Chester Township

Introduction

Located in Morris County in New Jersey, Chester Township covers about 29.2 square miles. With a population of 7,838 (2020 United States Census), Chester Township consists of 26.6% of urban land uses by area. Of that urban land use, approximately 75.7% 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 62.9% of Chester Township.

Chester Township contains portions of twelve subwatersheds (Table 1). There are approximately 103.9 miles of rivers and streams within the municipality; these include Burnett Brook and its tributaries, tributaries to Drakes Brook, Gladstone Brook and its tributaries, Hacklebarney Brook and its tributaries, Herzog Brook and its tributaries, Lamington River and its tributaries, Peapack Brook and its tributaries, tributaries to the South Branch Raritan River, Tanners Brook, Trout Brook, and several uncoded tributaries. Chester 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 Chester Township

Subwatershed	HUC14
Drakes Brook (below Eyland Avenue)	02030105010020
Raritan River South Branch (Long Valley bridge to 74d44m15s)	02030105010050
Lamington River (Hillside Road to Route 10)	02030105050020
Lamington River (Furnace Road to Hillside Road)	02030105050030
Lamington River (Pottersville gage to Furnace Road)	02030105050040
Pottersville tributary (Lamington River)	02030105050050
Lamington River (Herzog Brook to Pottersville gage)	02030105050130
Burnett Brook (above Old Mill Road)	02030105060020
Raritan River North Branch (including McVickers to India Brook)	02030105060030

Peapack Brook (above/including Gladstone Brook)	02030105060050
Peapack Brook (below Gladstone Brook)	02030105060060
Middle Brook (North Branch Raritan River)	02030105060080

The purpose of this report is to provide a comprehensive understanding of key, defining features within the subwatersheds throughout Chester 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 Chester 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 Chester Township in relation to the Study Area. Figure 2 shows the portions of the twelve HUC14s in Chester Township and highlights the HUC14s that are contained within the study area. Figure 3 illustrates the land use in Chester Township. A detailed land use analysis and nonpoint source loading analysis was completed for each HUC14 in Chester Township and is presented in Table 2. Figure 4 shows the impervious cover in Chester Township based upon NJDEP's 2015 impervious cover layer. An impervious cover analysis was completed for each HUC14 in Chester 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". No retention basins with vegetative shoreline buffers were identified in Chester Township within the study area.

The Q-Farms in the study area of Chester Township, which includes the entire municipality, 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. It is important to note that the land use on a Q-Farm is often not all agriculture. Figure 7 illustrates the land use on the Q-Farms, which is summarized in Table 6. There are 1,916.7 acres of agricultural land use in Chester Township, all of which lie within the study area for this Watershed Restoration and Protection Plan. There are 166 Q-Farms in Chester Township, totaling 3,222.1 acres. Within the 166 Q-Farms, there are approximately 1,328.8 acres of agricultural land use. Aerial photography (see Figure 8) 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, recommendations for the agricultural lands in the study area in Chester Township are presented in Table 7.

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. Twelve HUC14s are included in the study area (02030105010020, 02030105010050, 02030105050020, 02030105050030, 02030105050040, 02030105050050, 02030105050130, 02030105060020, 02030105060030, 02030105060050, 02030105060060, 02030105060080). Within these twelve HUC14s, there are 235.7 acres of buildings and 399.4 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 Chester Township, approximately 14.7 acres of rooftop runoff would be managed with 2.95 acres of rain gardens. The plan also calls for the management of 10% of the roadways with bioswales. For the study area within Chester Township, approximately 39.9 acres of roadway would be managed, or 11.0 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

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 9). Available information for each parcel in the study area is presented in Table 8. Class 15E parcels were excluded from the assessment. Eleven of these properties offer opportunities to be retrofitted with green infrastructure to help reduce pollutant loads. These properties are identified in Table 8 and represent watershed improvement projects that can be included in the municipality's Watershed Improvement Plan.

Figure 10 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 six classifications that apply to the streams in Chester Township. Figure 11 depicts the water quality classifications of surface waters throughout Chester Township and Table 9

summarizes the total miles and percentage of each surface water quality classification in the municipality.

Areas Prone to Flooding

An administrator from Chester Township has identified several locations throughout the municipality that are particularly susceptible to flooding during heavy rainfall or storm events. Flooding on South Road between Locust and Cromwell Drive has been observed when adjacent Burnett Brook overflows its banks. A bridge along a trail in Tiger Brook Park washes out when Tiger Brook floods as well, posing risks to nearby infrastructure and public safety. Figure 12 shows the locations of the aforementioned areas of concern.

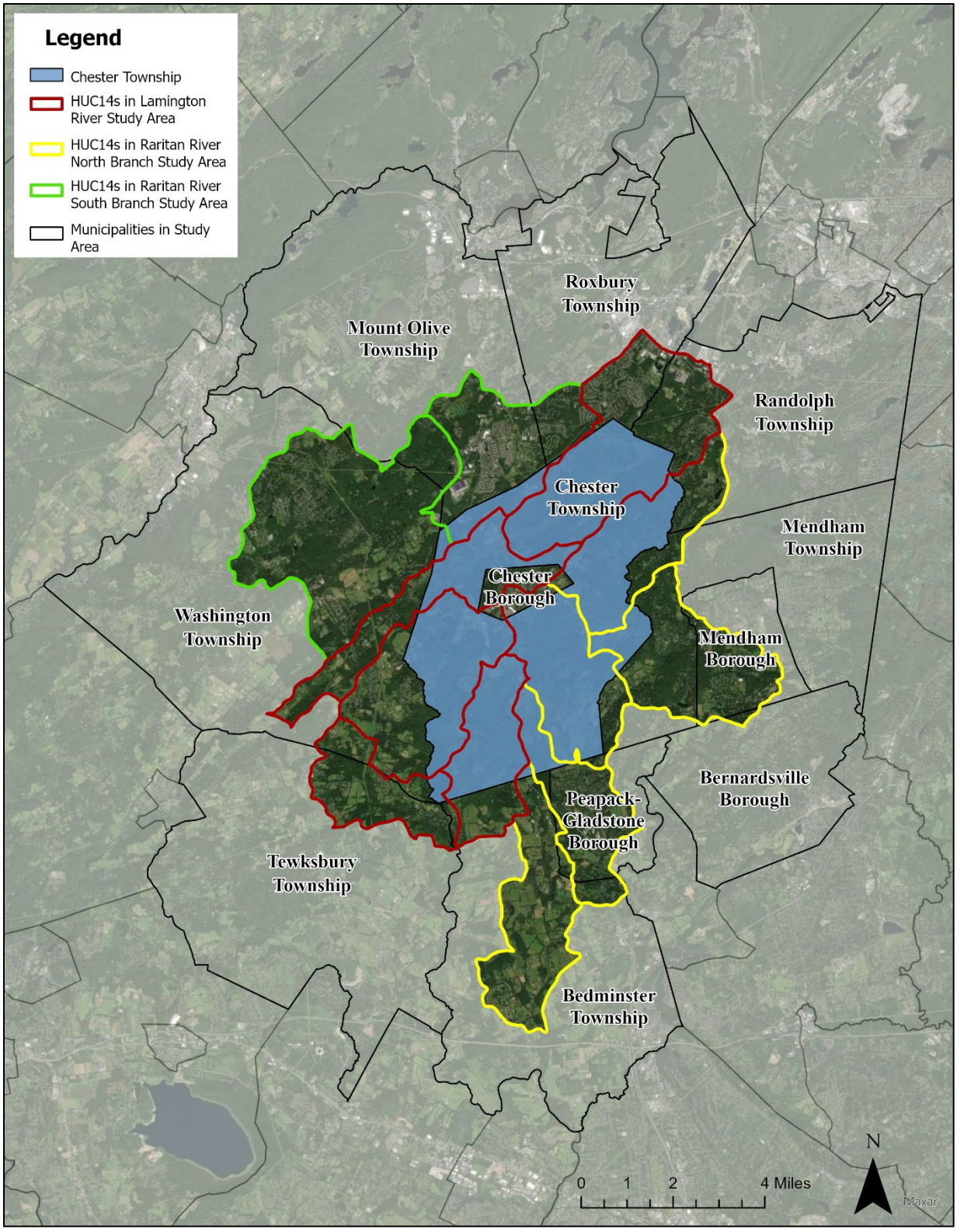


Figure 1: Municipalities in the Study Area

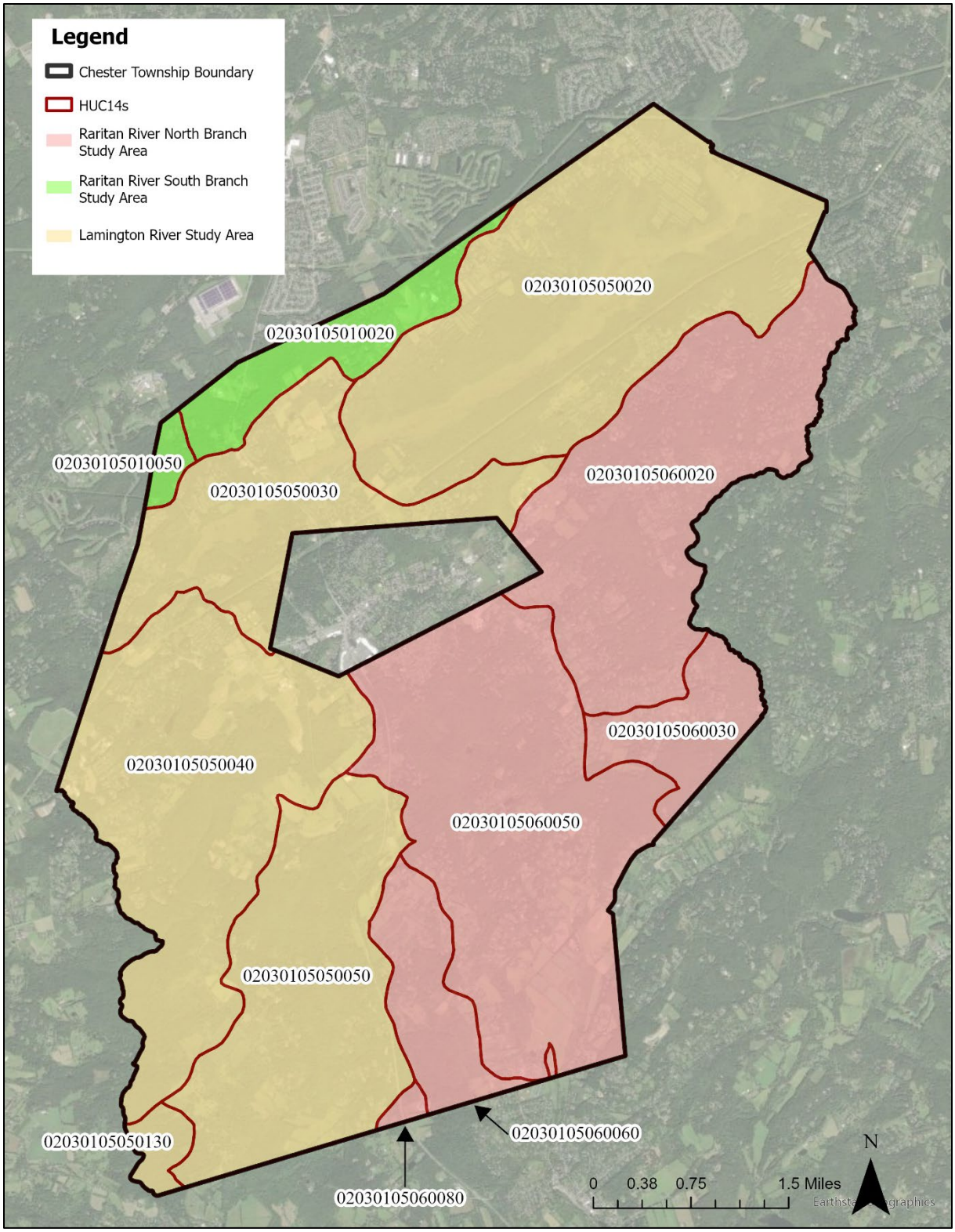


Figure 2: Portions of twelve HUC14s are in Chester Township

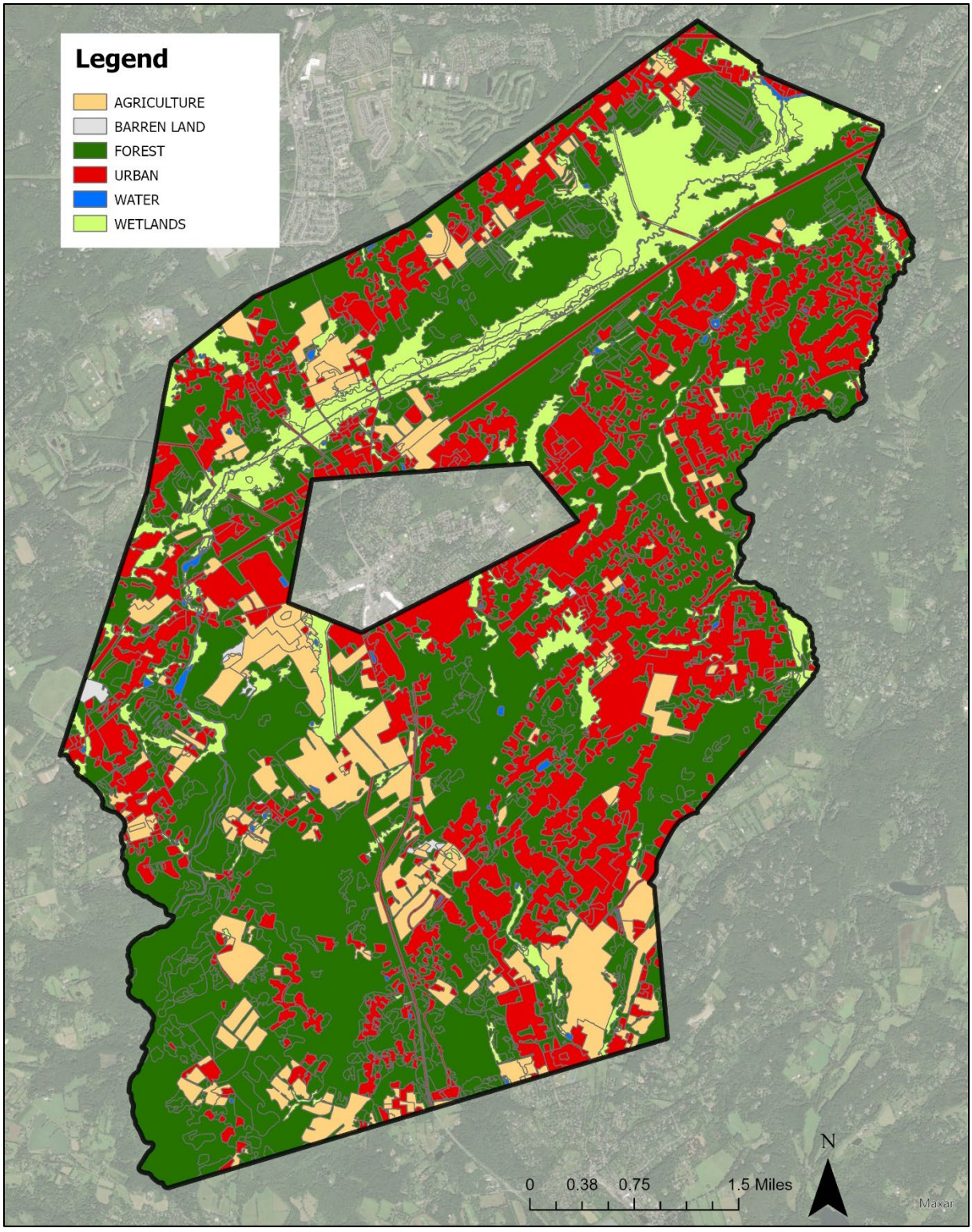


Figure 3: Land Use in Chester Township

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

Land Use Type	Area (acres)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Load (lbs/yr)
02030105010020				
Agriculture	85.0	110.5	849.7	25,489.9
Barren Land	0.0	0.0	0.0	0.0
Forest	332.0	33.2	996.0	13,280.5
Urban	199.3	279.0	2,989.5	27,901.8
Water	1.9	0.2	5.7	76.4
Wetlands	39.8	4.0	119.4	1,591.9
TOTAL =	**658.0**	**426.8**	**4,960.3**	**68,340.4**
02030105010050				
Agriculture	3.0	4.0	30.5	914.6
Barren Land	0.0	0.0	0.0	0.0
Forest	64.6	6.5	193.9	2,585.1
Urban	23.6	33.0	353.7	3,300.8
Water	0.0	0.0	0.0	0.0
Wetlands	14.0	1.4	42.1	560.8
TOTAL =	**105.3**	**44.8**	**620.1**	**7,361.3**
02030105050020				
Agriculture	146.5	190.5	1,465.3	43,960.4
Barren Land	0.0	0.0	0.0	0.0
Forest	1,799.5	180.0	5,398.6	71,980.9
Urban	546.8	765.5	8,201.7	76,549.4
Water	28.9	2.9	86.8	1,157.6
Wetlands	1,079.7	108.0	3,239.2	43,189.6
TOTAL =	**3,601.5**	**1,246.8**	**18,391.7**	**236,837.9**
02030105050030				
Agriculture	175.7	228.4	1,756.6	52,697.0
Barren Land	2.0	1.0	10.1	121.5
Forest	560.0	56.0	1,680.1	22,401.3
Urban	530.5	742.7	7,957.0	74,265.8
Water	14.7	1.5	44.1	588.2
Wetlands	329.7	33.0	989.2	13,189.6
TOTAL =	**1,612.6**	**1,062.5**	**12,437.2**	**163,263.4**
02030105050040				
Agriculture	499.0	648.7	4,989.7	149,691.9
Barren Land	26.8	13.4	133.9	1,606.5
Forest	1,688.3	168.8	5,065.0	67,533.3
Urban	568.5	795.9	8,527.2	79,586.8
Water	45.2	4.5	135.5	1,807.2
Wetlands	211.3	21.1	633.8	8,450.4

TOTAL =	**3,039.0**	**1,652.4**	**19,485.1**	**308,676.2**
02030105050050				
Agriculture	397.4	516.6	3,974.0	119,220.6
Barren Land	0.5	0.3	2.7	32.2
Forest	1,543.7	154.4	4,631.1	61,747.4
Urban	282.6	395.6	4,238.3	39,557.1
Water	3.2	0.3	9.7	129.9
Wetlands	20.5	2.0	61.4	818.8
TOTAL =	**2,247.9**	**1,069.2**	**12,917.2**	**221,506.1**
02030105050130				
Agriculture	1.8	2.3	17.8	533.5
Barren Land	0.0	0.0	0.0	0.0
Forest	151.5	15.2	454.6	6,061.5
Urban	0.4	0.5	5.8	54.4
Water	2.6	0.3	7.9	105.7
Wetlands	0.0	0.0	0.0	0.0
TOTAL =	**156.3**	**18.3**	**486.2**	**6,755.1**
02030105060020				
Agriculture	53.5	69.5	534.5	16,035.1
Barren Land	0.0	0.0	0.0	0.0
Forest	1,240.9	124.1	3,722.7	49,635.8
Urban	1,184.3	1,658.0	17,763.9	165,796.7
Water	15.2	1.5	45.6	607.9
Wetlands	118.9	11.9	356.6	4,755.3
TOTAL =	**2,612.7**	**1,865.0**	**22,423.4**	**236,830.9**
02030105060030				
Agriculture	41.4	53.8	414.2	12,424.7
Barren Land	0.0	0.0	0.0	0.0
Forest	283.1	28.3	849.2	11,322.4
Urban	215.5	301.7	3,232.9	30,173.9
Water	4.2	0.4	12.5	166.9
Wetlands	43.0	4.3	129.1	1,721.6
TOTAL =	**587.2**	**388.6**	**4,637.9**	**55,809.4**
02030105060050				
Agriculture	360.1	468.2	3,601.2	108,036.2
Barren Land	1.6	0.8	8.1	97.4
Forest	1,545.2	154.5	4,635.6	61,808.4
Urban	1,285.3	1,799.5	19,280.2	179,948.9
Water	10.4	1.0	31.2	415.4
Wetlands	166.0	16.6	497.9	6,638.1
TOTAL =	**3,368.6**	**2,440.6**	**28,054.2**	**356,944.4**
02030105060060				
Agriculture	144.1	187.3	1,440.9	43,226.1

Barren Land	6.6	3.3	33.0	396.3
Forest	373.6	37.4	1,120.9	14,944.8
Urban	124.8	174.8	1,872.6	17,477.7
Water	1.8	0.2	5.5	72.7
Wetlands	7.7	0.8	23.1	308.5
TOTAL =	**658.7**	**403.7**	**4,496.0**	**76,426.2**
02030105060080				
Agriculture	9.3	12.1	93.1	2,792.3
Barren Land	0.0	0.0	0.0	0.0
Forest	20.2	2.0	60.7	809.5
Urban	17.2	24.1	258.1	2,409.1
Water	0.0	0.0	0.0	0.0
Wetlands	0.0	0.0	0.0	0.0
TOTAL =	**46.8**	**38.2**	**411.9**	**6,011.0**
All HUCs				
Agriculture	1,916.7	2,491.8	19,167.4	575,022.4
Barren Land	37.6	18.8	187.8	2,253.9
Forest	9,602.8	960.3	28,808.3	384,110.9
Urban	4,978.7	6,970.2	74,681.0	697,022.4
Water	128.2	12.8	384.6	5,128.0
Wetlands	2,030.6	203.1	6,091.9	81,224.7
TOTAL =	**18,694.6**	**10,656.9**	**129,321.0**	**1,744,762.2**

Impervious Cover Analysis

NJDEP's Open Data impervious surface GIS data layer depicts surfaces throughout Chester 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 Chester Township. Based upon the NJDEP impervious surface data, Chester Township has impervious cover totaling 6.6%. Table 3 shows impervious cover for each HUC14. The extent of the impervious cover in Chester 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, Chester 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.

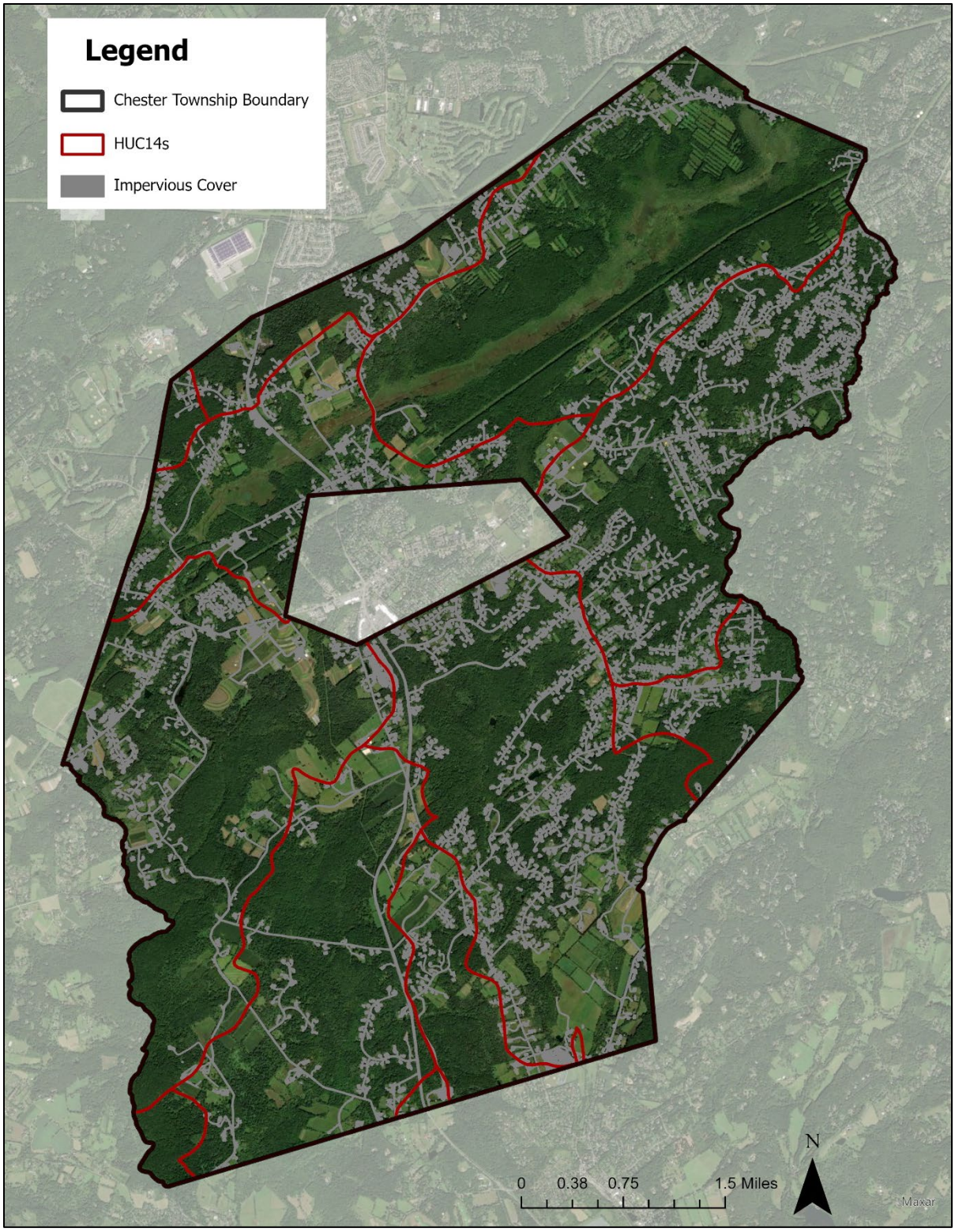


Figure 4: Impervious Cover in Chester Township

Table 3: Impervious Cover Analysis by HUC14 for Chester Township

Class	Area (acres)	HUC Impervious Cover (%)
02030105010020		
Building	11.19	
Other	21.87	
Road	18.56	
TOTAL =	**51.6**	**7.8%**
02030105010050		
Building	1.33	
Other	3.22	
Road	1.71	
TOTAL =	**6.3**	**5.9%**
02030105050020		
Building	19.94	
Other	50.82	
Road	34.16	
TOTAL =	**104.9**	**2.9%**
02030105050030		
Building	22.05	
Other	61.64	
Road	38.67	
TOTAL =	**122.4**	**7.6%**
02030105050040		
Building	28.76	
Other	89.91	
Road	46.76	
TOTAL =	**165.4**	**5.4%**
02030105050050		
Building	11.26	
Other	35.57	
Road	51.04	
TOTAL =	**97.9**	**4.4%**
02030105050130		
Building	0.03	
Other	0.06	
Road	0.00	
TOTAL =	**0.1**	**0.1%**
02030105060020		
Building	59.44	
Other	143.35	
Road	84.67	
TOTAL =	**287.5**	**11.0%**
02030105060030		
Building	9.22	
Other	23.29	
Road	19.97	
TOTAL =	**52.5**	**8.9%**

02030105060050		
Building	64.19	
Other	148.45	
Road	88.29	
TOTAL =	**300.9**	**8.9%**
02030105060060		
Building	6.82	
Other	17.35	
Road	13.60	
TOTAL =	**37.8**	**5.7%**
02030105060080		
Building	1.53	
Other	3.25	
Road	1.91	
TOTAL =	**6.7**	**14.3%**
All HUCs		
Building	235.73	
Other	598.77	
Road	399.35	
TOTAL =	**1,233.9**	**6.6%**

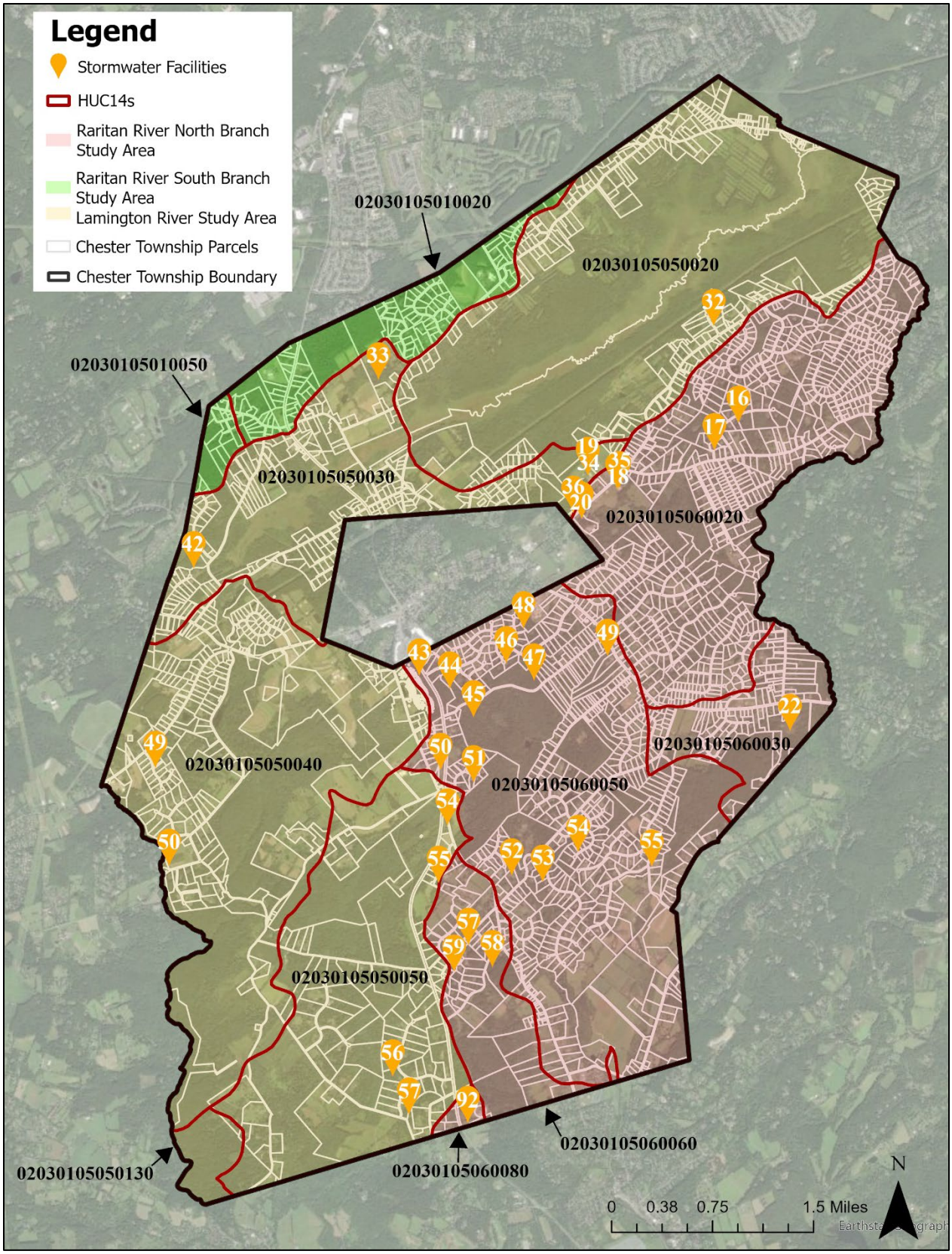


Figure 5: Stormwater Facilities in the Study Area of Chester Township

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

Lamington River Study Area		
ID	**Address**	**Type**
32	10 Horton Dr	N
33	85 Pleasant Hill Rd	D
34	233 North Rd	N
36	133 North Rd	N
42	1 Carlisle Ct	D
49	1 Highland Dr	D
50	1 Trout Brook Ct	N
54	1 Hunters Trl	N
55	10 Hall Rd	D
56	13 Spring Lake Dr	N
57	4 Bamboo Ln	D
Raritan River North Branch Study Area		
ID	**Address**	**Type**
16	11 S Gables Dr	D
17	Warren Cutting Rd	D
18	233 North Rd	I
19	233 North Rd	I
20	North Rd	N
22	480 Route 24	D
35	233 North Rd	I
43	499 US Highway 206 S	D
44	38 Colby Farm Rd	N
45	4 Skinner Trl	N
46	24 Colby Farm Rd	RB
47	17 Colby Farm Rd	N
48	250 Rt 24	D
49	361 Route 24 W	D
50	1250 US Highway 206	D
51	3 Colt Run	D
52	5 Heath Dr	N
53	1 Beacon Hill Dr	N
54	10 Sugar Maple Row	N
55	42 E Fox Chase Rd	N
57	75 Fox Chase Rd	N
58	85 Rogers Rd	D
59	54 Fox Chase Rd	D/N*
92	2 Rogers Rd	D

"D" = Detention, "R" = Retention, "N" = Naturalized, "I" = Infiltration

*Basin is partially naturalized, but mostly mowed

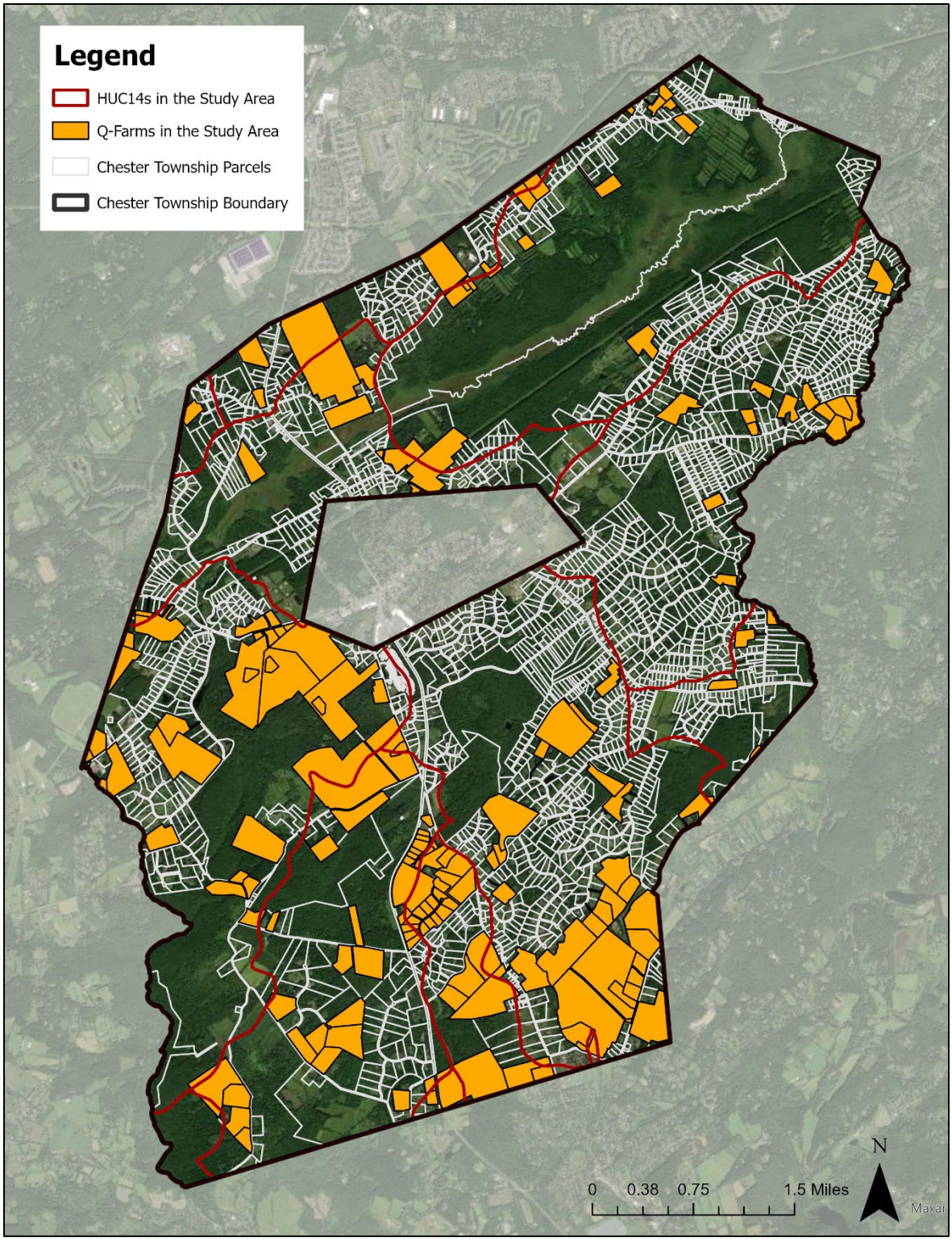


Figure 6: Q-Farm Parcels in the Study Area of Chester Township

Table 5: Q-Farm Parcels in the Study Area of Chester Township

Block	Lot	Q-Code	Prop Class	Location
1	13	QFARM	3B	770 Pottersville Rd
1	14	QFARM	3B	650 Pottersville Rd
1	14.01	QFARM	3B	740 Pottersville Rd
1	15	QFARM	3B	700 Pottersville Rd
1	26	QFARM	3B	55 Hacklebarney Rd
3	14	QFARM	3B	55 Lamerson Rd
3	16.01	QFARM	3B	5 Luce Dr
3	16.02	QFARM	3B	6 Luce Dr
3	16.04	QFARM	3B	299 Longview Rd
3	16.05	QFARM	3B	297 Longview Rd
3	16.06	QFARM		Howell Dr & Luce Ct
3	16.09	QFARM	3B	3 Howell Dr
3	16.15	QFARM	3B	57 Lamerson Rd
3.01	2.03	QFARM	3B	8 Daly Rd
4	35.01	QFARM	3B	1200 Old Chester Gladston
4	35.02	QFARM	3B	1100 Old Chester Rd
4	36	QFARM	3B	2 Rogers Rd
4	41	QFARM	3B	8 Rogers Rd
4	42	QFARM	3B	Old Chester Gladstone Rd
4	43	QFARM	3B	20 Rogers Rd
4	44	QFARM	3B	600 Old Chester Gladstone
7	12.05	QFARM	3B	158 - 158-A Fox Chase Rd
7	13.22	QFARM	3B	60 East Fox Chase Rd
7	13.23	QFARM	3B	48 E Fox Chase Rd
7	13.24	QFARM	3B	5 Hickory Dr
7	13.25	QFARM	3B	11-B Hickory Dr
7	13.26	QFARM	3B	11-A Hickory Dr
7	14.01	QFARM	3B	222 E Fox Chase Rd
7	14.03	QFARM	3B	55 Mendham Rd
7	15	QFARM	3B	15 Mendham Rd
7	15.01	QFARM	3B	Mendham Rd
7	15.02	QFARM	3B	Mendham Rd
7	15.03	QFARM	3B	Mendham Rd
7	15.04	QFARM	3B	15 Mendham Rd
7	17.02	QFARM	3B	35 Beacon Hill Dr
7	27	QFARM	3B	1015 Old Chester Gladston
7	44	QFARM	3B	15 St Bernards Rd
7	44.01	QFARM	3B	11 St Bernards Rd
7	44.02	QFARM	3B	15 St Bernards Rd
7.01	4.01	QFARM	3B	398 Fox Chase Rd
7.01	7.07	QFARM	3B	38 E Fox Chase Rd

8	7	QFARM	3B	20 Mendham Rd
9	4.02	QFARM	3B	11 Winston Farm Ln
9	16	QFARM	3B	23 Mt Paul Rd
10	3	QFARM	3B	185 Fox Chase Rd
10	4	QFARM	3B	201 Fox Chase Rd
10	17	QFARM	3B	255 Fox Chase Rd
10.04	12	QFARM	3B	6 Pond View Rd
10.05	31	QFARM	3B	378 Route 24
10.05	31.04	QFARM	3B	37 Cliffwood Rd
10.05	48	QFARM	3B	75 Cliffwood Rd
12	1.01	QFARM	3B	450 Old Chester Gladstone
12	1.03	QFARM	3B	1901 Route 206
12	1.04	QFARM	3B	16 Hall Rd
12	1.05	QFARM	3B	14 Hall Rd
12	1.06	QFARM	3B	12 Hall Rd
12	1.07	QFARM	3B	10 Hall Rd
12	1.08	QFARM	3B	8 Hall Rd
12	1.09	QFARM	3B	6 Hall Rd
12	1.11	QFARM	3B	2 Hall Rd
12	1.13	QFARM	3B	3 Hall Rd
12	1.14	QFARM	3B	5 Hall Rd
12	1.15	QFARM	3B	21 Knight Dr
12	1.16	QFARM	3B	19 Knight Dr
12	1.17	QFARM	3B	17 Knight Dr
12	1.18	QFARM	3B	15 Knight Dr
12	1.19	QFARM	3B	11 Knight Dr
12	1.2	QFARM	3B	9 Knight Dr
12	1.21	QFARM	3B	7 Knight Dr
12	1.22	QFARM	3B	5 Knight Dr
12	1.23	QFARM	3B	3 Knight Dr
12	1.24	QFARM	3B	1 Knight Dr
12	1.25	QFARM	3B	2 Knight Dr
12	1.26	QFARM	3B	4 Knight Dr
12	1.27	QFARM	3B	6 Knight Dr
12	1.28	QFARM	3B	8 Knight Dr
12	1.29	QFARM	3B	10 Knight Dr
12	3.01	QFARM	3B	444 Old Chester Rd
12	3.02	QFARM	3B	446 Old Chester Gladstone
12	3.03	QFARM	3B	444 Old Chester Gladstone
12	4	QFARM	3B	500 Old Chester Gladstone
13	2	QFARM	3B	120 Lamerson Rd
13	3.01	QFARM	3B	250 Lamerson Rd
13	3.02	QFARM	3B	210 Lamerson Rd
13	4.03	QFARM	3B	201 Pottersville Rd

13	7	QFARM	3B	100 Pottersville Rd
15	2	QFARM	3B	20 Hacklebarney Rd
15	3	QFARM	3B	55 Hacklebarney Rd
15	9	QFARM	3B	260 Pottersville Rd
15	27	QFARM	3B	80 Route 24
15	28.01	QFARM	3B	100 Route 24
15	28.02	QFARM	3B	2 Alstede Farms Ln
15	28.03	QFARM	3B	182 Old Ch Gl Rd
15	28.04	QFARM	3B	182 Old Ch Gl Rd
15	28.05	QFARM	3B	84 Route 24
15	28.06	QFARM	3B	84 Route 24
15	28.07	QFARM	3B	82 Route 24
15	28.08	QFARM	3B	82 Route 24
15	29	QFARM	3B	92 Route 24
15	30	QFARM	3B	94 Route 24
15	40.01	QFARM	3B	200 Old Chester Gladstone
15	42.01	QFARM	3B	300 Old Chester Gladstone
15	42.02	QFARM	3B	300 Old Chester Gladstone
15	45	QFARM	3B	100 Pottersville Rd
16	6	QFARM	3B	125 Parker Rd
16	7	QFARM	3B	Parker Rd
16	9	QFARM	3B	165 Parker Rd
16	10	QFARM	3B	163 Parker Rd
16	13	QFARM	3B	60 State Park Rd
16	21.02	QFARM		State Park Rd
16.02	5	QFARM	3B	104 State Park Rd
17	1	QFARM	3B	120 Parker Rd
17	2	QFARM	3B	116 Parker Rd
17	3	QFARM	3B	110 Parker Rd
17	22	QFARM	3B	21 Schoolhouse Ln
*17	31.01	QFARM	3B	20 Schoolhouse Ln
17	33	QFARM	3B	10 Route 24
17	33.01	QFARM	3B	8 Route 24
18.02	1	QFARM	3B	2 Chesterfield Dr
18.04	1	QFARM	3B	3 Chesterfield Dr
19	2	QFARM	3B	4240 Route 206
19	3	QFARM	3B	4250 Route 206
26	159	QFARM	3B	40 Valley Pl
26.01	18.01	QFARM	3B	525 Route 24
26.01	50	QFARM	3B	31 Old Mill Rd
26.04	75	QFARM	3B	62 Twinbrooks Trl
27	6.01	QFARM	3B	42 Old Mill Rd
*27	6.02	QFARM	3B	38 Old Mill Rd
28	4	QFARM	3B	140 South Rd

28	5	QFARM	3B	160 South Rd
28	6	QFARM	3B	180 South Rd
28	9	QFARM	3B	Off South Rd
32	52	QFARM	3B	145 South Rd
32	53.01	QFARM	3B	127 South Rd
32	57.01	QFARM	3B	95 South Rd
32	57.02	QFARM	3B	97 South Rd
32	85.05	QFARM	3B	9 South Gables Dr
32	85.17	QFARM	3B	17 South Gables Dr
32.06	13	QFARM	3B	20 Ironia Mendham Rd
33	2.01	QFARM	3B	30 Pleasant Hill Rd
33	4	QFARM	3B	122 Oakdale Rd
33	38	QFARM	3B	295 North Rd
33	100.01	QFARM	3B	24 Ironia Rd
33	107	QFARM	3B	250 Pleasant Hill Rd
33	110.02	QFARM	3B	214-B Pleasant Hill Rd
33	111.03	QFARM	3B	180 Pleasant Hill Rd
33	112.01	QFARM	3B	160 Pleasant Hill Rd
33	113.01	QFARM	3B	158 Pleasant Hill Rd
33	113.02	QFARM	3B	150 Pleasant Hill Rd
*34	4	QFARM	3B	109 Oakdale Rd
34	5	QFARM	3B	107 Oakdale Rd
40	7	QFARM	3B	33 Pleasant Hill Rd
40	14	QFARM	3B	10 Larison Rd
42	33	QFARM	3B	25 Tanners Brook Rd
43	20.01	QFARM	3B	15 Old Four Bridges Rd
44	7	QFARM	3B	80 Route 206
44	11	QFARM		Us Hwy 206
46	19	QFARM	3B	7 Larison Rd
46	20.03	QFARM	3B	65 Pleasant Hill Rd
46.06	35	QFARM	3B	175 Pleasant Hill Rd
48	10	QFARM	3B	233 Pleasant Hill Rd
48	11	QFARM	3B	239 Pleasant Hill Rd
49	5	QFARM	3B	319 Pleasant Hill Rd
*51.01	7.02	QFARM	3B	316 Pleasant Hill Rd
51.01	7.04	QFARM	3B	316 Pleasant Hill Rd
51.01	7.06	QFARM	3B	316 Pleasant Hill Rd

*Only a portion of the Q-Farm parcel is within the Chester Township boundary

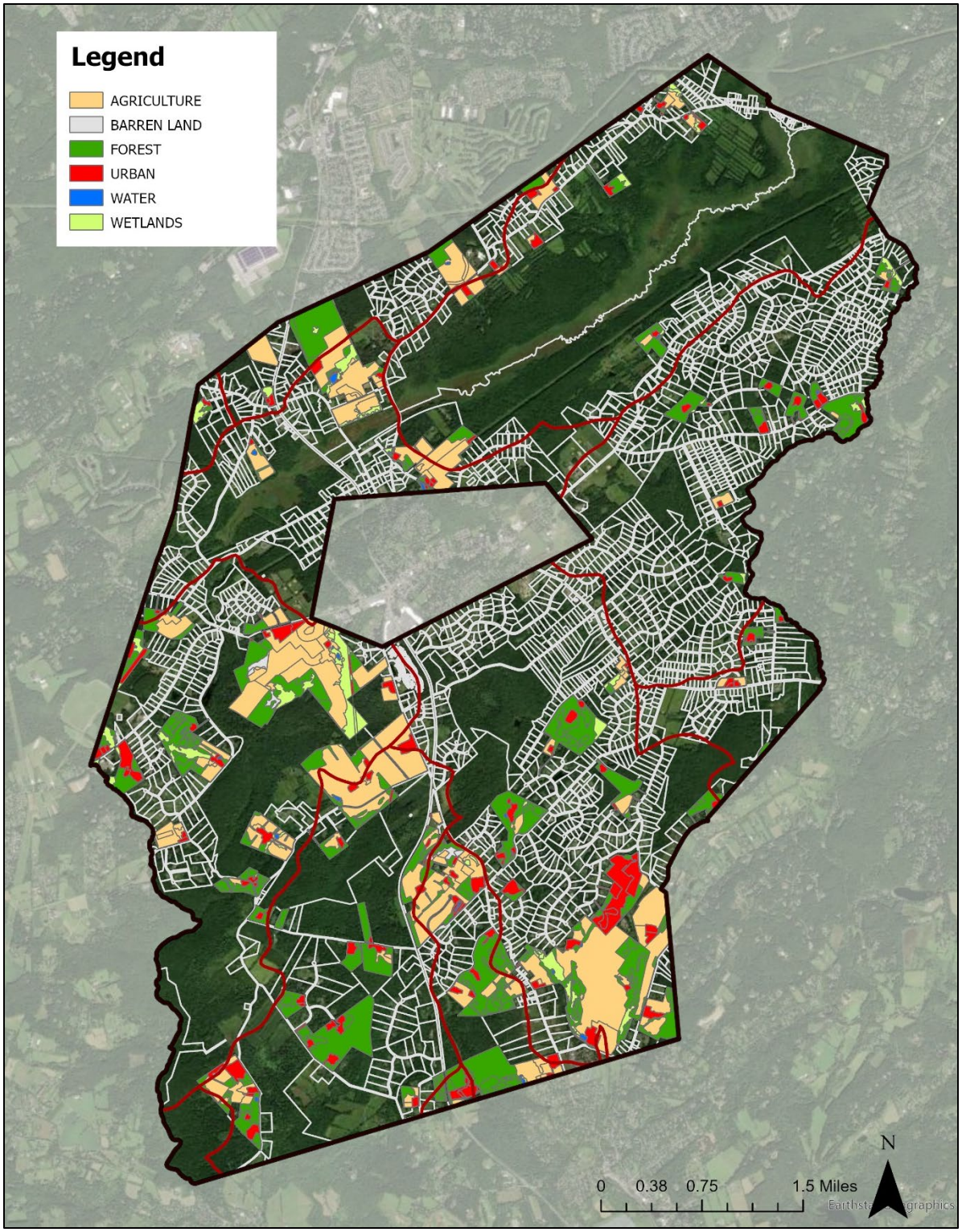


Figure 7: Land Use on Q-Farm Parcels in the Study Area of Chester Township

Table 6: Land Use on Q-Farms in the Study Area of Chester Township

Land Use	Area (acres)
Agriculture	1,328.8
Barren Land	17.0
Forest	1,294.5
Urban	385.7
Water	15.0
Wetlands	181.2
Total:	**3,222.1**

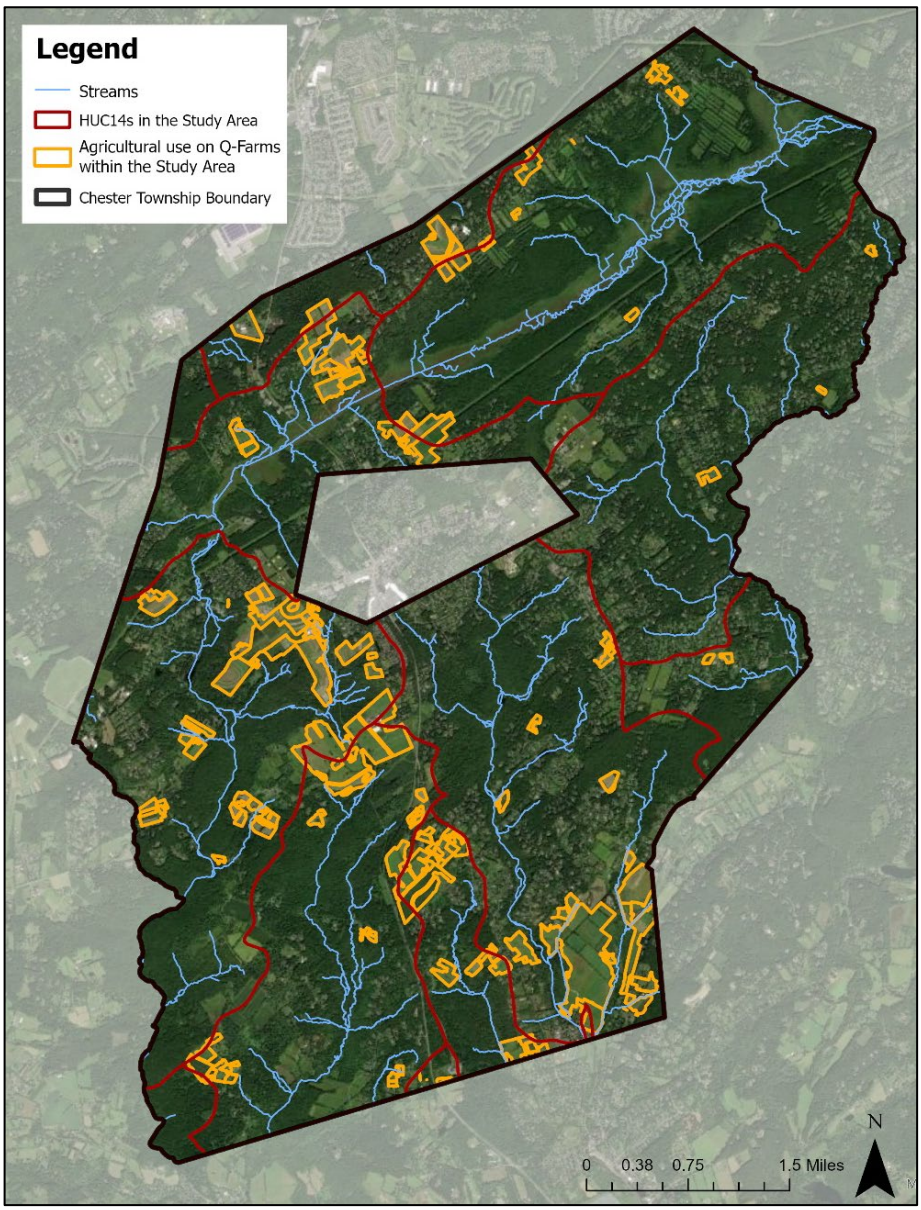


Figure 8: Aerial View of Agricultural Use on Q-Farm Parcels within the Study Area of Chester Township

Table 7: Recommendations for Specific Farms in the Study Area of Chester Township

Lamington River Study Area								
Block	**Lot**	**Q-Farm Code**	**Cover Crop**	**Enhanced Stream Buffer**	**Impervious Cover Mgt.**	**Rainwater Harvesting**	**Livestock Exclusion**	**Manure Mgt.**
15	9	QFARM	X	X				
15	28.01	QFARM	X	X	X	X		
15	28.03	QFARM	X					
15	28.05	QFARM	X		X	X		
15	45	QFARM	X	X		X		
16	13	QFARM		X		X		
33	38	QFARM		X		X		
46	19	QFARM	X					X

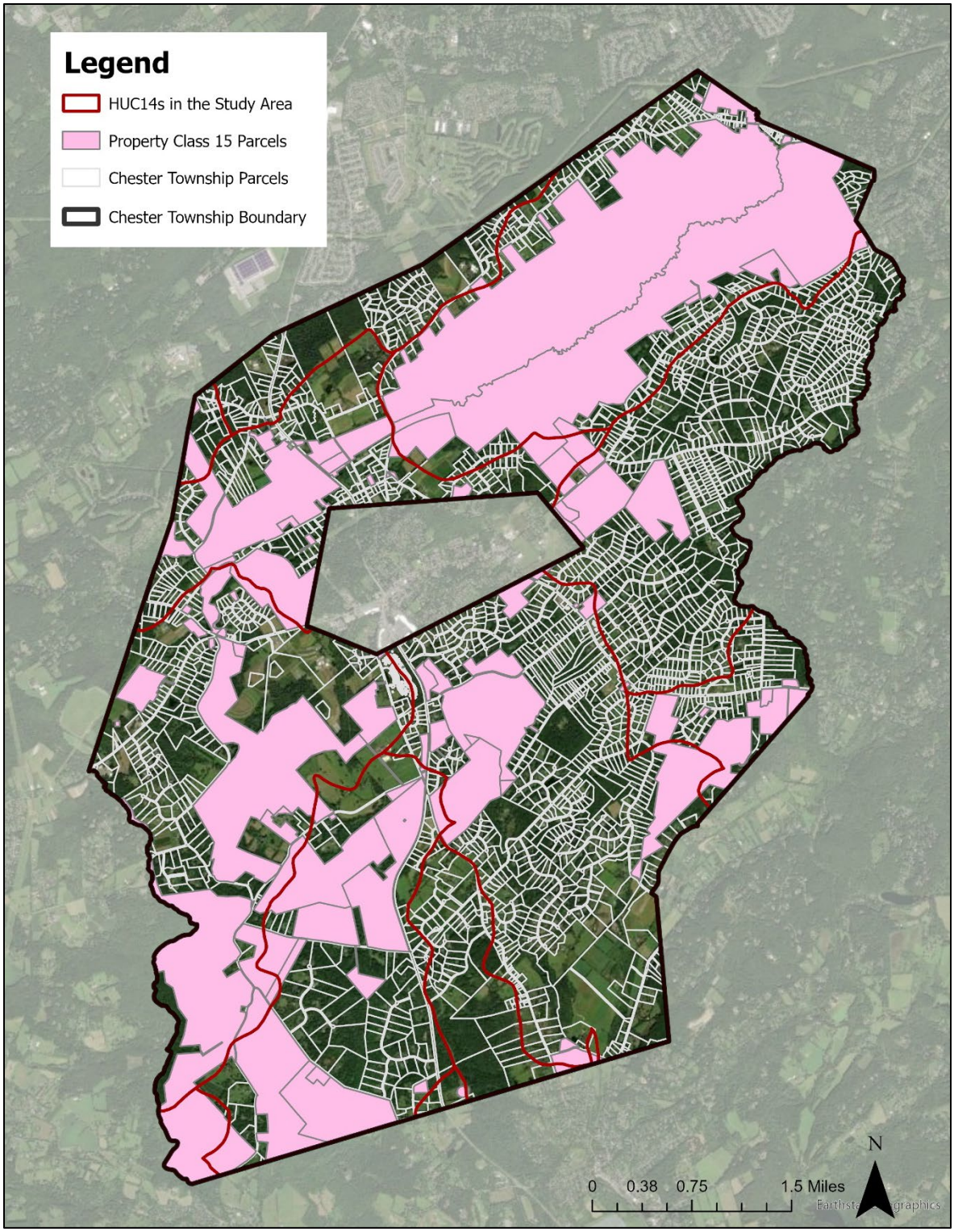


Figure 9: Property Class 15 Parcels in the Study Area of Chester Township

Table 8: Property Class 15 Parcels in the Study Area of Chester Township

Block	Lot	Prop Class	Location	Facility Type
***25.01**	**38.01**	**15A**	**250 Route 24**	**Schools**
33	17.01	15A	233 North Rd	School Fields
***33**	**17.02**	**15A**	**133 North Rd**	**School**
5	1	15B	25 St Bernards Rd	Schools
7	43.01	15B	3 St Bernards Rd	Residence
***27**	**4**	**15B**	**577 Route 24**	**Montessori School**
1	1	15C	634 Pottersville Rd	Preserve
1.01	1	15C	Pottersville Rd	Vacant Land
2	1	15C	300 Longview Rd	Bamboo Brook Edu Ctr
2	4.01	15C	170 Longview Rd	Park
2	6	15C	725 Pottersville Rd	Brady/Millhouse O/Sp
3	15	15C	Lamerson Rd	Knight - Open Space
3	17	15C	Lamerson Rd	Park
3	17.03	15C	Lamerson Rd	Knight - Open Space
9	3.01	15C	452 Fox Chase Rd	Park
9	15.03	15C	Mt Paul Rd	Road
9	22	15C	900 Route 24	Open Space
10	52	15C	Cliffwood Rd	Macgregor Park
10	58.01	15C	48 Cliffwood Rd	Vacant Land
10	100	15C	68 Cliffwood Rd	Tiger Brook Reservoi
10	107	15C	375 Old Chester Gladstone	Macgregor Park
10	108	15C	Off Old Chester Gladstone	Macgregor Park
10	120	15C	Route 206	Tiger Brook Park
13	1.01	15C	1000 Route 206	Conserved Land
13	3	15C	120 Lamerson Rd	Knight - Open Space
13	4	15C	Pottersville Rd	Allen - Open Space
13	6	15C	155 Pottersville Rd	Vacant Land
13	9	15C	75 Pottersville Rd	Vacant Land
14	1	15C	751 Route 206	Vacant Land
***15**	**1**	**15C**	**200 Pottersville Rd**	**Park**
15	12.01	15C	Pottersville Rd	Park
15	23	15C	70 Route 24	Park
15	41	15C	Old Chester Gladstone	Park
***16**	**34**	**15C**	**1 Parker Rd**	**Municipal Bldg.**
16.01	16	15C	State Park Rd	Open Space
17	7	15C	98a Parker Rd	Filtering Plant
17	22.05	15C	Parker Rd	Parker Rd Fields
18	3	15C	Furnace Rd	Open Space
18	4	15C	65 Furnace Rd	Chubb Park
18	12.01	15C	Route 24	Park
18	38	15C	Route 24	Park
20	4	15C	145 Old Chester Gladstone	Vacant Land
20	16	15C	Old Chester Gladstone Rd	Vacant Land
25	19	15C	100 Cooper Ln	Tiger Brook Park
25.03	13	15C	168 Cooper Ln	Tiger Brook Park
25.03	16	15C	605 Route 206	Park

26	70	15C	26 South Rd	Evans - Park
***26**	**78.01**	**15C**	**120 North Rd**	**Telecordia - Park**
***26**	**78.02**	**15C**	**100 North Rd**	**Administrative Bldg.**
26	79	15C	50 North Rd	Dedicated Open Space
26.06	7	15C	345 Route 24	Leased To Cereb Pals
26.09	1	15C	245 Route 24	Dedicated Open Space
33	36	15C	275 North Rd	Game Preserve
33	72.02	15C	401 North Rd	Park
33	110.01	15C	246 Pleasant Hill Rd	Game Preserve
35	1	15C	Oakdale Rd	Open Space
40	12	15C	Pleasant Hill Rd	Game Preserve
41	1.01	15C	201 Route 206	Game Preserve
41	5.02	15C	Hillside Rd	Dedicated Open Space
41	13	15C	215 Route 206	Open Space
41	16.02	15C	225 Route 206	Open Space
42	10.01	15C	36 Furnace Rd	Vacant Land
42	31	15C	7 Tanners Brook Rd	Vacant Land
42	35	15C	Tanners Brook Rd	Game Preserve
42	35.01	15C	Tanners Brook Rd	Open Space
43	6	15C	Carlisle Ct	Open Space
43	8	15C	80 Tanners Brook Rd	Tannersbrk-Op Space
43	21	15C	25 Old Four Bridges Rd	Tannersbrk Open Sp
45	1	15C	Route 206	Road
52	18	15C	20 Golf Course Rd	Well
52	19	15C	65 Ironia Rd	Park
4	36	15D	2 Rogers Rd	Admin Bldg
9	20	15D	2 Mt Paul Rd	Conservation-Park
***9**	**20.01**	**15D**	**480 Route 24**	**Church**
***17**	**38**	**15D**	**50 Route 24**	**Church**
18	15.01	15D	30 Cherry Tree Ln	Residence
18	48	15D	83 Furnace Rd	Group Residence
33	2.02	15D	80/82 Pleasant Hill Rd	Church
33	126	15D	228 Pleasant Hill Rd	Residence
***33.01**	**10**	**15D**	**100 Oakdale Rd**	**Church**
9.01	1	15F	1 Benjamin Rd	Disabled Veteran
10.05	28	15F	398 Route 24	Disabled Veteran
18.02	12	15F	24 Chesterfield Dr	Disabled Veteran
19	4	15F	3 Daly Rd	Widow - Disabled Vet
20	2	15F	30 Wyckoff Way	Disabled Veteran
***26.07**	**6**	**15F**	**333 Route 24**	**Hall**
33	1	15F	138 Oakdale Rd	Disabled Veteran
33	47.08	15F	10 Horton Dr	Disabled Veteran
33	181	15F	3 Ann Ln	Disabled Veteran
39	5.03	15F	4 Furnace Rd	Widow - Disabled Vet
51	32	15F	9 Golf Course Rd	Disabled Veteran

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

Figure 10: Sites with Green Infrastructure Opportunities in Chester Township

HIGHLANDS RIDGE PARK

RAP ID: 1

Subwatershed: Burnett Brook

HUC14 ID 02030105060020

Site Area: 4,445,427 sq. ft.

Address: County Road 510
Chester, NJ 07930

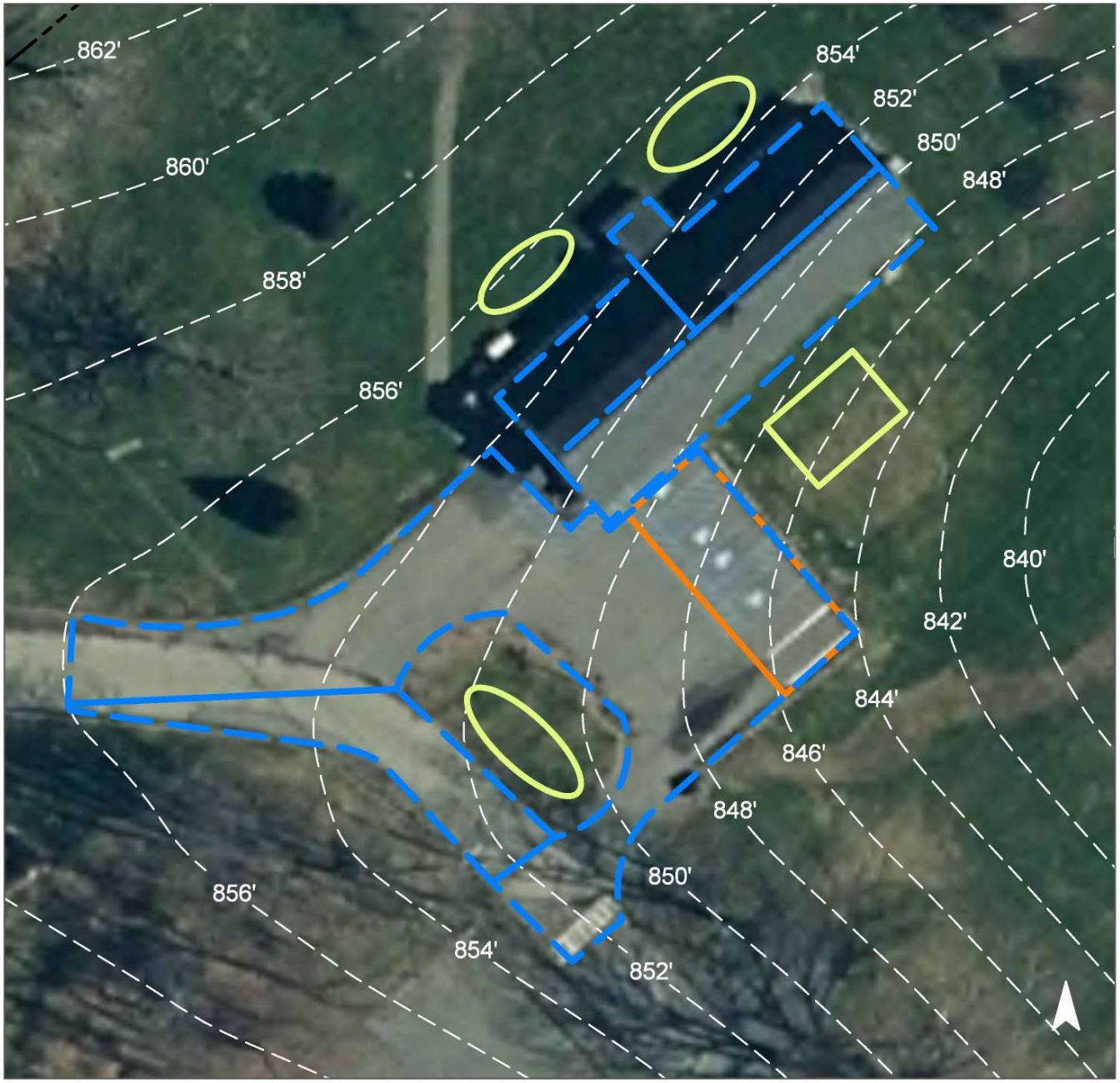
Block and Lot: Block 26, Lot 78.01

Rain gardens can be installed in multiple grass areas to capture, treat, and infiltrate the stormwater runoff from the building rooftop and from the asphalt driveway. This will require downspout disconnections. The existing parking spaces to the southeast of the park building can be converted into pervious pavement to capture and infiltrate the stormwater runoff from the asphalt. 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 50"
4	188,825	9.1	95.4	867.0	0.147	5.89

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	6,930	0.205	30	14,450	0.54	1,735	$17,350
Pervious pavement	8,515	0.252	38	17,760	0.67	1,565	$39,125

GREEN INFRASTRUCTURE RECOMMENDATIONS



Highlands Ridge Park

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

0 20' 40'

NEW JERSEY HIGHLANDS COUNCIL

RAP ID: 2

Subwatershed: Burnett Brook

Site Area: 434,470 sq. ft.

Address: 100 North Road
Chester, NJ 07930

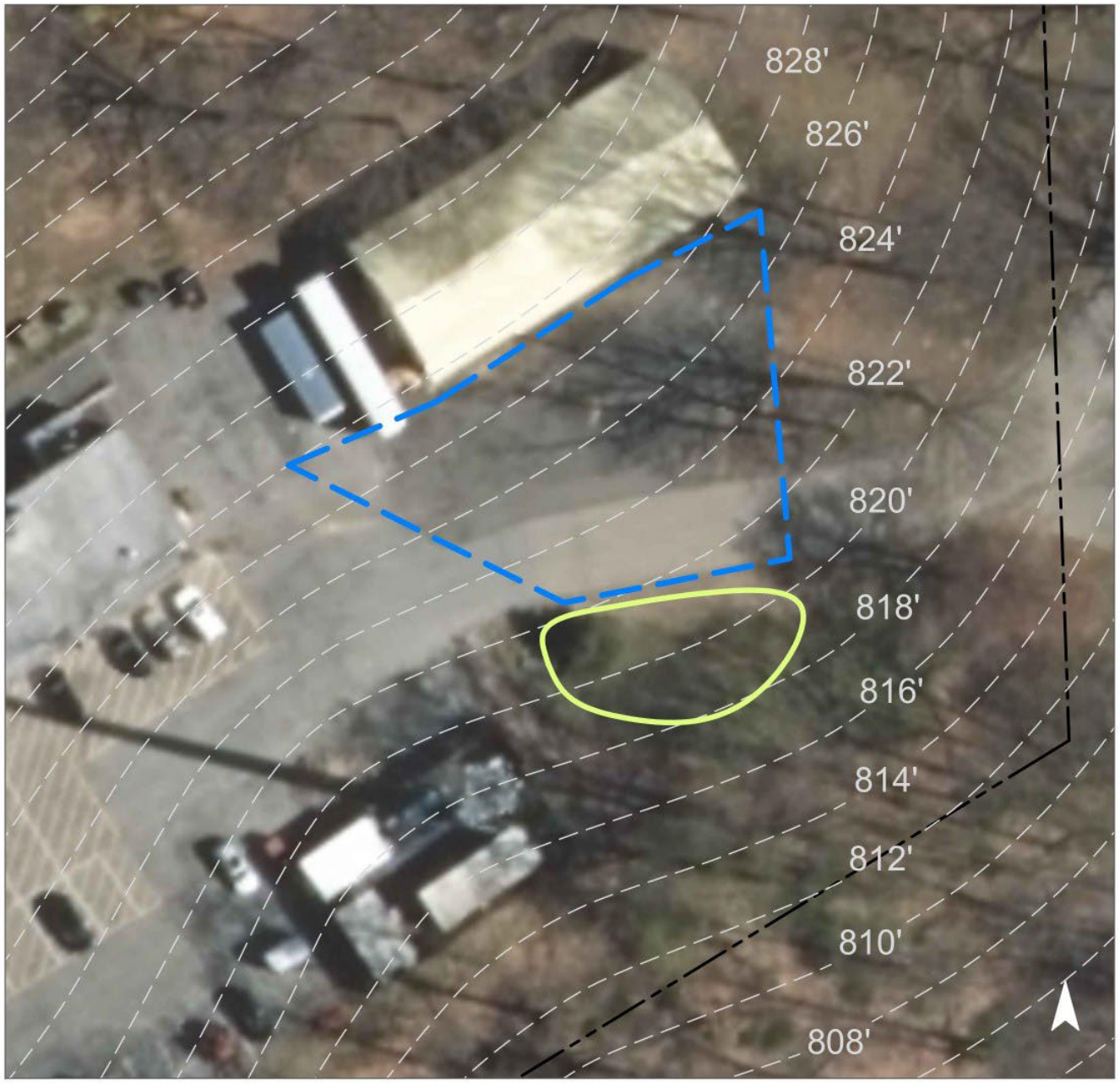
Block and Lot: Block 26, Lot 78.02

A rain garden can be installed south of the storage building to capture stormwater runoff from the parking lot and roadway. 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"
27	117,715	5.7	59.5	540.5	0.092	3.23

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 system	0.189	32	13,860	0.52	1,815	$9,075

GREEN INFRASTRUCTURE RECOMMENDATIONS



New Jersey Highlands Council

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

0 20' 40'

BLACK RIVER MIDDLE SCHOOL

RAP ID: 3

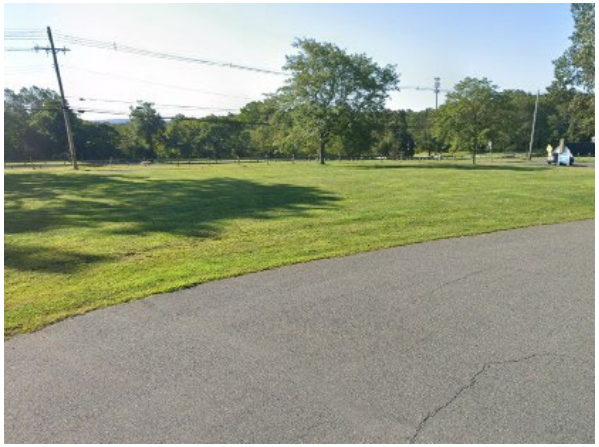
Subwatershed: Lamington River

HUC14 ID 02030105050030

Site Area: 1,716,100 sq. ft.

Address: 133 North Road
Chester, NJ 07930

Block and Lot: Block 33, Lot 17.02

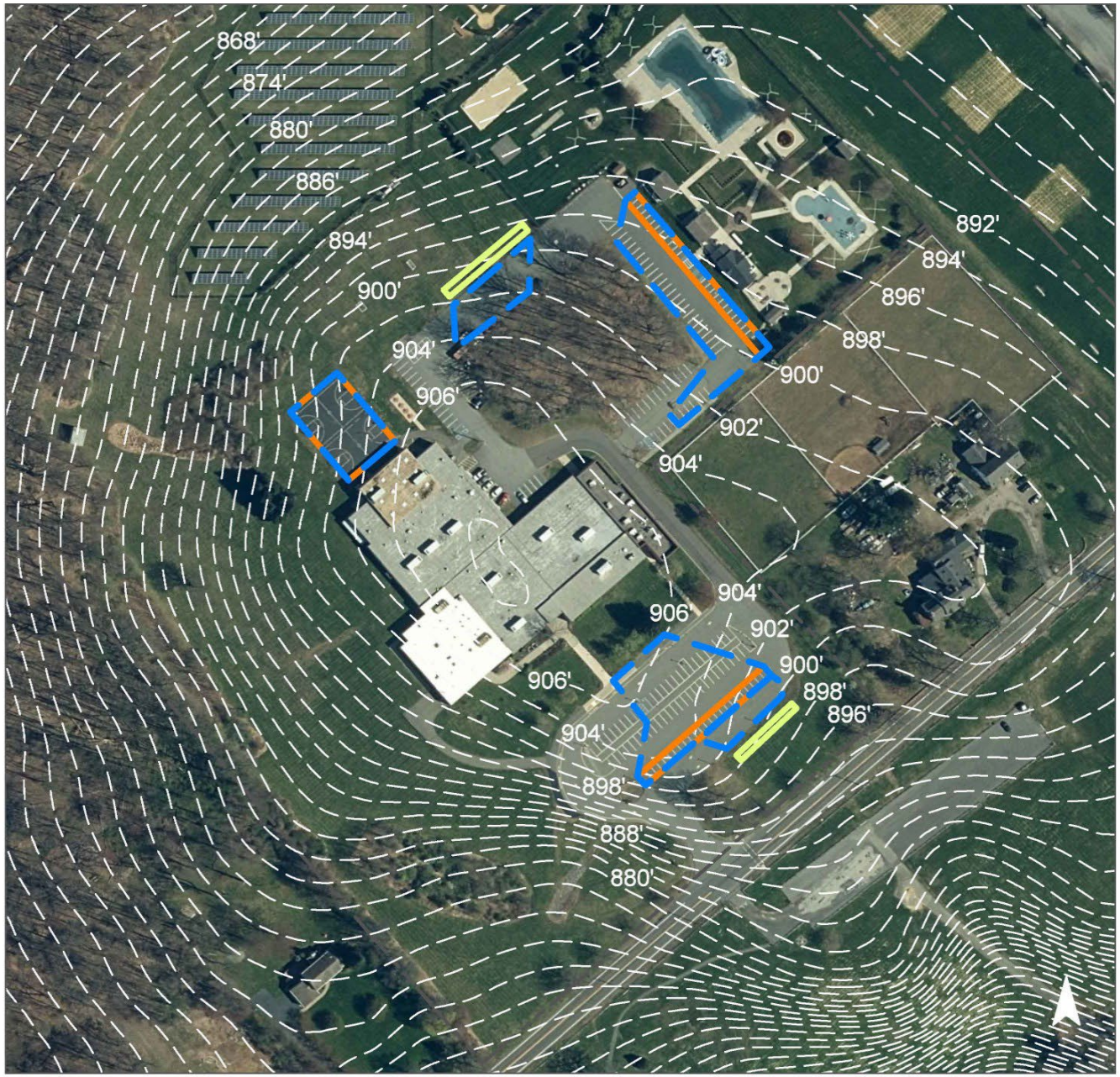


Rain gardens can be installed near the northern and southern parking lots to capture, treat, and infiltrate the stormwater runoff from the asphalt. This will require downspout disconnections. Existing parking spaces in the northern and southern lots can be converted into pervious pavement to capture and infiltrate the stormwater runoff from the asphalt. The basketball court to the north of the school can also be converted into pervious 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 50"
18	301,365	14.5	152.2	1,383.7	0.235	9.39

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	10,080	0.298	44	21,030	0.79	2,520	$25,200
Pervious pavement	47,990	1.421	209	100,100	3.76	17,550	$438,750

GREEN INFRASTRUCTURE RECOMMENDATIONS



Black River Middle School

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

0 100' 200'

CHESTER TOWNSHIP MUNICIPAL BUILDING

RAP ID: 4

Subwatershed: Lamington River

Site Area: 90,055 sq. ft.

Address: 1 Parker Road
Chester, NJ 07930

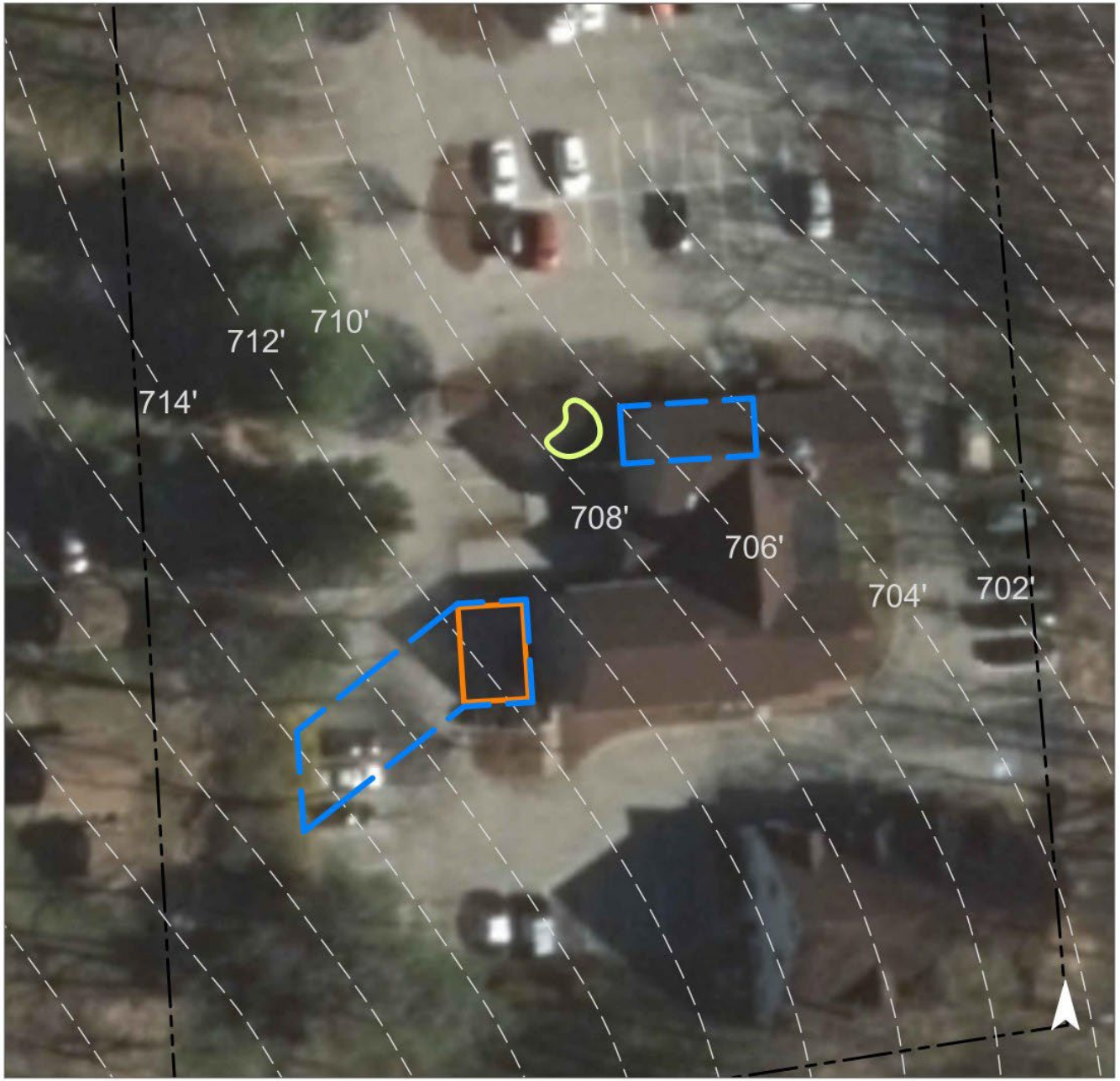
Block and Lot: Block 16, Lot 34

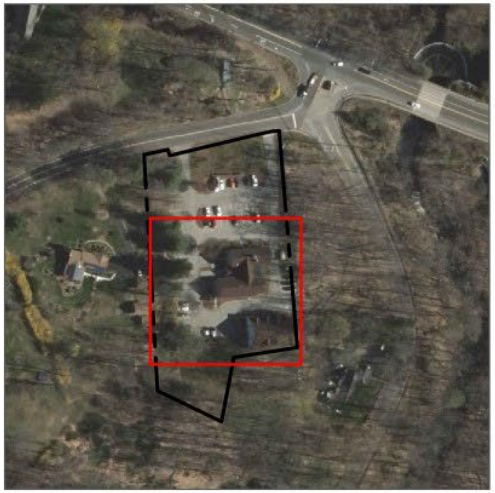
Pervious pavement can be installed in the parking spaces west of the building to capture and infiltrate stormwater. A rain garden can be installed to the northwest of the building to capture, treat, and infiltrate stormwater runoff from the roof. A preliminary soil assessment suggests that the soils 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 44"
53	47,320	2.3	23.9	217.3	0.037	1.30

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	0.014	2	1,000	0.04	130	$650
Pervious pavement	0.044	7	3,190	0.12	490	$12,250

GREEN INFRASTRUCTURE RECOMMENDATIONS





Chester Township Municipal Building

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

0 20' 40'

CHURCH OF THE MESSIAH

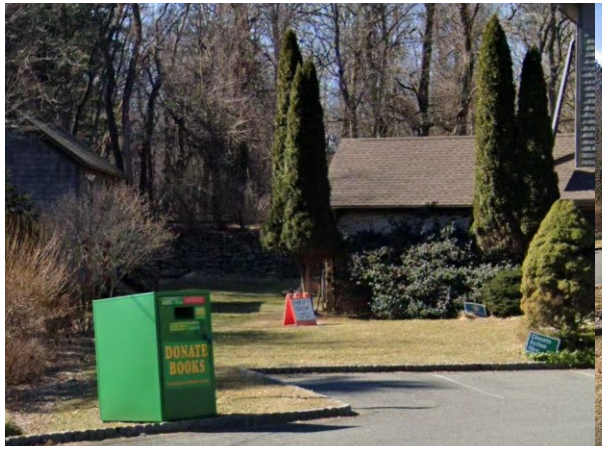
RAP ID: 5

Subwatershed: Lamington River

HUC14 ID 02030105050040

Site Area: 330,558 sq. ft.

Address: 50 County Highway 513
Chester, NJ 07930



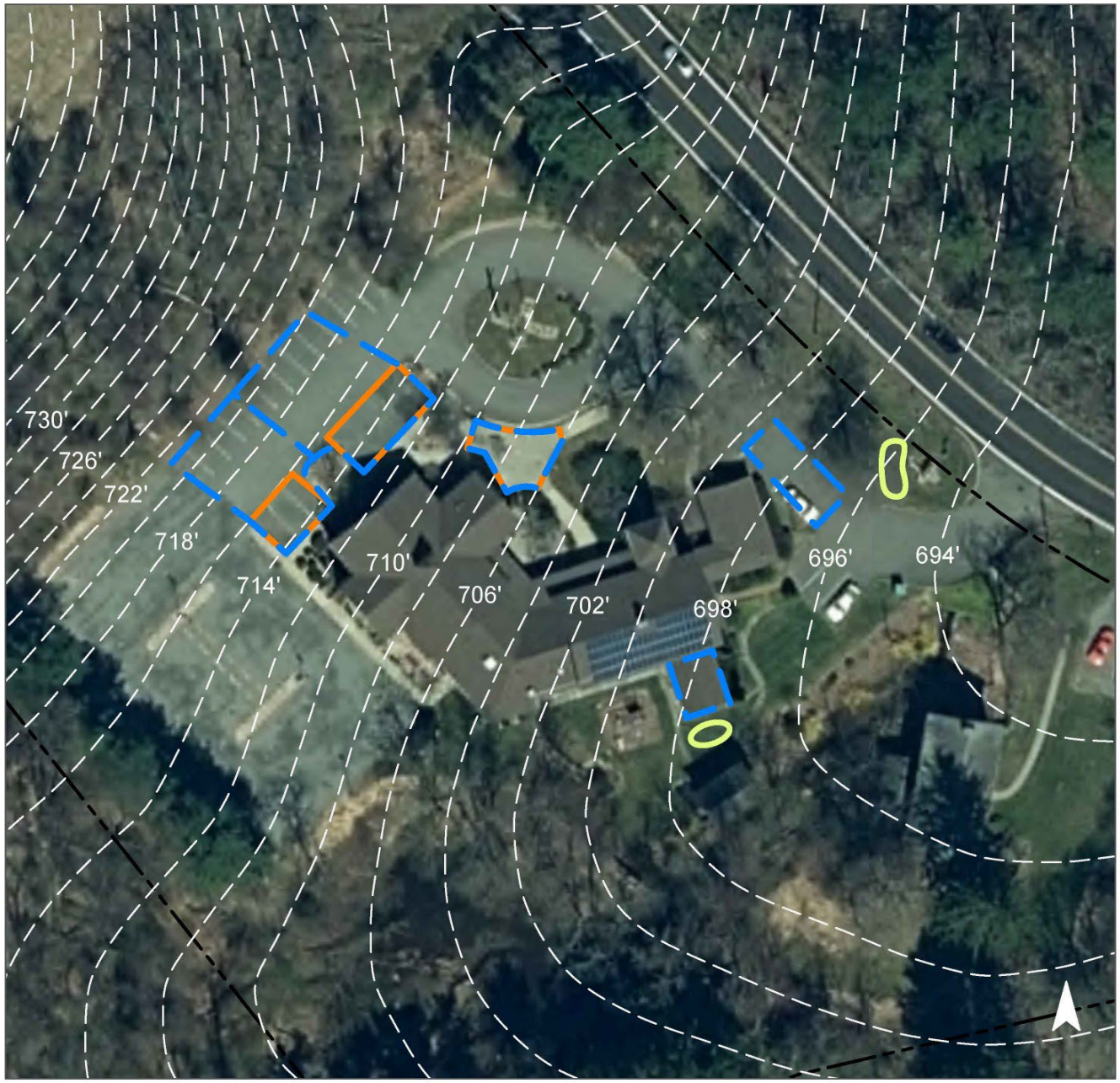
Block and Lot: Block 17, Lot 38

A rain garden can be installed near the south of the building using the disconnected downspouts to capture, treat, and infiltrate the stormwater runoff from the rooftop. Another rain garden can be installed around an existing catch basin near the driveway entrance to capture, treat, and infiltrate the stormwater runoff from the asphalt. A trench drain will be needed to intercept and redirect the driveway runoff. Existing parking spaces to the northwest of the building can be converted into pervious pavement to capture and infiltrate the stormwater runoff from the asphalt. The concrete walkway near the building entrance can be replaced with permeable pavers. 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 50"
16	52,338	2.5	26.4	240.3	0.041	1.63

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	1,095	0.032	6	2,280	0.09	275	$2,750
Pervious pavement	5,190	0.154	23	10,820	0.41	1,910	$47,750

GREEN INFRASTRUCTURE RECOMMENDATIONS



Church of the Messiah

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

0 30' 60'

GRACE BIBLE CHAPEL

RAP ID: 6

Subwatershed: Lamington River

HUC14 ID 02030105050030

Site Area: 357,759 sq. ft.

Address: 100 Oakdale Road
Chester, NJ 07930

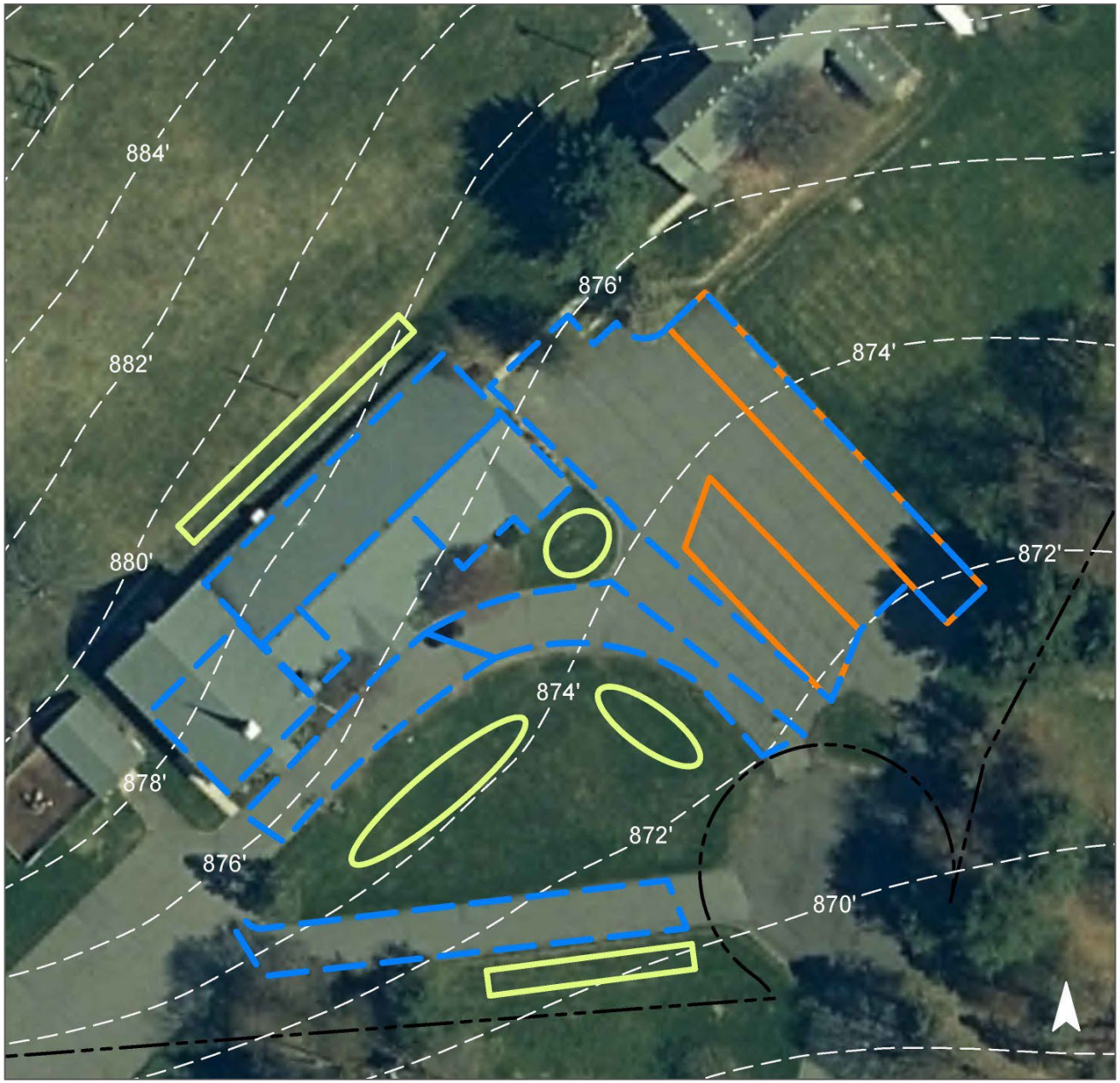
Block and Lot: Block 33.01, Lot 10

Rain gardens can be installed in multiple grass areas around the property to capture, treat, and infiltrate the stormwater runoff from the rooftop and driveways. This may require downspout disconnections, trench drains, and curb cuts. Existing parking spaces to the east of the building can be converted into pervious pavement to capture and infiltrate the stormwater runoff from the asphalt. This may require a trench drain. 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 50"
19	69,577	3.4	35.1	319.5	0.054	2.17

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	16,895	0.500	74	35,240	1.32	4,225	$42,250
Pervious pavement	13,315	0.394	59	27,770	1.04	5,450	$136,250

GREEN INFRASTRUCTURE RECOMMENDATIONS



Grace Bible Chapel

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

0 30' 60'

KAY ENVIRONMENTAL EDUCATION CENTER

RAP ID: 7

Subwatershed: Lamington River

Site Area: 24,177,870 sq. ft.

Address: 200 Pottersville Road
Chester, NJ 07930

Block and Lot: Block 15, Lot 1

Pervious pavement can be installed in the parking spaces to capture the stormwater runoff from the pavement. A rain garden can be installed to capture and infiltrate stormwater runoff from the building's rooftop. 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"
0.27	65,755	3.2	33.2	301.9	0.051	1.80

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	0.012	2	860	0.03	130	$650
Pervious pavement	0.078	13	5,740	0.22	600	$15,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Kay Environmental Education Center

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

0 25' 50'

AMERICAN LEGION POST 342

RAP ID: 8

Subwatershed: Peapack Brook

HUC14 ID 02030105060050

Site Area: 28,354 sq. ft.

Address: 333 County Highway 510
Chester, NJ 07930

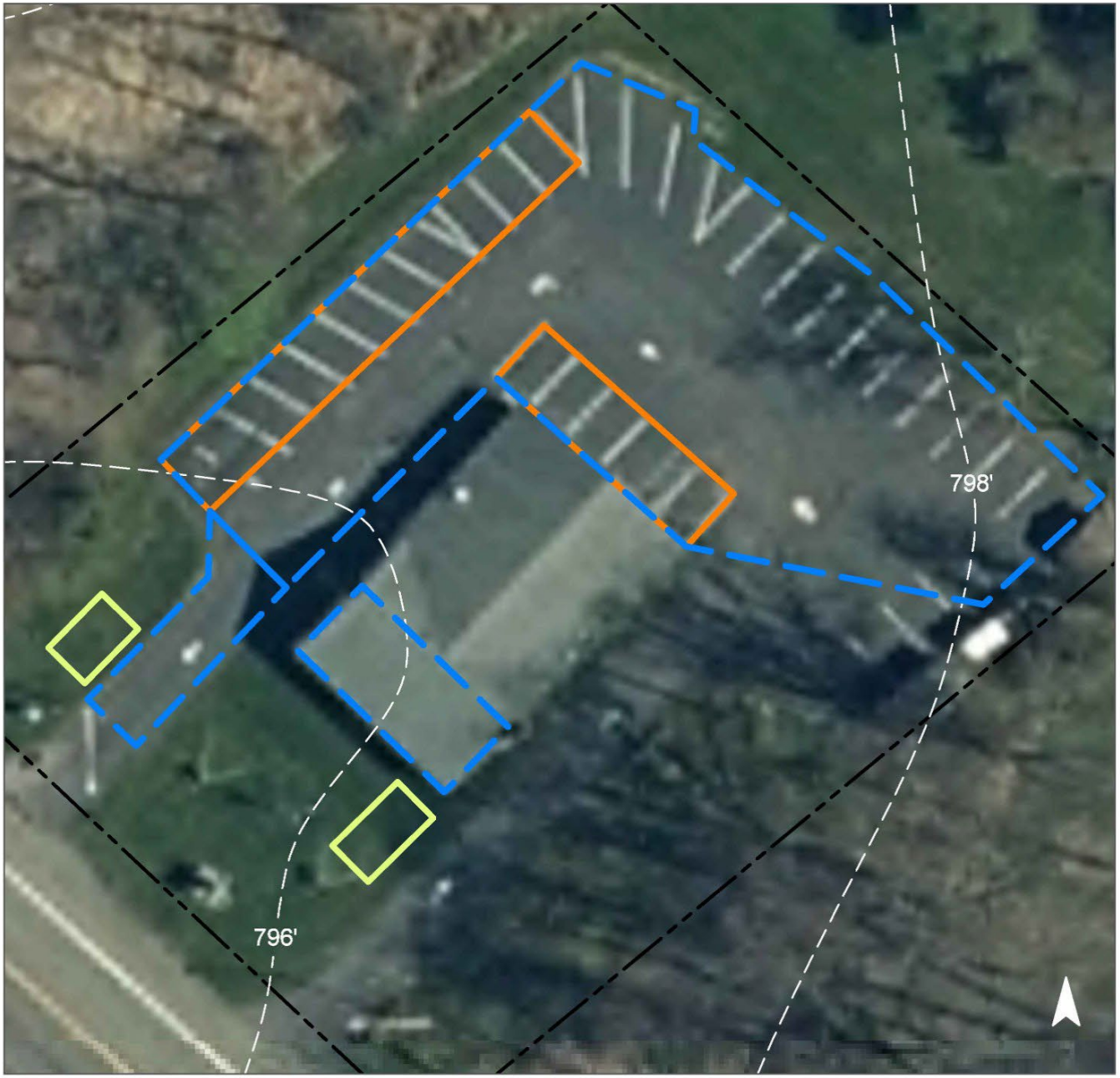
Block and Lot: Block 26.07, Lot 6

A rain garden can be installed to the south of the building to capture, treat, and infiltrate the stormwater runoff from the rooftop. This will require downspout disconnection. Another rain garden can be installed near the western driveway entrance to capture, treat, and infiltrate the stormwater runoff from the asphalt. This will require a trench drain. Existing parking spaces to the north and west of the building can be converted into pervious pavement to capture and infiltrate the stormwater runoff from the parking lot. This may require a trench drain. 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 50"
70	19,897	1.0	10.0	91.4	0.016	0.62

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	1,315	0.039	6	2,750	0.10	330	$3,300
Pervious pavement	9,555	0.283	42	19,930	0.75	2,100	$52,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



American Legion Post 342

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

0 15' 30'

BRAGG SCHOOL & DICKERSON SCHOOL

RAP ID: 9

Subwatershed: Peapack Brook

HUC14 ID 02030105060050

Site Area: 1,195,284 sq. ft.

Address: 250 State Route 24
Chester, NJ 07930

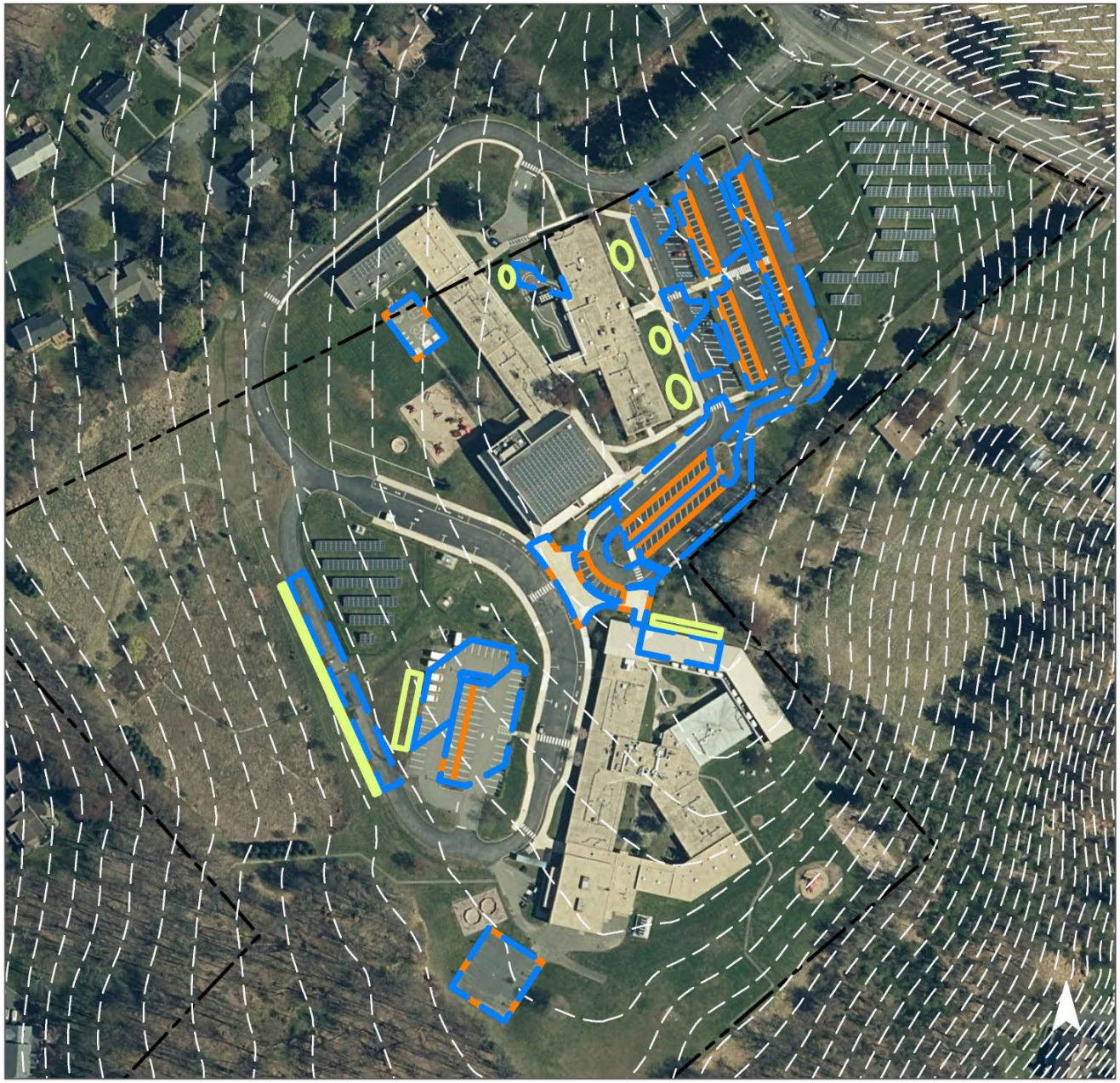
Block and Lot: Block 25.01, Lot 38.01

Rain gardens can be installed in multiple grass areas around the property to capture, treat, and infiltrate the stormwater runoff from the rooftops, parking lots, and driveways. This may require downspout disconnections, redirection of downspouts beneath sidewalks, trench drains, and curb cuts. Existing parking spaces in multiple lots can be converted into pervious pavement to capture and infiltrate the stormwater runoff from the asphalt. This may require trench drains in some locations. The basketball courts near each school building can also be converted into pervious pavement. The concrete walkway near the entrance of Bragg School can be replaced with permeable pavers. 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 50"
31	366,012	17.6	184.9	1,680.5	0.285	11.41

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	27,040	0.801	118	56,400	2.12	6,760	$67,600
Pervious pavement	87,420	2.588	382	182,340	6.85	34,685	$867,125

GREEN INFRASTRUCTURE RECOMMENDATIONS

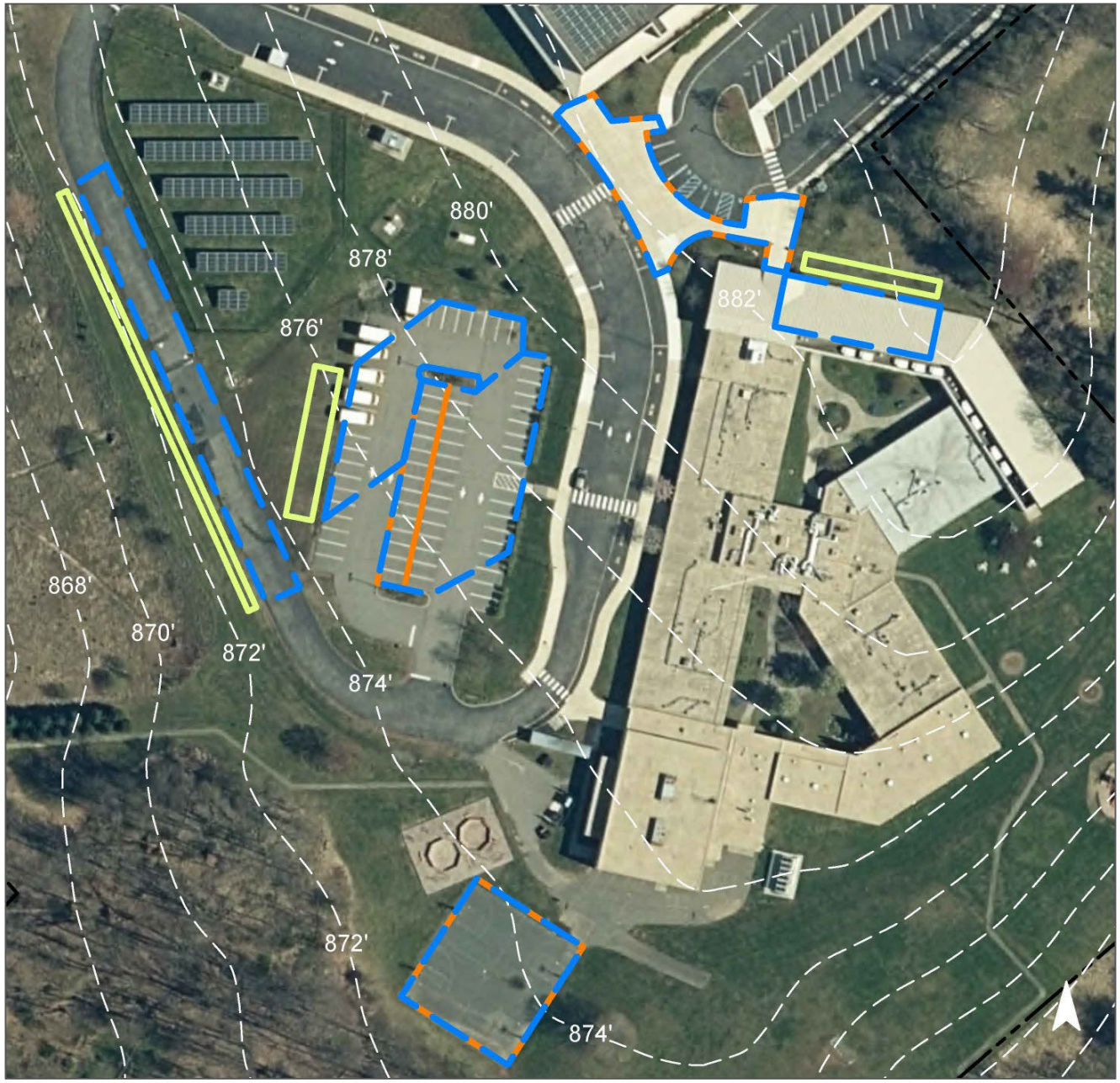


Bragg & Dickerson Schools Overall View

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

0 100' 200'

GREEN INFRASTRUCTURE RECOMMENDATIONS

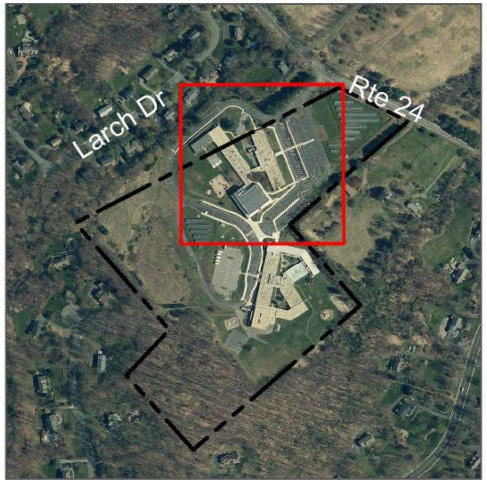


Bragg School

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

0 50' 100'

GREEN INFRASTRUCTURE RECOMMENDATIONS



Dickerson School

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

0 50' 100'

HUDSON CITY SAVINGS BANK

RAP ID: 10

Subwatershed: Peapack Brook

Site Area: 257,810 sq. ft.

Address: 385 Route 24
Chester, NJ 07930

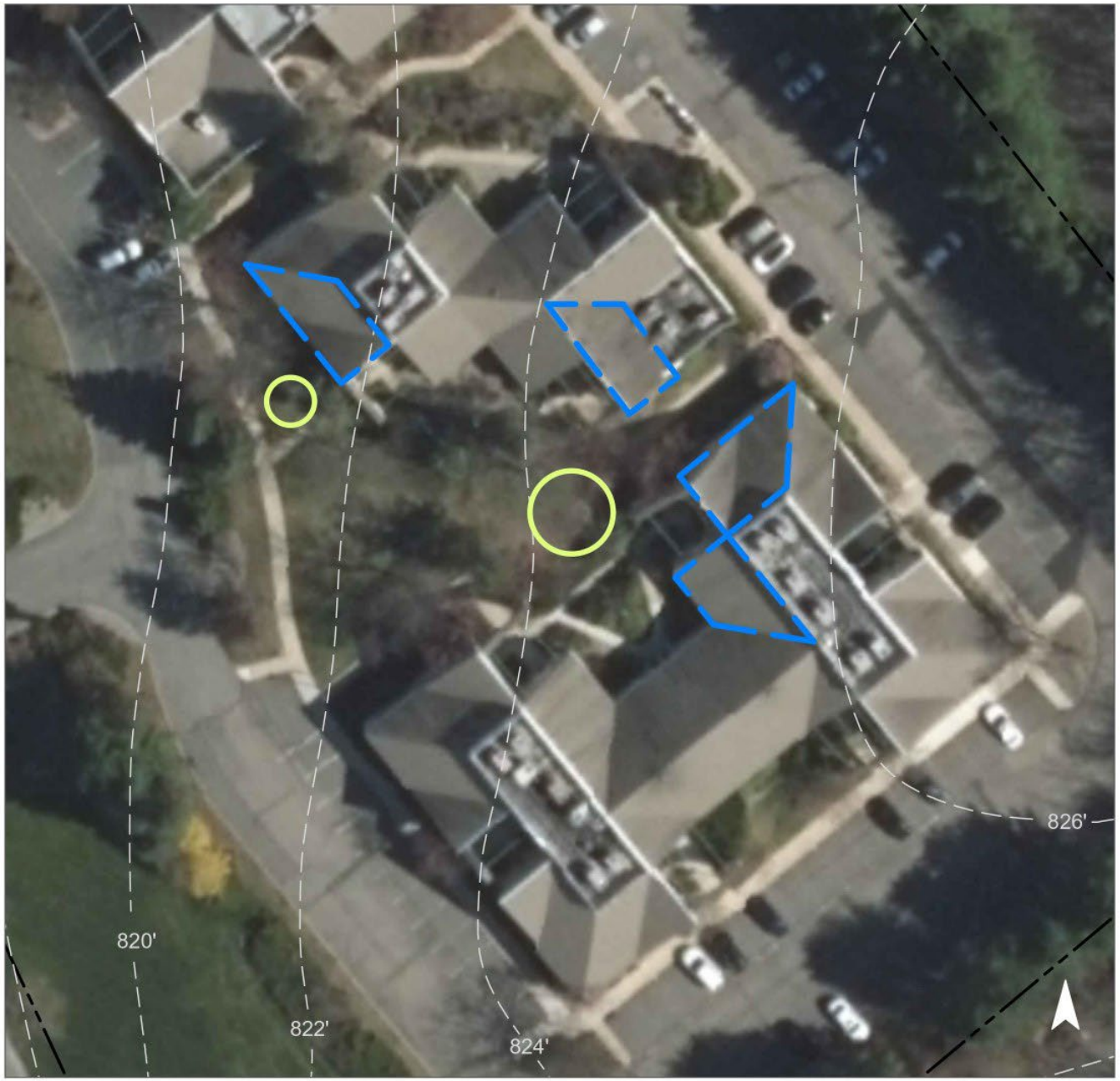
Block and Lot: Block 26.05, Lot 12

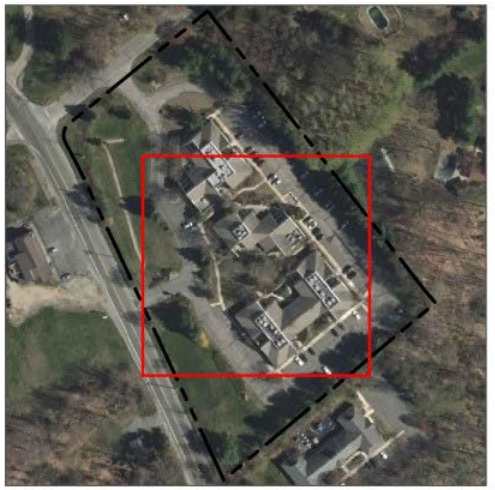
Rain gardens can be installed in the center courtyard and to the west of the building to capture rooftop runoff from multiple buildings. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

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	118,660	5.7	59.9	544.8	0.092	3.25

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	0.82	14	6,020	0.23	790	$3,950

GREEN INFRASTRUCTURE RECOMMENDATIONS





Hudson City Savings Bank

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

0 25' 50'

IANDOLI & EDENS ATTORNEYS AT LAW

RAP ID: 11

Subwatershed: Peapack Brook

Site Area: 104,110 sq. ft.

Address: 310 Route 24
Chester, NJ 07930

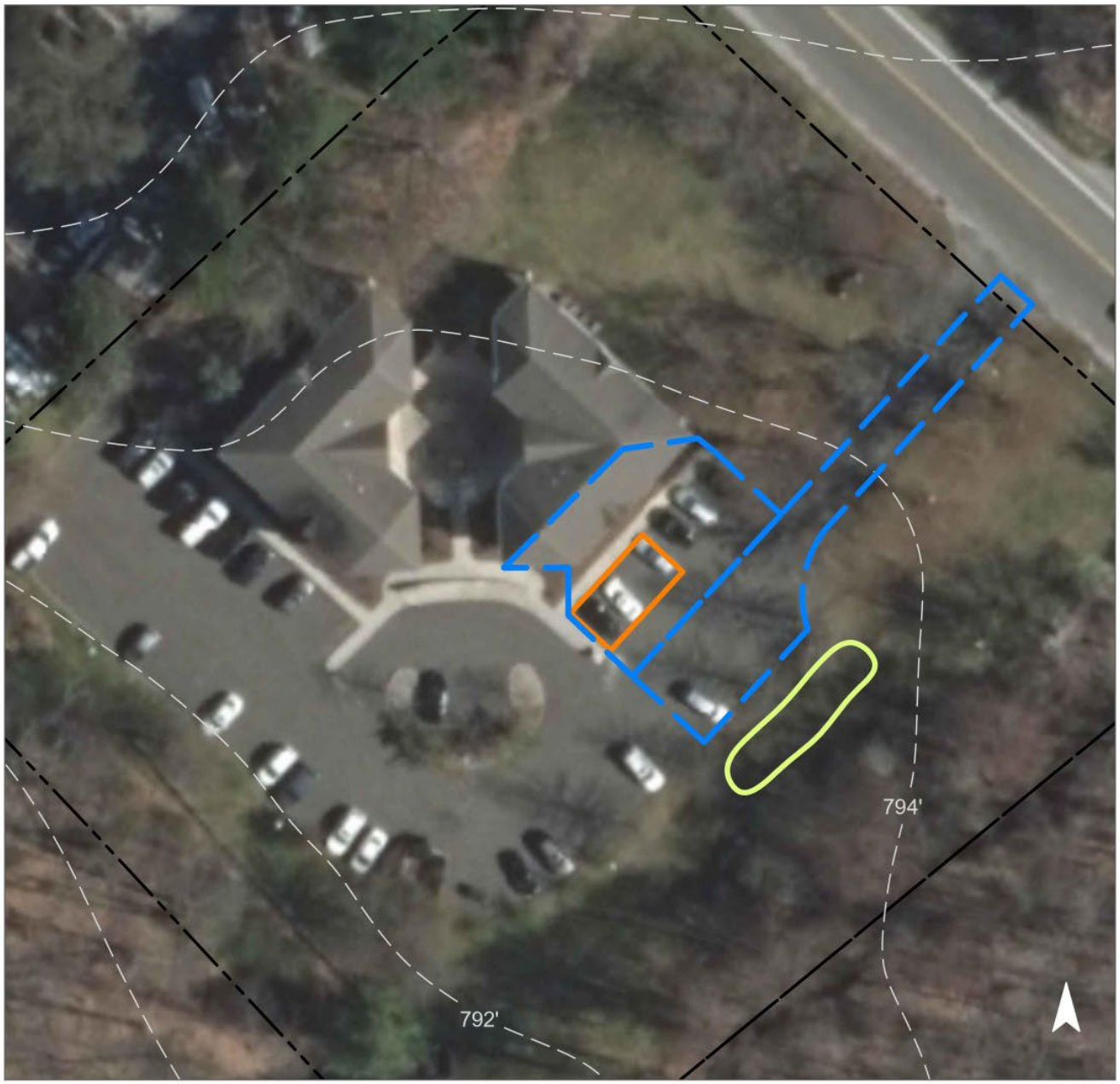
Block and Lot: Block 25, Lot 37.03

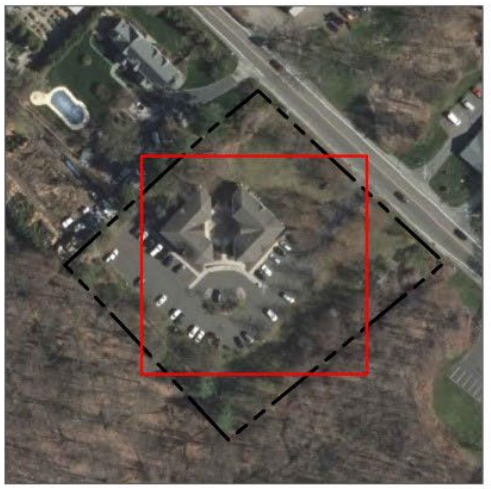
A rain garden can be installed to reduce the flooding that occurs east of the parking lot. Pervious pavement can be installed in the parking lot row directly west of the building to capture stormwater runoff from both the parking lot and the rooftop. A preliminary soil assessment suggests that more soil 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"
32	33,470	1.6	16.9	153.7	0.026	0.92

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	0.093	16	6,810	0.26	890	$4,450
Pervious pavement	0.093	16	6,810	0.26	650	$16,250

GREEN INFRASTRUCTURE RECOMMENDATIONS





Iandoli & Edens
Attorneys at Law

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

0 25' 50'

PIZZA & BAGELS 24

RAP ID: 12

Subwatershed: Peapack Brook

Site Area: 132,295 sq. ft.

Address: 2631, 324 Route 24
Chester, NJ 07930

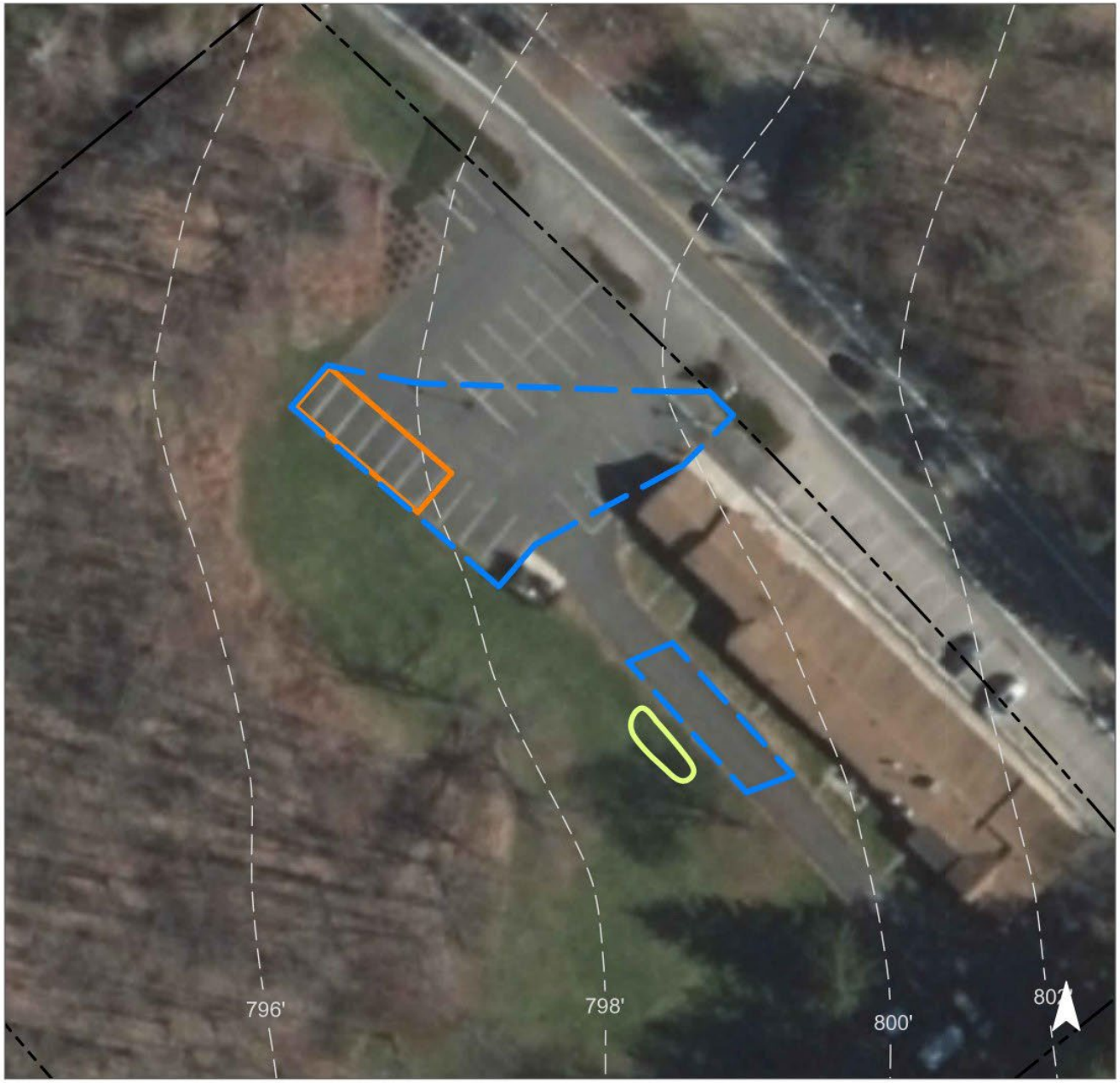
Block and Lot: Block 25, Lot 36

Pervious pavement can be installed in the western corner of the parking lot to capture and infiltrate stormwater runoff from the parking lot. A rain garden can be installed along the roadway south of the building to capture 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 44"
16	20,800	1.0	10.5	95.5	0.016	0.57

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	1,660	0.06	220	$1,375
Pervious pavement	0.140	23	10,240	0.38	970	$24,250

GREEN INFRASTRUCTURE RECOMMENDATIONS



Pizza & Bagels 24

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

0 25' 50'

MENDHAM ANIMAL HOSPITAL

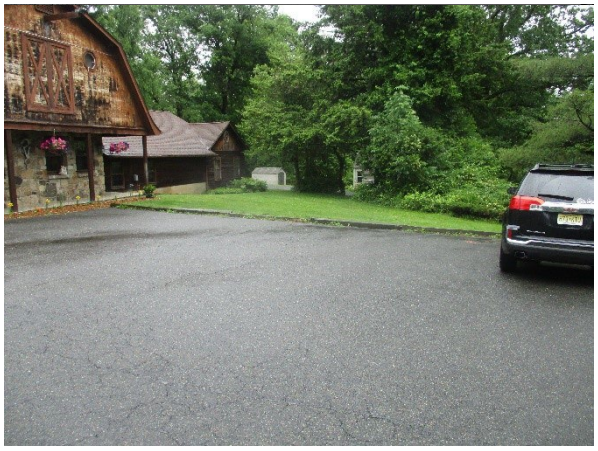
RAP ID: 13

Subwatershed: Raritan River North Branch

Site Area: 126,630 sq. ft.

Address: 571 Route 24
Mendham, NJ 07945

Block and Lot: Block 27, Lot 3



A rain garden can be installed south of the building to capture stormwater runoff from both the rooftop of the building as well as the parking lot. Downspout planter boxes can be installed in front of the building to capture the stormwater runoff from the western rooftop. 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"
14	17,580	0.8	8.9	80.7	0.014	0.48

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	0.029	5	2,090	0.08	275	$1,375
Planter boxes	N/A	2	N/A	N/A	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Mendham Animal Hospital

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

0 15' 30'

MENDHAM HILLS COMMUNITY CHURCH

RAP ID: 14

Subwatershed: Raritan River North Branch

Site Area: 269,785 sq. ft.

Address: 480 Route 24
Chester, NJ 07930

Block and Lot: Block 9, Lot 20.01

A rain garden can be installed southwest of the building to capture, treat, and infiltrate the stormwater coming from the top of the building. Pervious pavement can be installed in the southeastern corner of the parking lot to capture 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"
24	64,060	3.1	32.4	294.1	0.050	1.76

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	1,680	0.06	220	$1,100
Pervious pavement	0.142	24	10,420	0.39	1,620	$40,500

GREEN INFRASTRUCTURE RECOMMENDATIONS

Mendham Hills Community Church

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

0 20' 40'

WESTMONT MONTESSORI SCHOOL

RAP ID: 15

Subwatershed: Raritan River North Branch

Site Area: 133,335 sq. ft.

Address: 577 Route 24
Mendham, NJ 07945

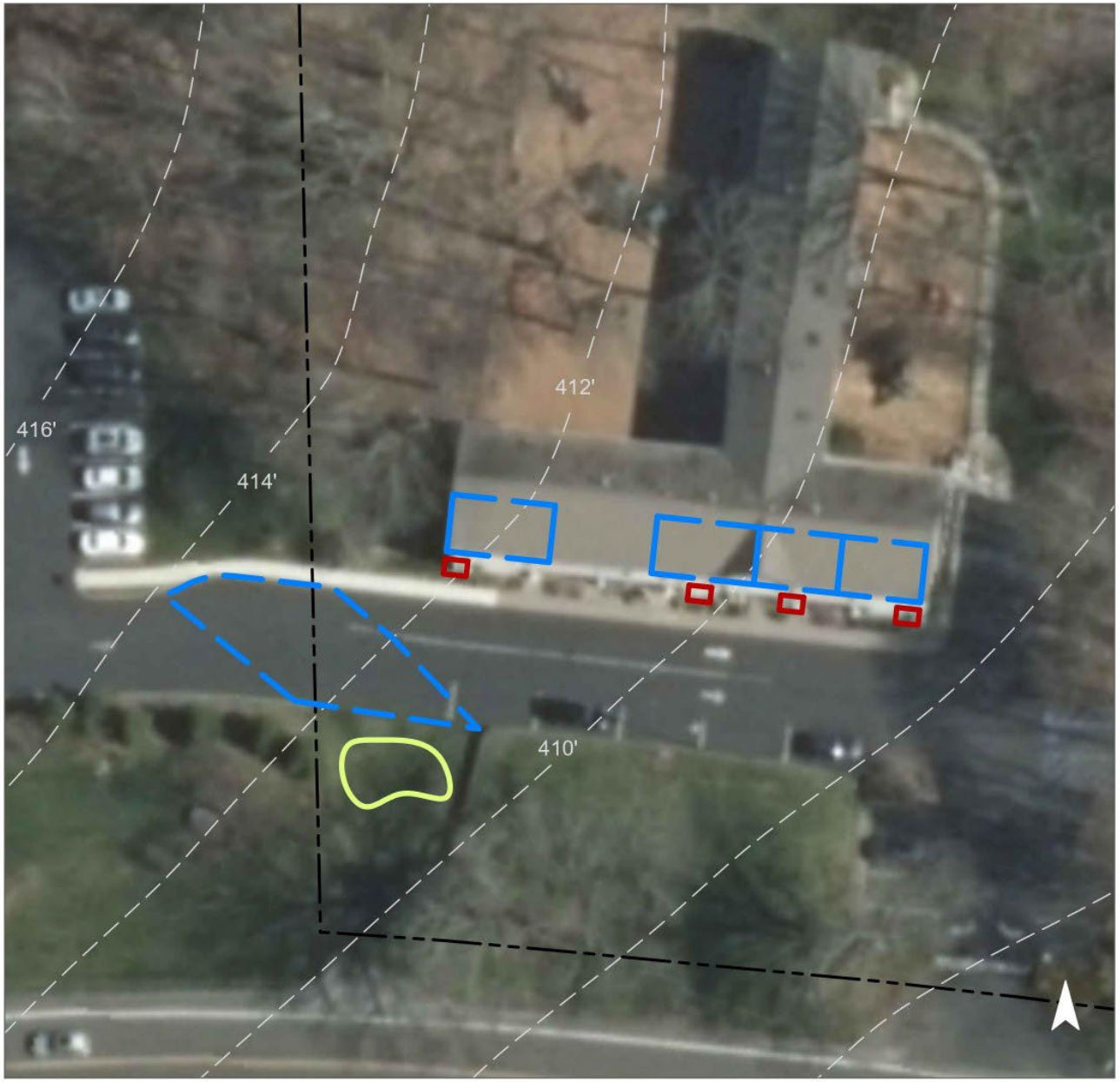
Block and Lot: Block 27, Lot 4

A rain garden can be installed south of the roadway to capture, treat, and infiltrate stormwater runoff from the pavement. Downspout planter boxes can be installed along the front, southern wall of the building to capture stormwater runoff from the rooftop. 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"
16	21,600	1.0	10.9	99.2	0.017	0.59

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	0.040	7	2,960	0.11	390	$1,950
Planter boxes	N/A	3	N/A	N/A	4 (boxes)	$4,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Westmont Montessori School

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

0 20' 40'

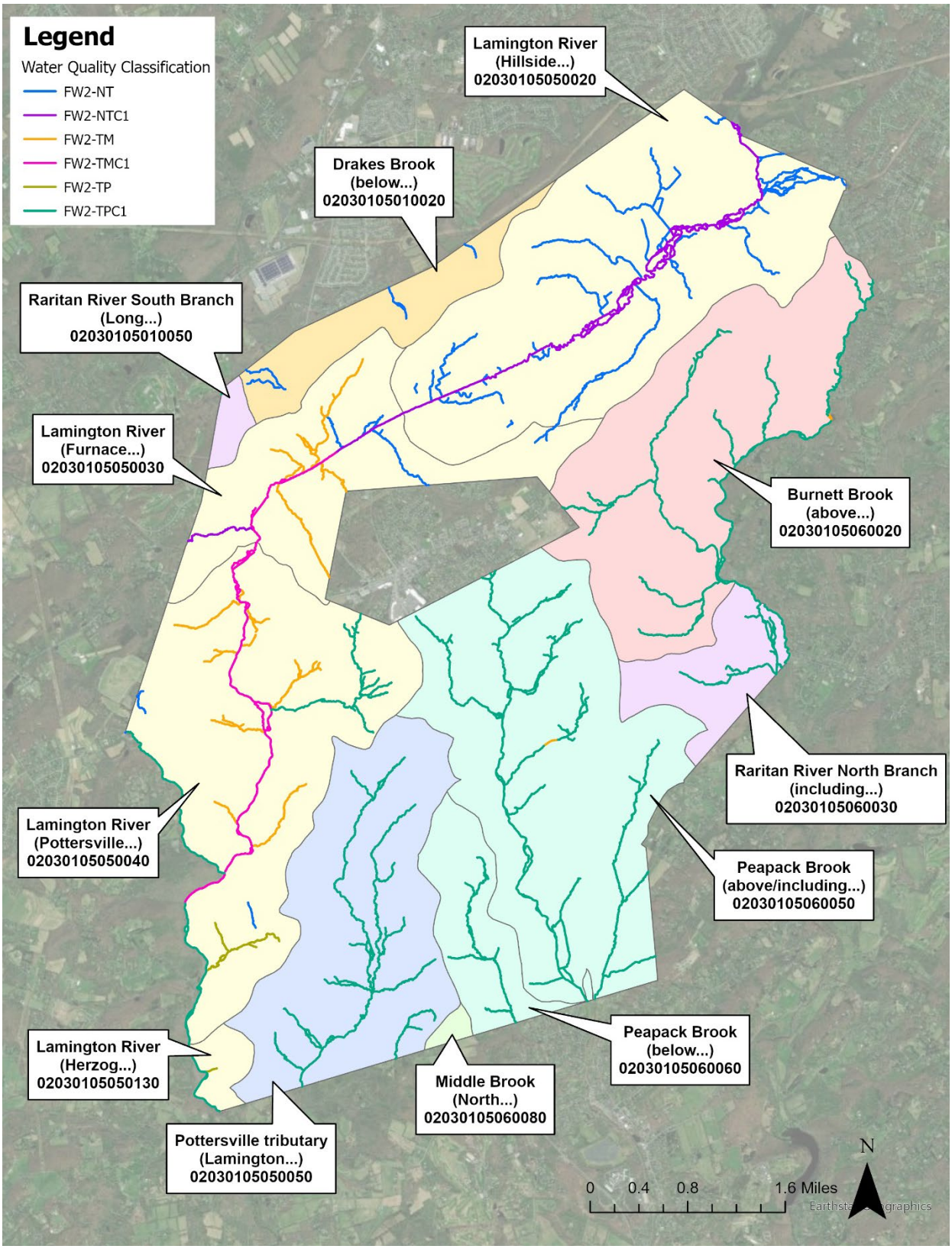


Figure 11. Water Quality Classification of Surface Waters in Chester Township

Table 9. Water Quality Classification of Surface Waters in Chester Township

Surface Water Quality Classification	Surface Water Quality Code	Miles	Percent of Municipal Streams
Freshwater 2, non-trout	FW2-NT	19.1	18.4%
Freshwater 2, non-trout, Category One	FW2-NTC1	10.8	10.4%
Freshwater 2, trout production, Category One	FW2-TPC1	57.3	55.1%
Freshwater 2, trout maintenance	FW2-TM	9.0	8.6%
Freshwater 2, trout production	FW2-TP	1.4	1.4%
Freshwater 2, trout maintenance, Category One	FW2-TMC1	6.4	6.1%

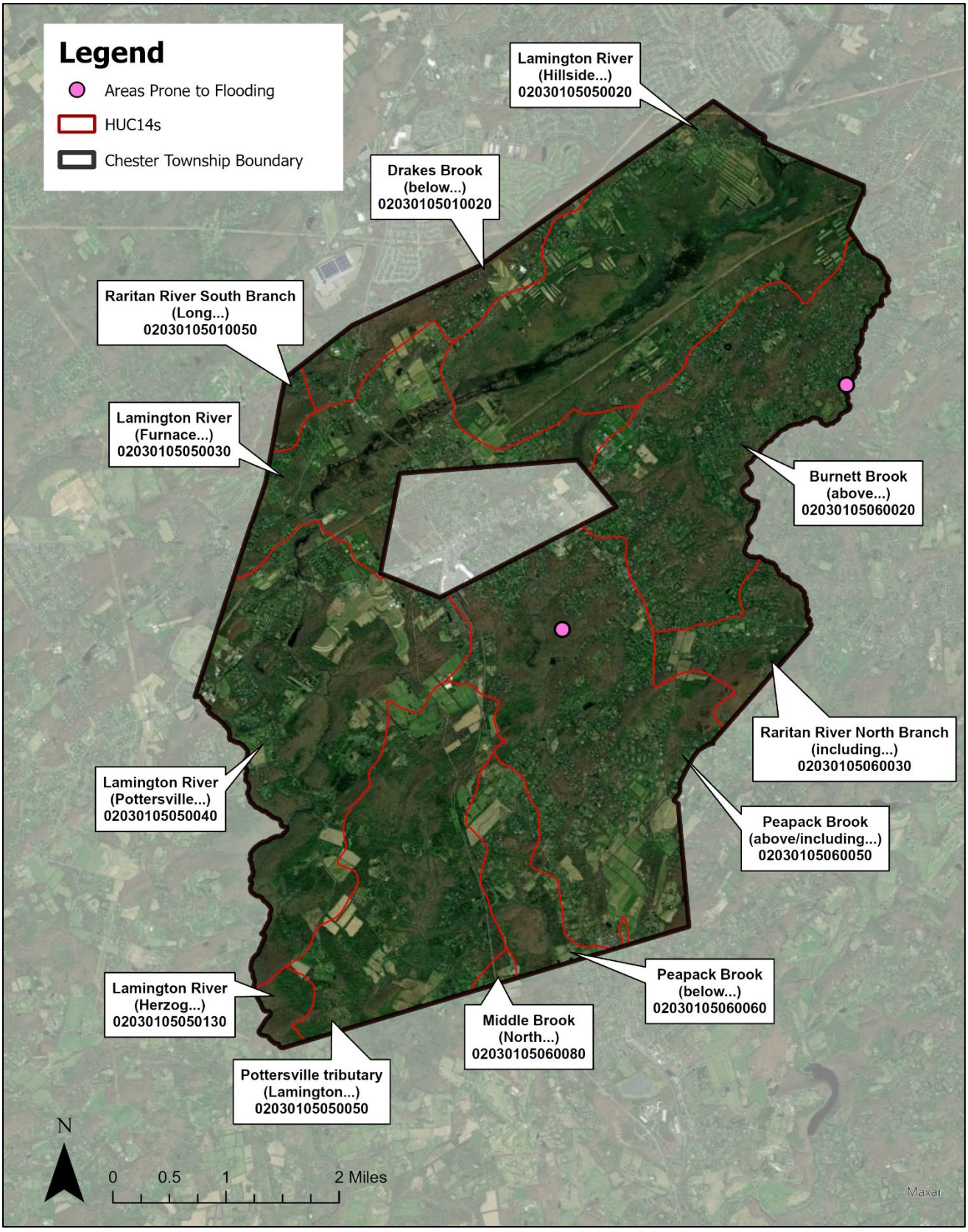


Figure 12. Areas Prone to Flooding in Chester Township