormwater runoff from the roof. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

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 44"
11	14,657	0.7	7.4	67.3	0.011	0.40

Recommended Green Infrastructure Practices	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	0.013	2	980	0.04	125	$625
Pervious pavement	0.105	18	7,959	0.35	720	$18,000
Planter boxes	n/a	2	n/a	n/a	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

All Trades Contracting, Inc.

- bioretention system
- pervious pavement
- planter box
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 25' 50'

BUNDT PARK

RAP ID: 10

Subwatershed: Raritan River South Branch

Site Area: 1,392,166 sq. ft.

Address: Red School House Road
Lebanon, NJ 08833

Block and Lot: Block 88, Lot 3.03

A bioretention system can be installed next to the southeast corner of the basketball court to help infiltrate the stormwater that tends to pool in that area. Pervious pavement can be installed on the western section of the parking lot to capture, treat, and infiltrate the stormwater runoff from it. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

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 44"
23	314,106	15.1	158.6	1,442.2	0.245	8.61

Recommended Green Infrastructure Practices	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	0.064	11	4,855	0.21	615	$3,075
Pervious pavement	0.368	62	27,856	1.23	2,520	$63,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Bundt Park

- bioretention system
- bioswale
- pervious pavement
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 50' 100'

GEBHARDT & KIEFER, P. C.

RAP ID: 11

Subwatershed: Raritan River South Branch

Site Area: 100,930 sq. ft.

Address: 1318 NJ-31
Annandale, NJ 08801

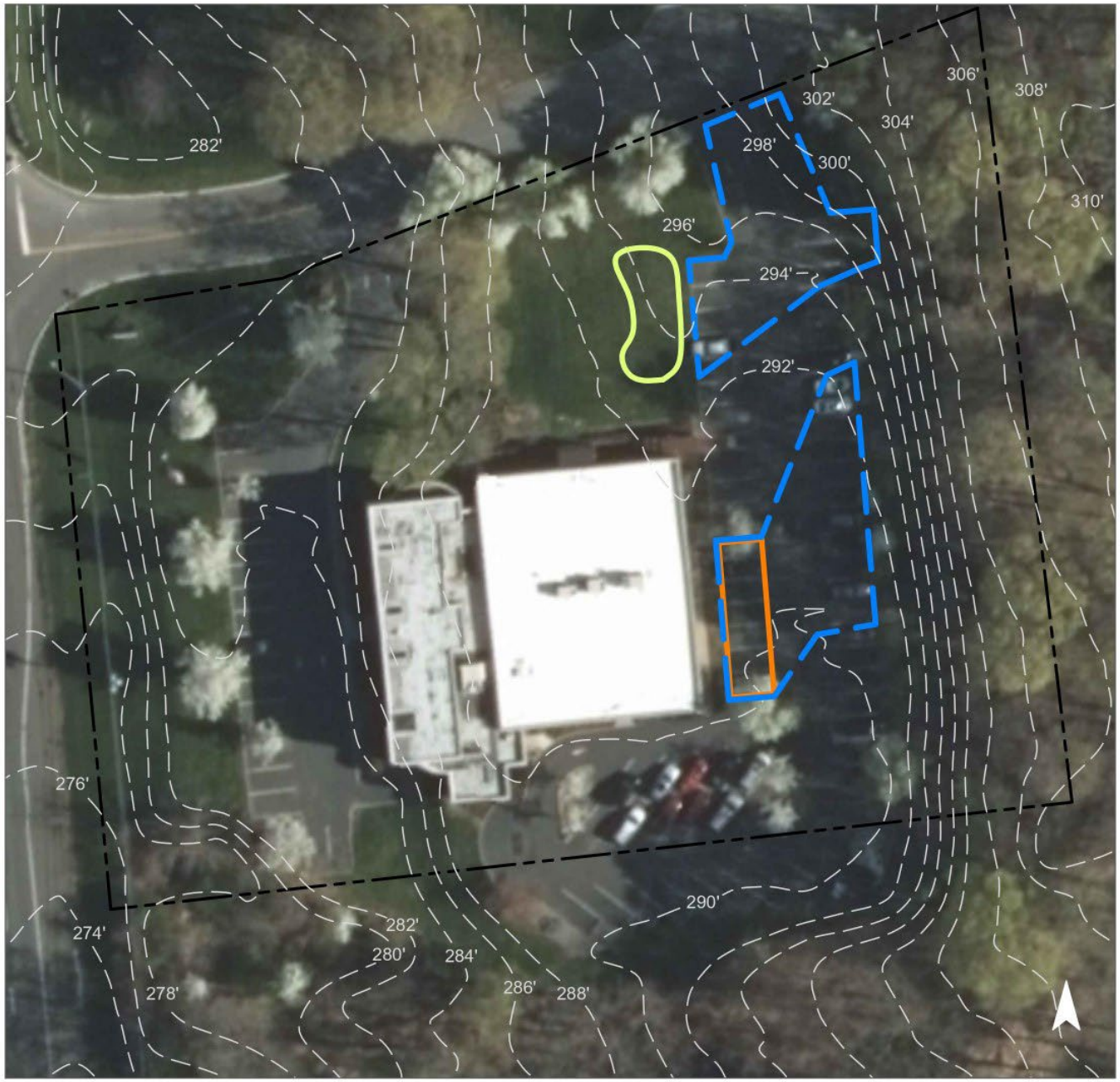
Block and Lot: Block 29, Lot 13

Pervious pavement can be installed in the eastern parking lot to capture, treat, and infiltrate the stormwater from the parking lot. A bioretention system can be installed on the northern side of the building to capture stormwater runoff from the north section of the parking lot. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

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 44"
46	46,286	2.2	23.4	212.5	0.036	1.27

Recommended Green Infrastructure Practices	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	0.109	18	8,228	0.36	1,045	$5,225
Pervious pavement	0.122	20	9,208	0.41	1,135	$28,375

GREEN INFRASTRUCTURE RECOMMENDATIONS



Gebhardt & Kiefer, P.C.

- bioretention system
- pervious pavement
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 30' 60'

HARPER'S TABLE

RAP ID: 12

Subwatershed: Raritan River South Branch

Site Area: 130,622 sq. ft.

Address: 1316 NJ-31 N
Annandale, NJ 08801

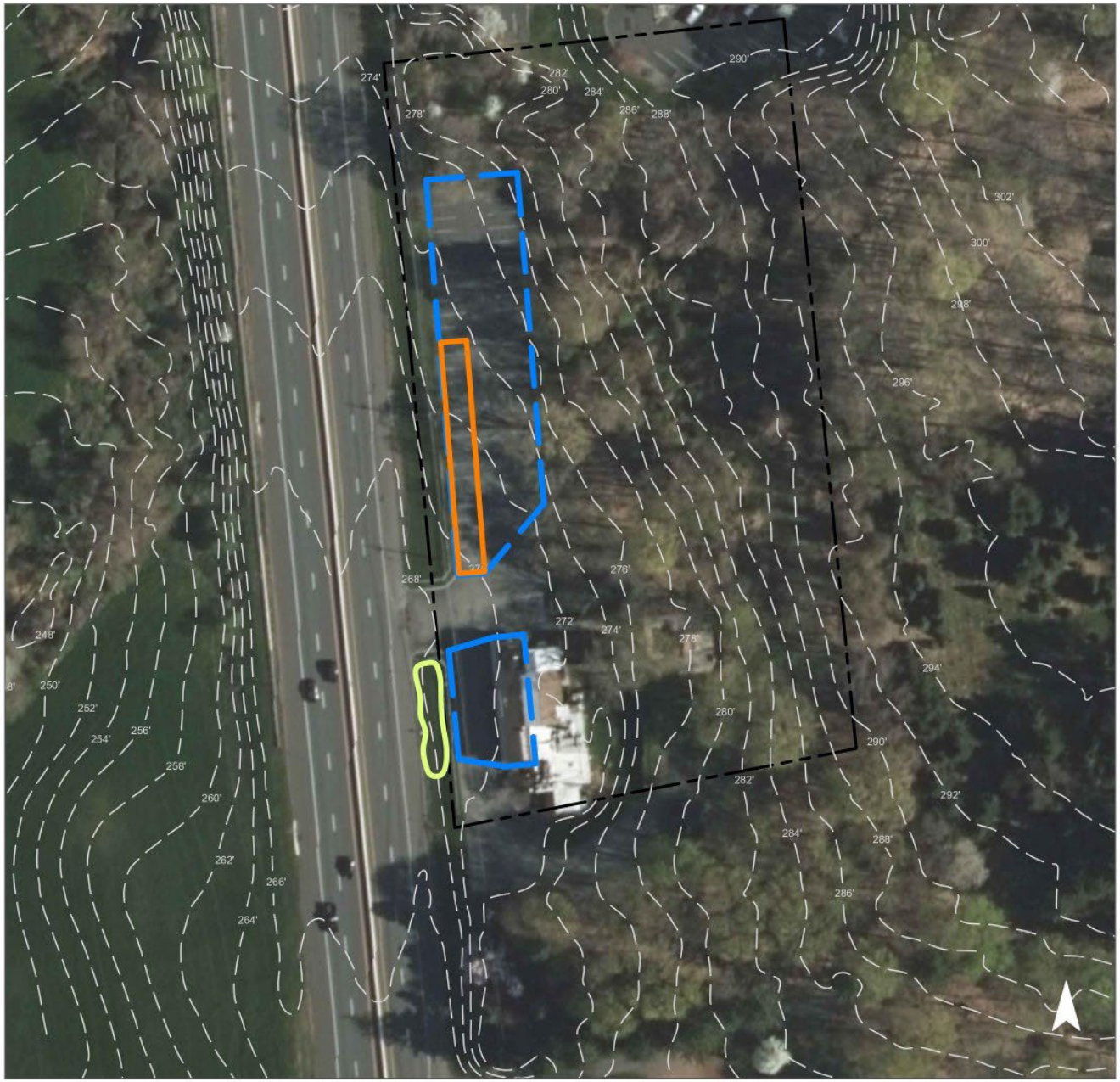
Block and Lot: Block 29, Lot 34

A bioretention system can be installed between the parking lot and roadway to capture the parking lot and rooftop runoff. Pervious pavement can be installed in the southeastern corner of the parking lot to capture, treat, and infiltrate stormwater runoff from the lot. A soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

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 44"
38	49,716	2.4	25.1	228.3	0.039	1.36

Recommended Green Infrastructure Practices	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	0.106	18	8,004	0.35	1,010	$5,050
Pervious Pavement	0.354	64	29,060	1.28	2,755	$68,875

GREEN INFRASTRUCTURE RECOMMENDATIONS



Harper's Table

- pervious pavement
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 50' 100'

NORTH HUNTERDON MUNICIPAL COURT

RAP ID: 13

Subwatershed: Raritan River South Branch

Site Area: 86,337 sq. ft.

Address: 1370 NJ-31
Annandale, NJ 08801

Block and Lot: Block 30, Lot 16

Pervious pavement can be installed in the southern parking lot to help remediate the pooling that occurs due to the pitch of the pavement. Bioretention systems can be installed west of the parking lot to allow for the capture of the parking lot runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

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 44"
52	44,900	2.2	22.7	206.2	0.035	1.23

Recommended Green Infrastructure Practices	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 systems	0.194	33	14,728	0.65	1,865	$9,325
Pervious pavement	0.095	16	7,188	0.32	650	$16,250

GREEN INFRASTRUCTURE RECOMMENDATIONS

North Hunterdon Municipal Court

- bioretention system
- pervious pavement
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 30' 60'

NORTH HUNTERDON REGIONAL HIGH SCHOOL

RAP ID: 14

Subwatershed: Raritan River South Branch

HUC14 ID: 02030105020070

Site Area: 2,122,493 sq. ft.

Address: 1445 NJ-31,
Annandale, NJ 08801

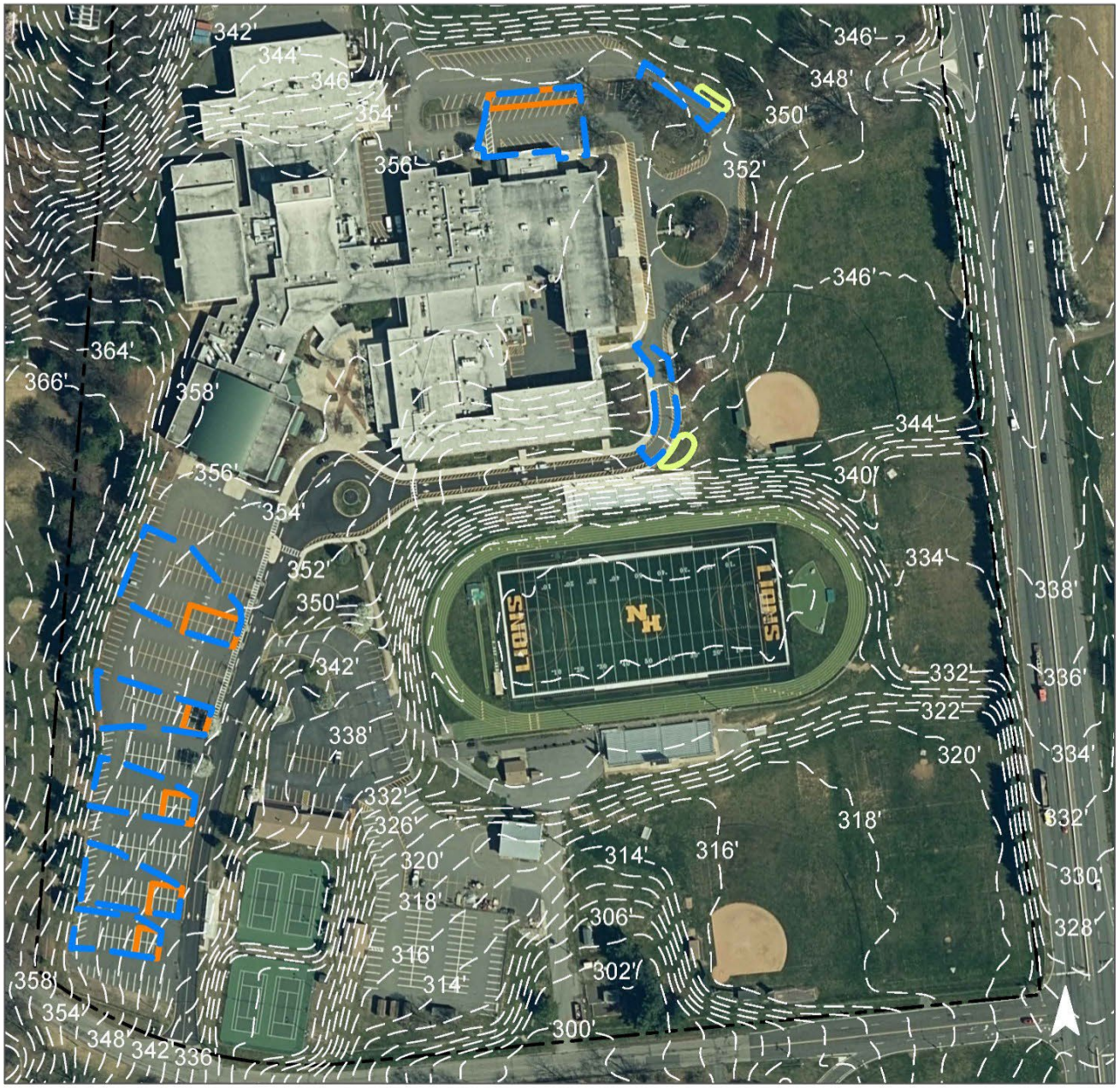
Block and Lot: Block 79, Lot 1

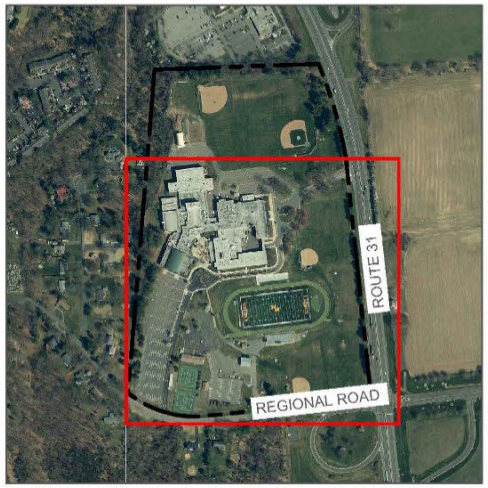
Parking spaces in the lots north and south of the building can be converted to porous pavement using trench drains to redirect, capture and infiltrate stormwater runoff from the pavement. Two rain gardens with trench drains and curb cuts can be installed in the grass areas to the east of the building to capture, treat, and infiltrate stormwater runoff from the pavement. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

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 49.4"
42	894,588	43.1	451.8	4,107.4	0.697	27.55

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	6,375	0.186	29	12,780	0.48	1,595	$15,950
Pervious pavement	45,565	1.333	200	91,360	3.43	8,740	$218,500

GREEN INFRASTRUCTURE RECOMMENDATIONS





North Hunterdon Regional High School

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 100' 200'

PATRICK MCGAHERAN SCHOOL

RAP ID: 15

Subwatershed: Raritan River South Branch

Site Area: 1,058,128 sq. ft.

Address: 63 Allerton Road
Lebanon, NJ 08833

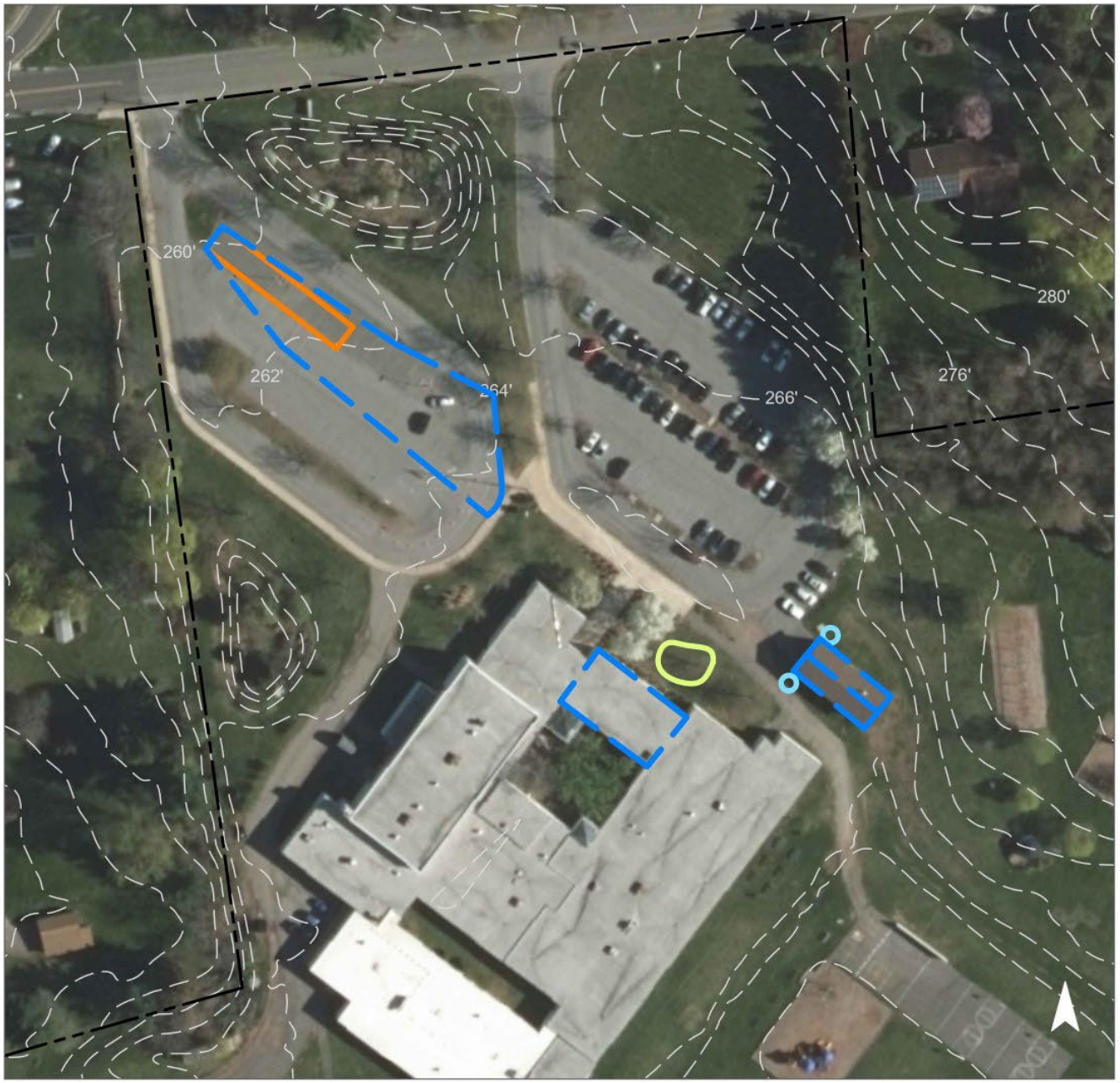
Block and Lot: Block 28.01, Lot 12.04

A bioretention system can be installed north of the building to capture, treat, and infiltrate rooftop runoff. Pervious pavement can be installed in the middle parking strip of the parking lot to capture and infiltrate stormwater. Two rainwater harvesting systems can be installed on the eastern building, and the water can then be used for watering gardens, washing vehicles, or for other non-potable uses. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

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 44"
21	219,947	10.6	111.1	1,009.9	0.171	6.03

Recommended Green Infrastructure Practices	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	0.078	13	5,939	0.26	755	$3,775
Pervious pavement	0.283	47	21,468	0.94	1,945	$48,625
Rainwater harvesting	0.043	7	3,254	0.14	1,500 (gal)	$3,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Patrick McGaheran School

- bioretention system
- pervious pavement
- rainwater harvesting
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 50' 100'

THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

RAP ID: 16

Subwatershed: Raritan River South Branch

Site Area: 294,085 sq. ft.

Address: 9 Red School House Road
Lebanon, NJ 08833

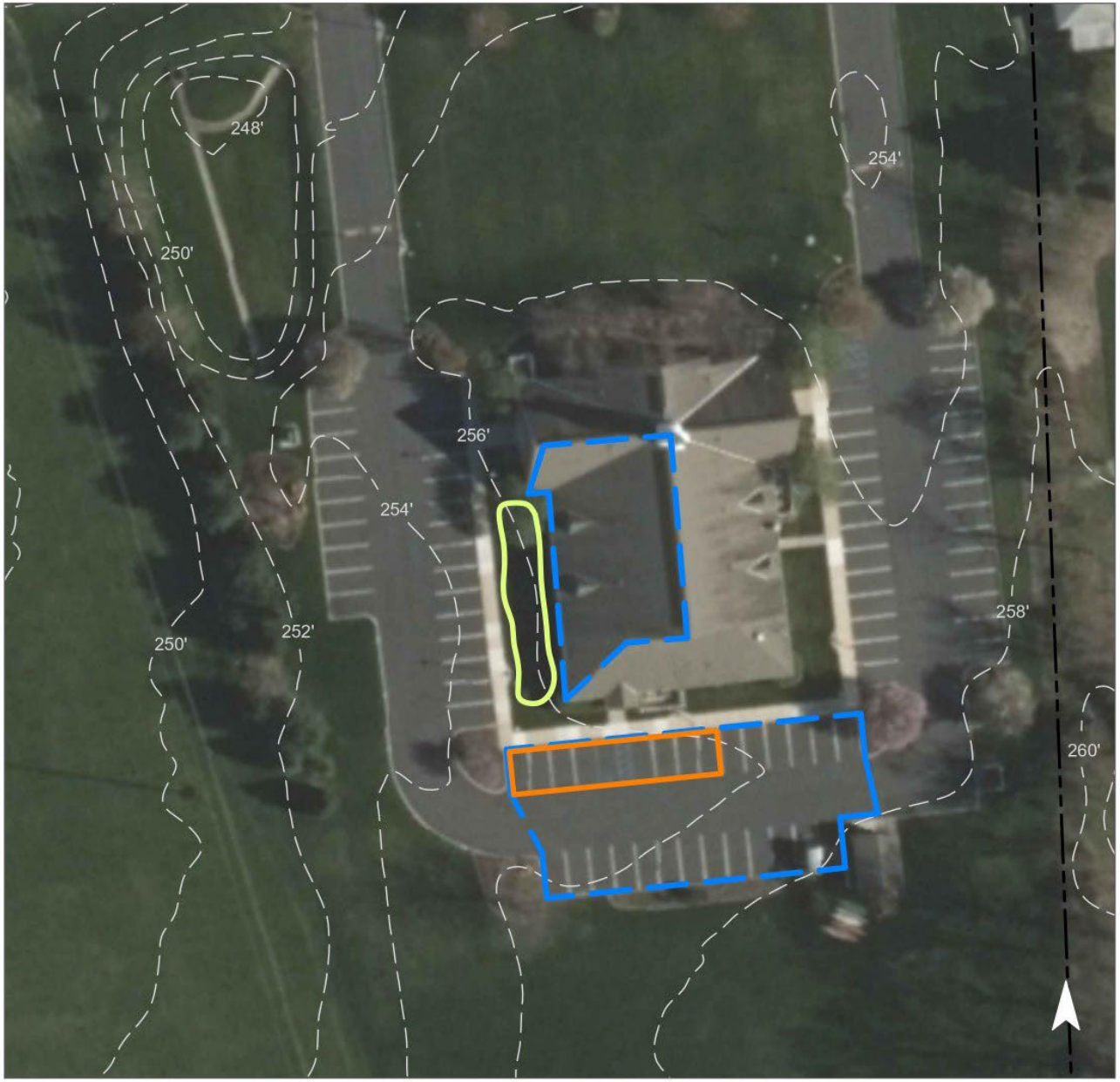
Block and Lot: Block 89, Lot 10.03

A bioretention system can be installed on the west side of the building to help infiltrate the stormwater from four downspouts. Pervious pavement can be installed in the south parking lot to capture the stormwater runoff from the lot. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

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 44"
20	57,581	2.8	29.1	264.4	0.045	1.58

Recommended Green Infrastructure Practices	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	0.112	19	8,505	0.37	1,080	$5,400
Pervious pavement	0.205	34	15,528	0.68	1,495	$37,375

GREEN INFRASTRUCTURE RECOMMENDATIONS



The Church of Jesus Christ of Latter-day Saints

- bioretention system
- pervious pavement
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 30' 60'

UNION COMMUNITY BIBLE CHURCH

RAP ID: 17

Subwatershed: Raritan River South Branch

Site Area: 43,455 sq. ft.

Address: 104 Allerton Road
Annandale, NJ 08801

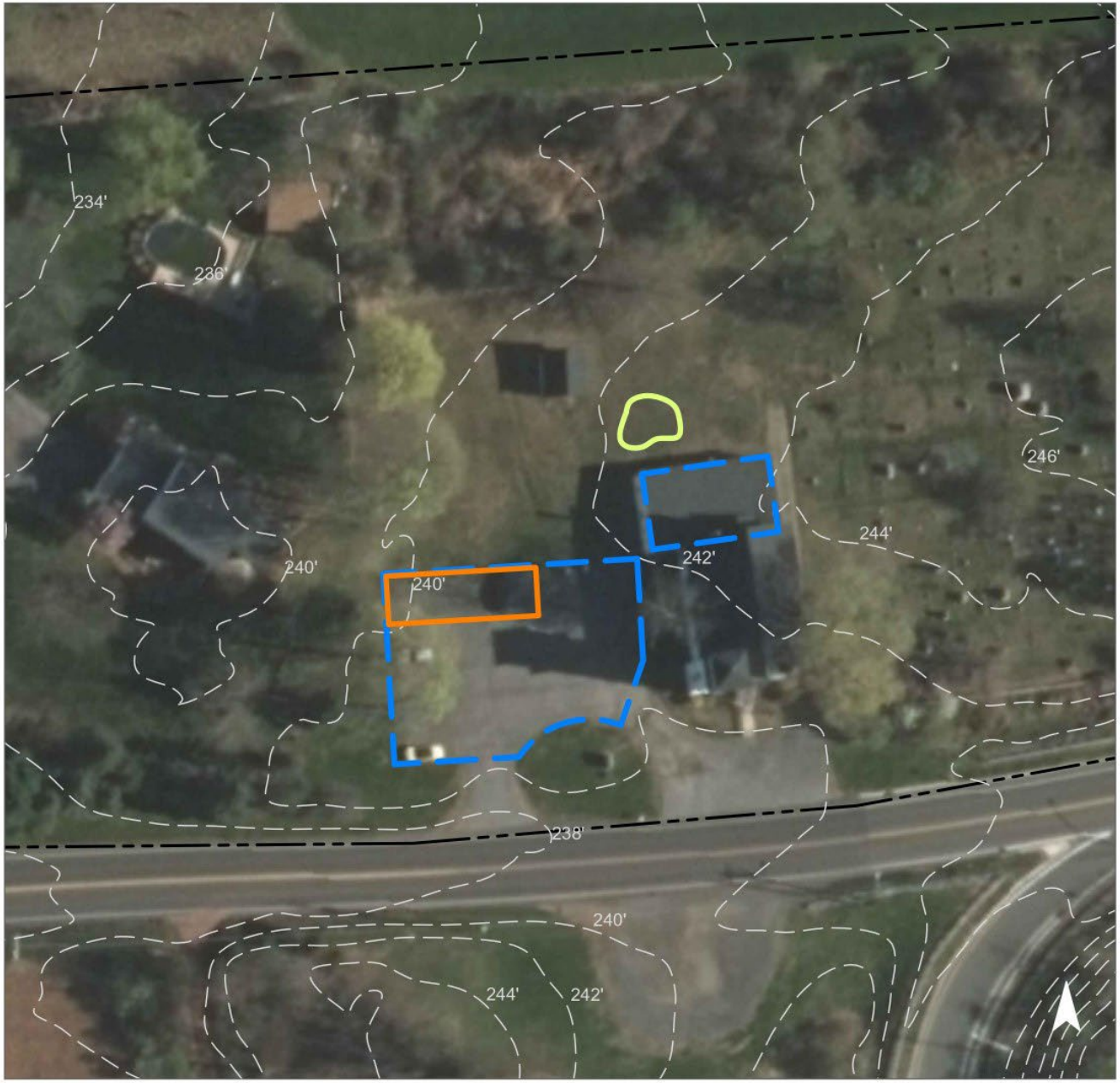
Block and Lot: Block 82, Lot 1

A bioretention system can be placed north of the church to help infiltrate the stormwater from the rooftop. Pervious pavement on the northwestern corner of the parking lot can capture, treat, and infiltrate the runoff from the parking lot. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

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 44"
50	21,707	1.0	11.0	99.7	0.017	0.60

Recommended Green Infrastructure Practices	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	0.039	7	2,962	0.13	375	$1,875
Pervious pavement	0.178	30	13,524	0.59	1,200	$30,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Union Community Bible Church

- bioretention system
- pervious pavement
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 30' 60'

ROUND VALLEY SCHOOL

RAP ID: 18

Subwatershed: Rockaway Creek South Branch

HUC14 ID: 02030105050100

Site Area: 1,099,457 sq. ft.

Address: 128 Cokesbury Road, Lebanon, NJ 08833

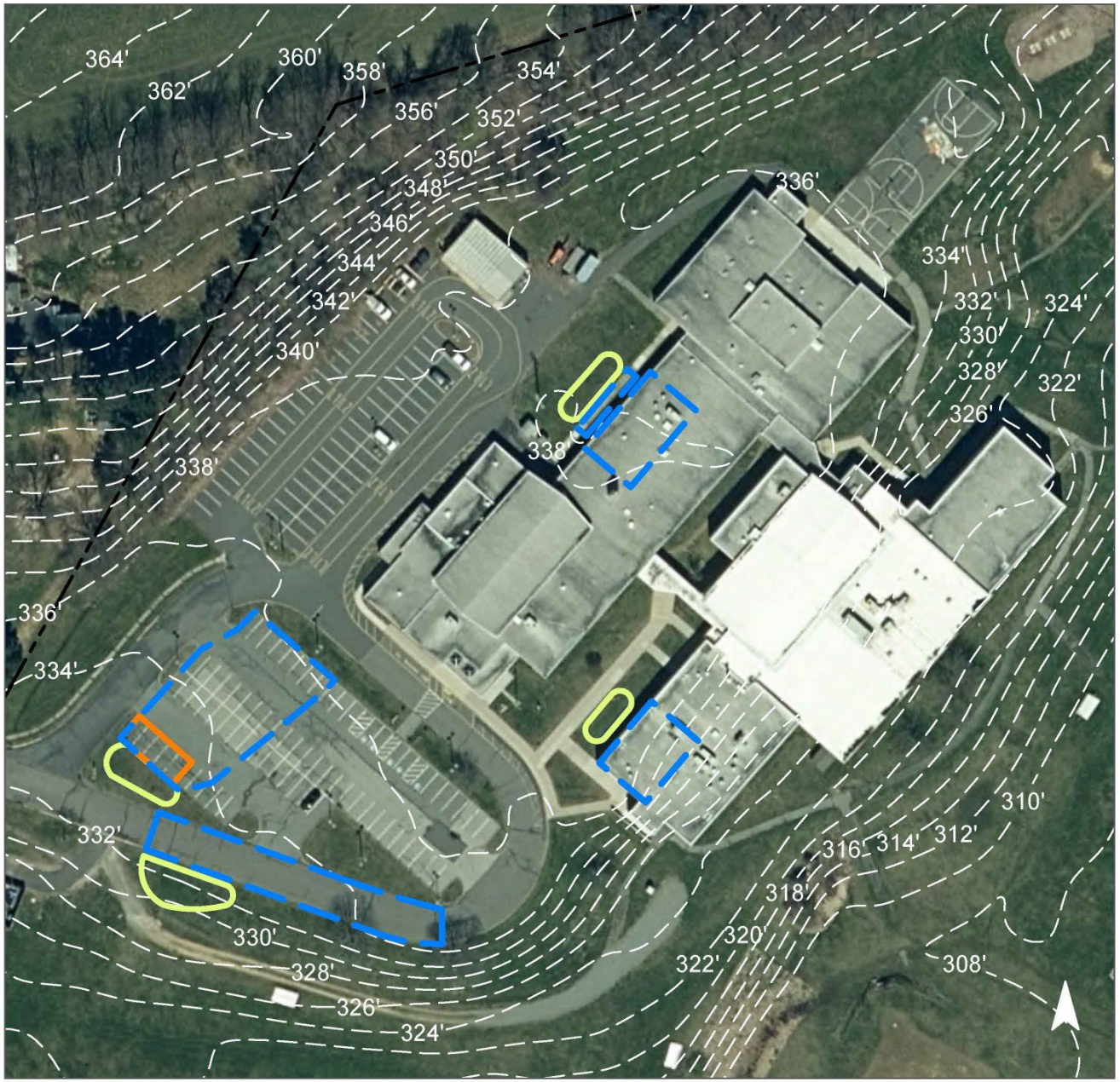
Block and Lot: Block 3, Lot 19

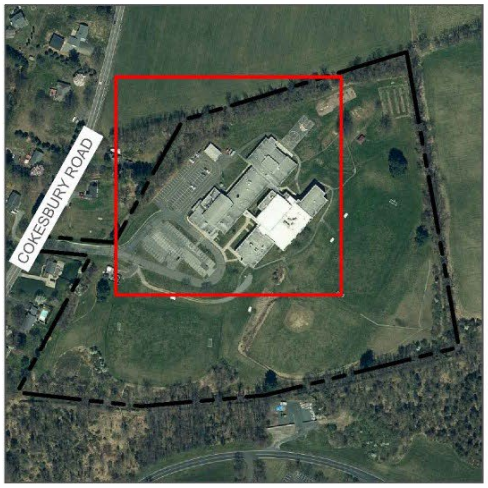
Several rain gardens can be installed in the grass areas around the building or by the parking lot to capture, treat, and infiltrate stormwater runoff from the roof or pavement. Downspout disconnection and redirection, trench drains, and curb cuts will be required for some of these gardens. Parking spaces in the lot in front of one of the gardens can be converted to porous pavement to capture and infiltrate stormwater runoff from the asphalt. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

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 49.4"
21	227,511	11.0	114.9	1,044.6	0.177	7.01

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	13,885	0.406	61	27,840	1.05	3,470	$34,700
Pervious pavement	4,590	0.134	21	9,200	0.35	875	$21,875

GREEN INFRASTRUCTURE RECOMMENDATIONS





Round Valley School

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 50' 100'

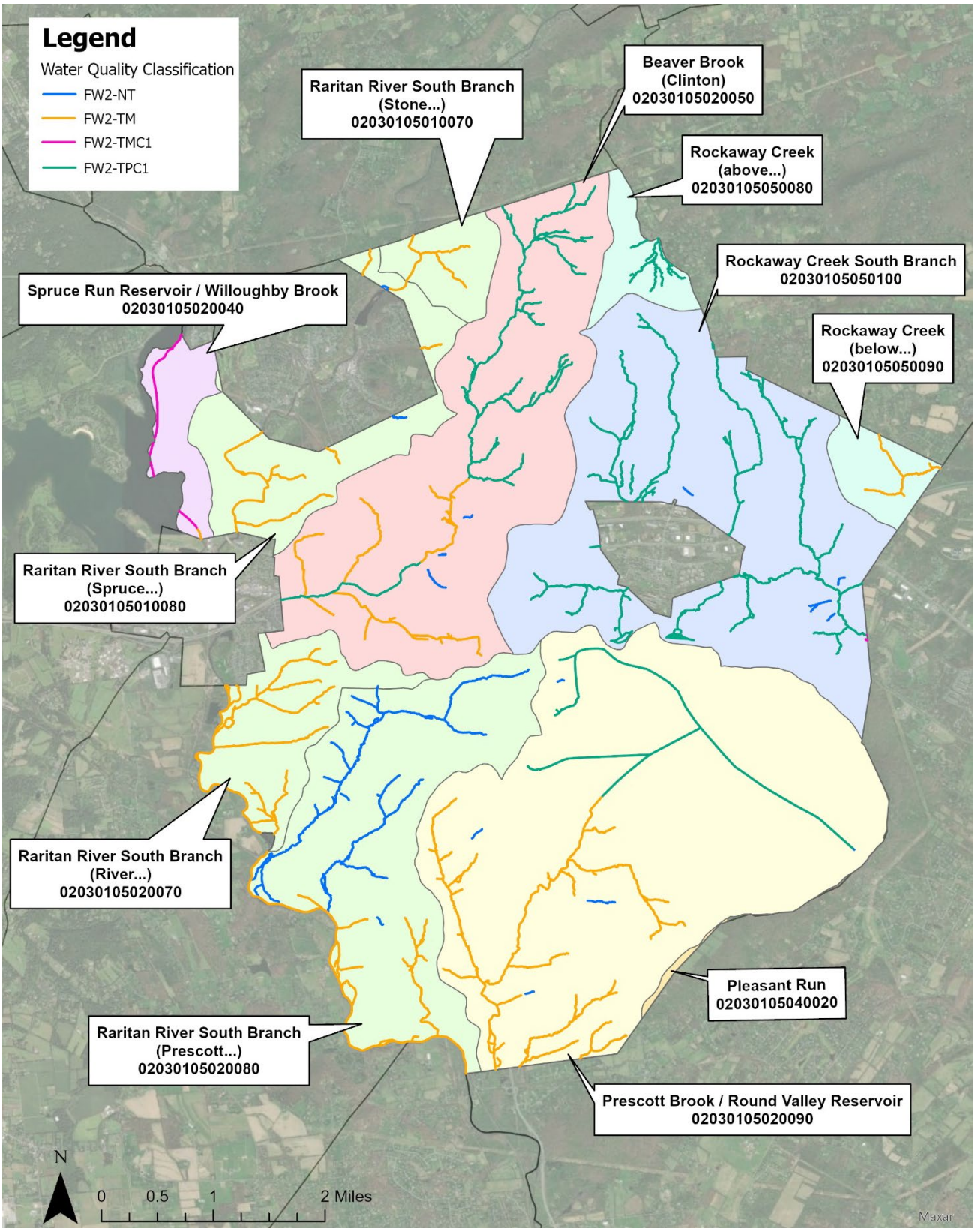


Figure 13. Water Quality Classification of Surface Waters in Clinton Township

Table 10. Water Quality Classification of Surface Waters in Clinton Township

Surface Water Quality Classification	Surface Water Quality Code	Miles	Percent of Municipal Streams
Freshwater 2, non-trout	FW2-NT	12.2	12.3%
Freshwater 2, trout production, Category One	FW2-TPC1	41.6	42.0%
Freshwater 2, trout maintenance	FW2-TM	43.8	44.2%
Freshwater 2, trout maintenance, Category One	FW2-TMC1	1.5	1.5%