Mount Arlington Borough

Introduction

Located in Morris County in New Jersey, Mount Arlington Borough covers about 2.9 square miles. With a population of 5,909 (2020 United States Census), Mount Arlington Borough consists of 50.0% of urban land uses by area. Of that urban land use, approximately 42.7% is comprised of medium-density 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 49.7% of Mount Arlington Borough.

Mount Arlington Borough contains portions of four subwatersheds (Table 1). There are approximately 5.9 miles of rivers and streams within the municipality; these include tributaries to the Musconetcong River and several uncoded tributaries. Mount Arlington Borough is within the New Jersey Department of Environmental Protection (NJDEP) Watershed Management Areas (WMA) 1 (Upper Delaware), 6 (Upper Passaic, Whippany, and Rockaway), and 8 (North and South Branch Raritan).

Table 1: Subwatersheds of Mount Arlington Borough

Subwatershed	HUC14
Rockaway River (Stephens Brook to Longwood Lake)	02030103030040
Drakes Brook (above Eyland Avenue)	02030105010010
Lamington River (above Route 10)	02030105050010
Lake Hopatcong	02040105150020

The purpose of this report is to provide a comprehensive understanding of key, defining features within the subwatersheds throughout Mount Arlington Borough. 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 Mount Arlington Borough'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 Mount Arlington Borough in relation to the study area. Figure 2 shows the portions of the four HUC14s in Mount Arlington Borough and highlights the HUC14s that are contained within the study area. Figure 3 illustrates the land use in Mount Arlington Borough. A detailed land use analysis and nonpoint source loading analysis was completed for each HUC14 in Mount Arlington Borough and is presented in Table 2. Figure 4 shows the impervious cover in Mount Arlington Borough based upon NJDEP's 2015 impervious cover layer. An impervious cover analysis was completed for each HUC14 in Mount Arlington Borough 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". Only detention basins and naturalized detention basins were identified in Mount Arlington Borough within the study area.

Q-Farms are the parcels that have been qualified for farmland tax assessment. There are no Q-Farms located within Mount Arlington Borough.

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 (02030105010010, 02030105050010). Within these two HUC14s, there are 35.3 acres of buildings and 82.8 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 Mount Arlington Borough, approximately 2.2 acres of rooftop runoff would be managed with 0.44 acres of rain gardens. The plan also calls for the management of 10% of the roadways with bioswales. For the study area within Mount Arlington Borough, approximately 8.3 acres of roadway would be managed, or 2.3 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 Mount Arlington Borough are shown in Figure 6 and presented in Table 5. 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 7). Available information for each parcel in the study area is presented in Table 6. Class 15E parcels were excluded from the assessment. One of these properties offer opportunities to be retrofitted with green infrastructure to help reduce pollutant loads. This property is identified in Table 6 and represents a watershed improvement project that can be included in the municipality's Watershed Improvement Plan. Figure 8 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. Non-trout 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 subcategorized 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 two classifications that apply to the streams in Mount Arlington Borough. Figure 9 depicts the water quality classifications of surface waters throughout Mount Arlington Borough and Table 7 summarizes the total miles and percentage of each surface water quality classification in the municipality.

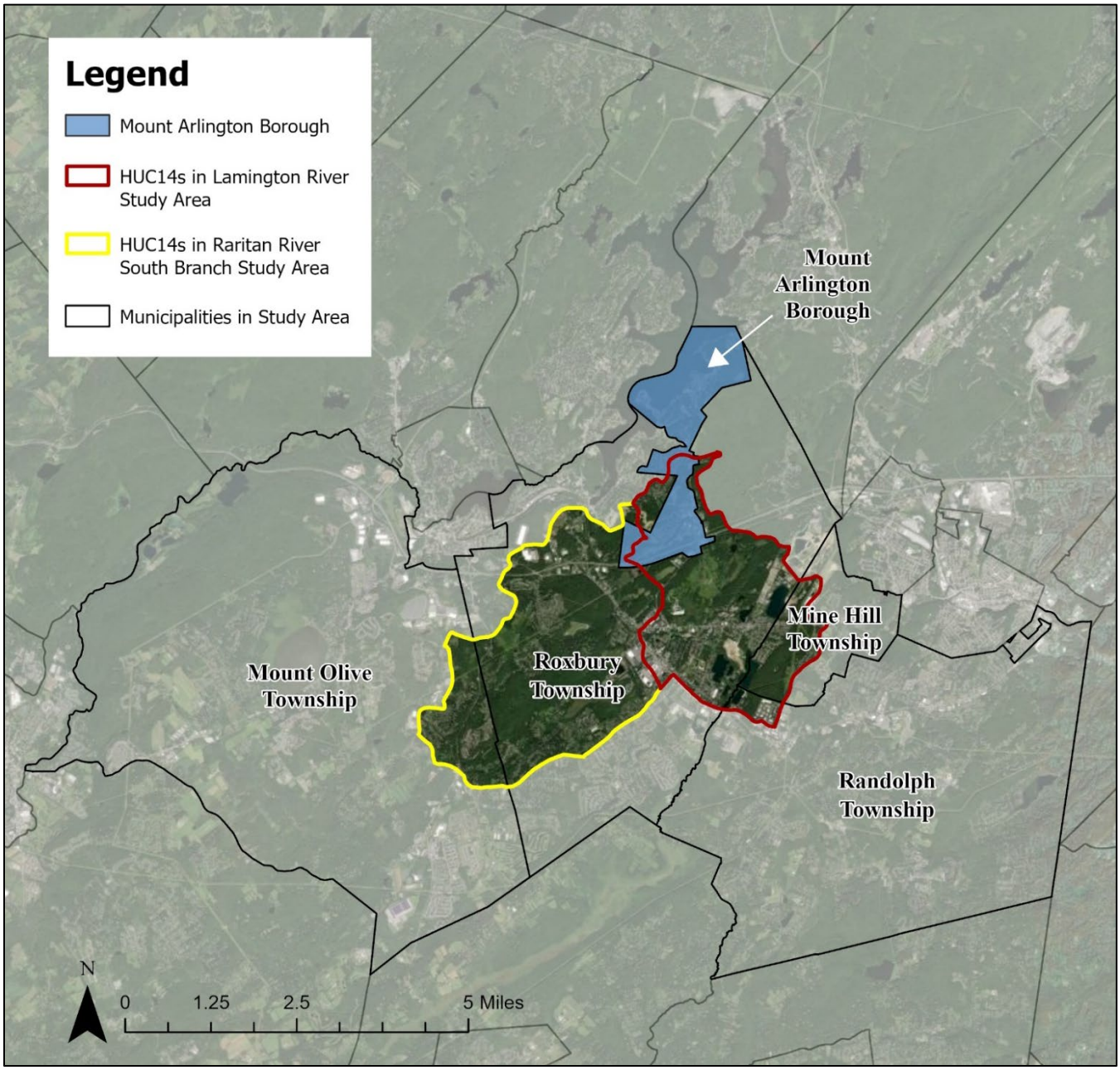


Figure 1: Municipalities in the Study Area

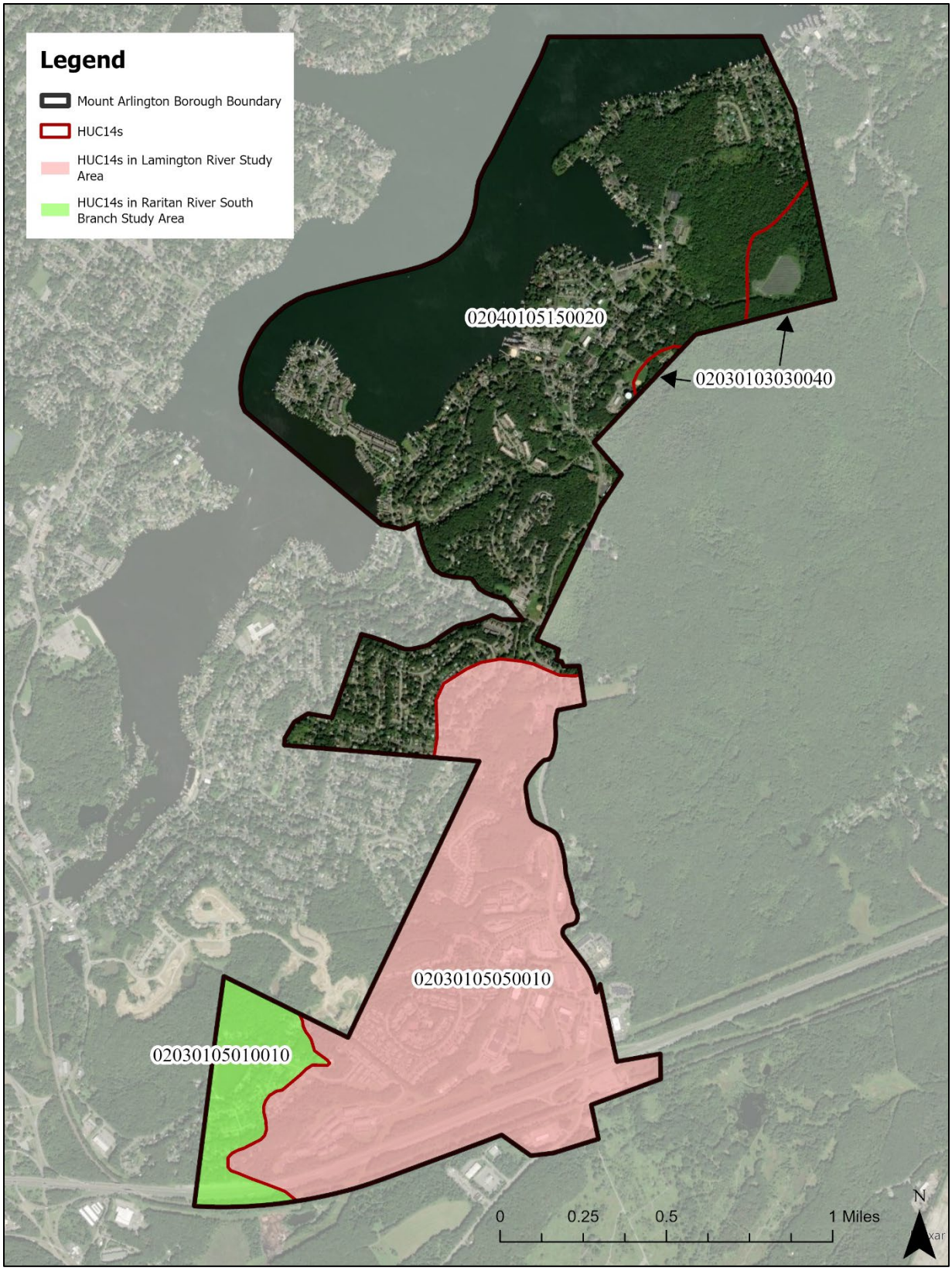


Figure 2: Portions of four HUC14s are in Mount Arlington Borough

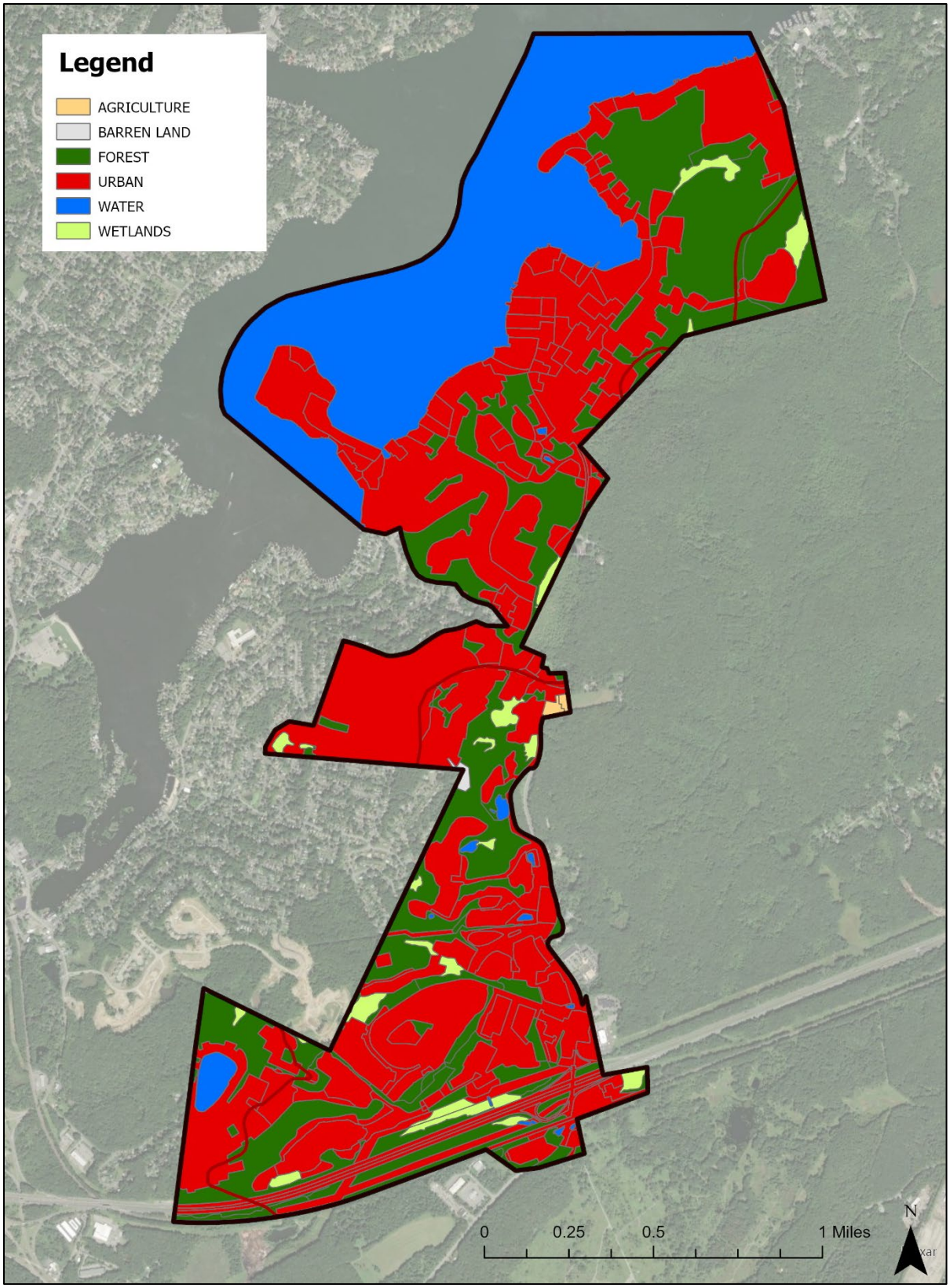


Figure 3: Land Use in Mount Arlington Borough

Table 2: Land Use Analysis and Nonpoint Source Loading Analysis by HUC14 for Mount Arlington Borough

Land Use Type	Area (acres)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Load (lbs/yr)
02030103030040				
Agriculture	0.0	0.0	0.0	0.0
Barren Land	0.0	0.0	0.0	0.0
Forest	31.5	3.1	94.4	1,258.2
Urban	13.8	19.4	207.7	1,938.8
Water	0.0	0.0	0.0	0.0
Wetlands	4.4	0.4	13.2	175.6
TOTAL =	**49.7**	**23.0**	**315.3**	**3,372.7**
02030105010010				
Agriculture	0.0	0.0	0.0	0.0
Barren Land	0.2	0.1	0.8	9.3
Forest	30.9	3.1	92.7	1,236.5
Urban	48.2	67.5	722.7	6,745.1
Water	8.9	0.9	26.8	357.0
Wetlands	0.8	0.1	2.4	32.2
TOTAL =	**89.0**	**71.6**	**845.4**	**8,380.1**
02030105050010				
Agriculture	2.4	3.1	23.9	716.1
Barren Land	1.7	0.9	8.5	102.6
Forest	177.6	17.8	532.9	7,105.1
Urban	361.3	505.9	5,419.9	50,585.9
Water	4.2	0.4	12.5	166.6
Wetlands	25.5	2.5	76.5	1,019.7
TOTAL =	**572.7**	**530.5**	**6,074.2**	**59,696.0**
02040105150020				
Agriculture	0.0	0.0	0.0	0.0
Barren Land	0.0	0.0	0.0	0.0
Forest	201.5	20.2	604.6	8,061.8
Urban	474.6	664.5	7,119.2	66,446.2
Water	398.2	39.8	1,194.7	15,929.7
Wetlands	8.9	0.9	26.7	355.9
TOTAL =	**1,083.3**	**725.3**	**8,945.3**	**90,793.7**
All HUCs				
Agriculture	2.4	3.1	23.9	716.1
Barren Land	1.9	0.9	9.3	111.9
Forest	441.5	44.2	1,324.6	17,661.6
Urban	898.0	1,257.2	13,469.6	125,716.1
Water	411.3	41.1	1,234.0	16,453.4
Wetlands	39.6	4.0	118.8	1,583.4

TOTAL =	**1,794.7**	**1,350.4**	**16,180.1**	**162,242.4**

Impervious Cover Analysis

NJDEP's Open Data impervious surface GIS data layer depicts surfaces throughout Mount Arlington Borough 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 Mount Arlington Borough. Based upon the NJDEP impervious surface data, Mount Arlington Borough has impervious cover totaling 23.8 %. Table 3 shows impervious cover for each HUC14. The extent of the impervious cover in Mount Arlington Borough 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, Mount Arlington Borough's impervious cover percentage would suggest that its waterways are primarily impacted and most likely contribute to the degradation of the state's surface water quality standards.

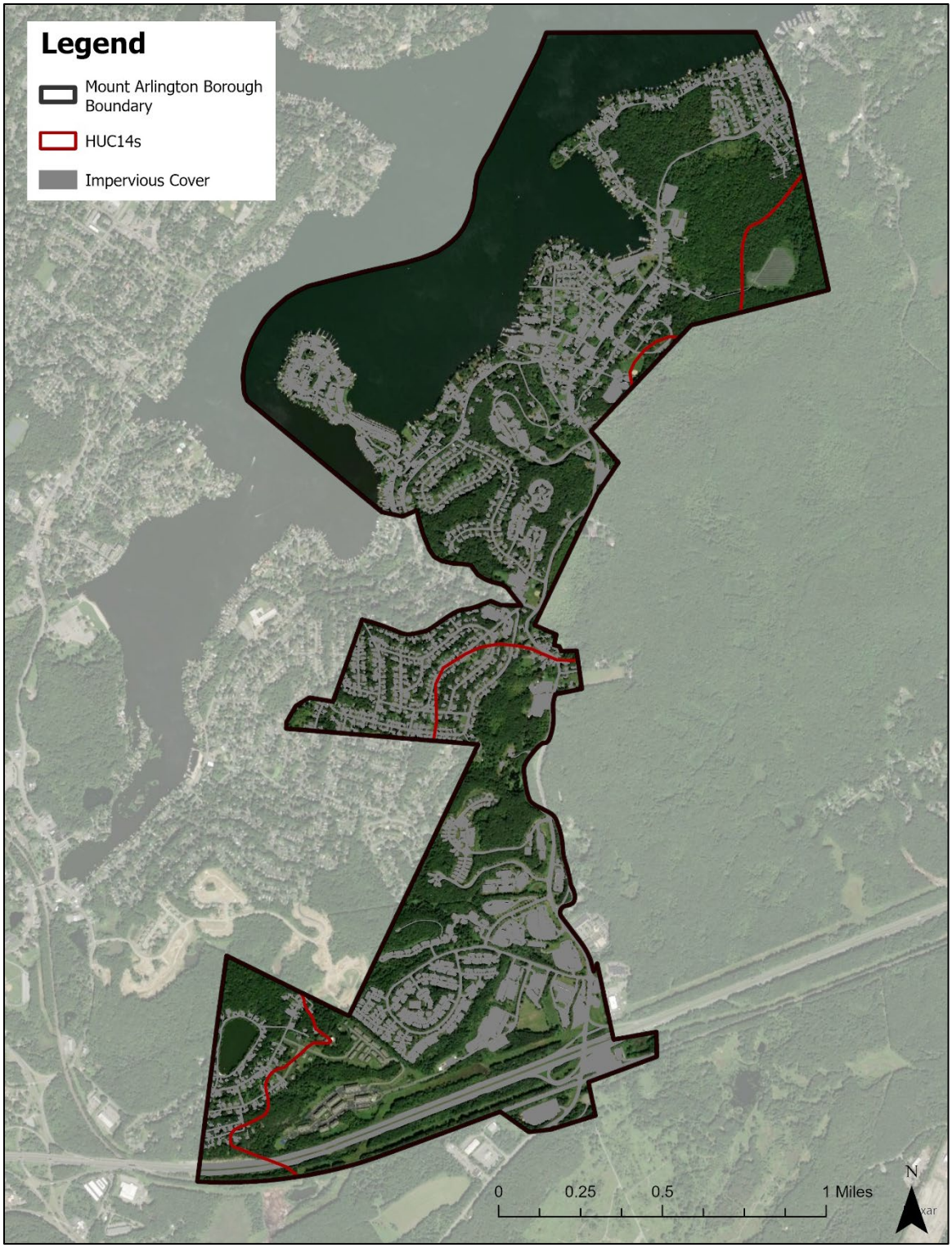


Figure 4: Impervious Cover in Mount Arlington Borough

Table 3: Impervious Cover Analysis by HUC14 for Mount Arlington Borough

Class	Area (acres)	HUC Impervious Cover (%)
02030103030040		
Building	0.07	
Other	0.29	
Road	0.46	
TOTAL =	**0.8**	**1.7%**
02030105010010		
Building	3.89	
Other	7.61	
Road	11.25	
TOTAL =	**22.8**	**25.6%**
02030105050010		
Building	31.37	
Other	67.07	
Road	71.53	
TOTAL =	**170.0**	**29.7%**
02040105150020		
Building	52.29	
Other	104.34	
Road	76.93	
TOTAL =	**233.6**	**21.6%**
All HUCs		
Building	87.62	
Other	179.31	
Road	160.17	
TOTAL =	**427.1**	**23.8%**

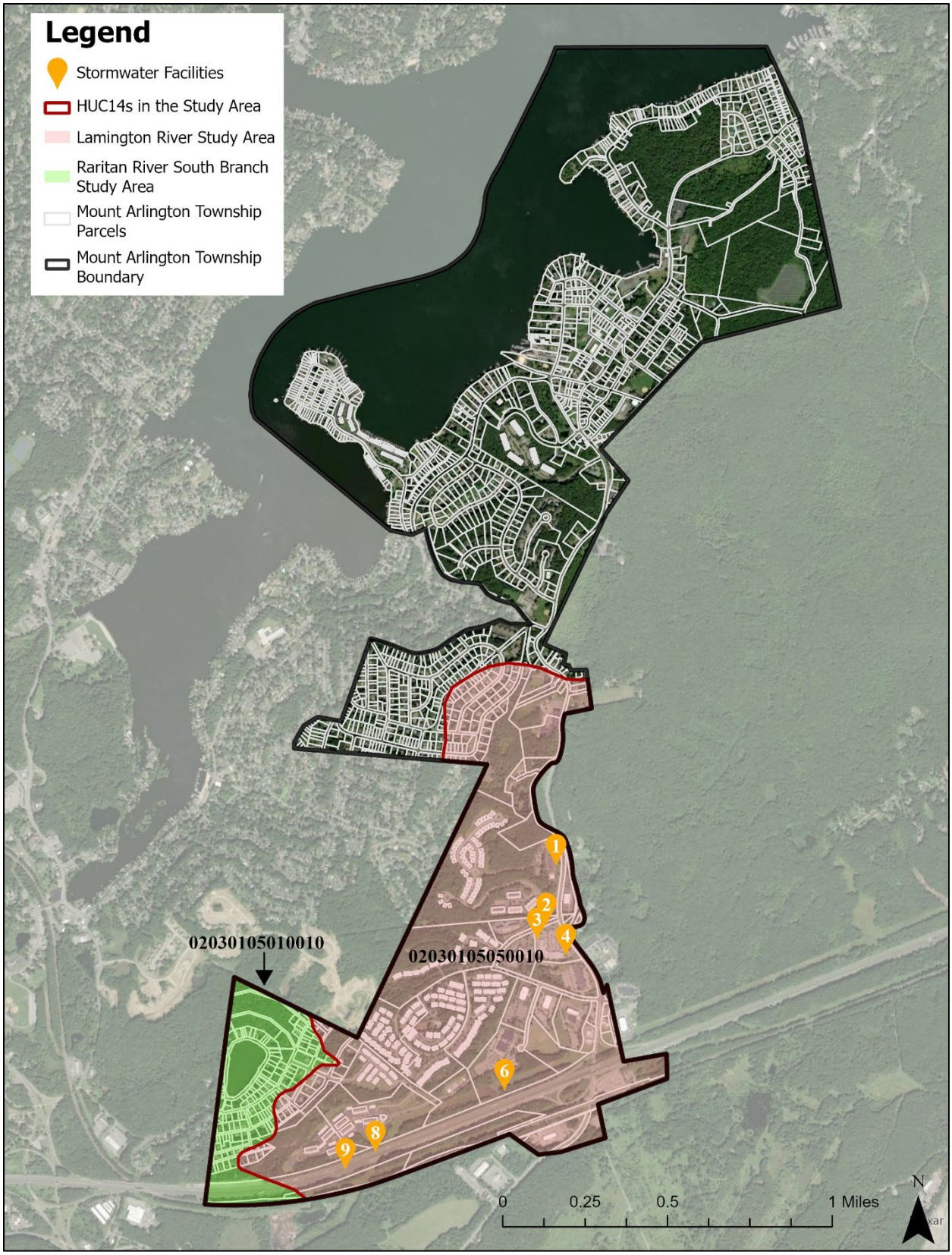


Figure 5: Stormwater Facilities in the Study Area of Mount Arlington Borough

Table 4: Location of Stormwater Facilities in the Study Area of Mount Arlington Borough

Lamington River Study Area		
ID	**Address**	**Type**
1	125 Howard Blvd	N
2	125 Howard Blvd	N
3	2 Hillside Dr	D
4	181 Howard Blvd	N
6	400 Valley Rd	N
8	500 Valley Rd	N
9	Woodmont Court	D

"D" = Detention, "N" = Naturalized

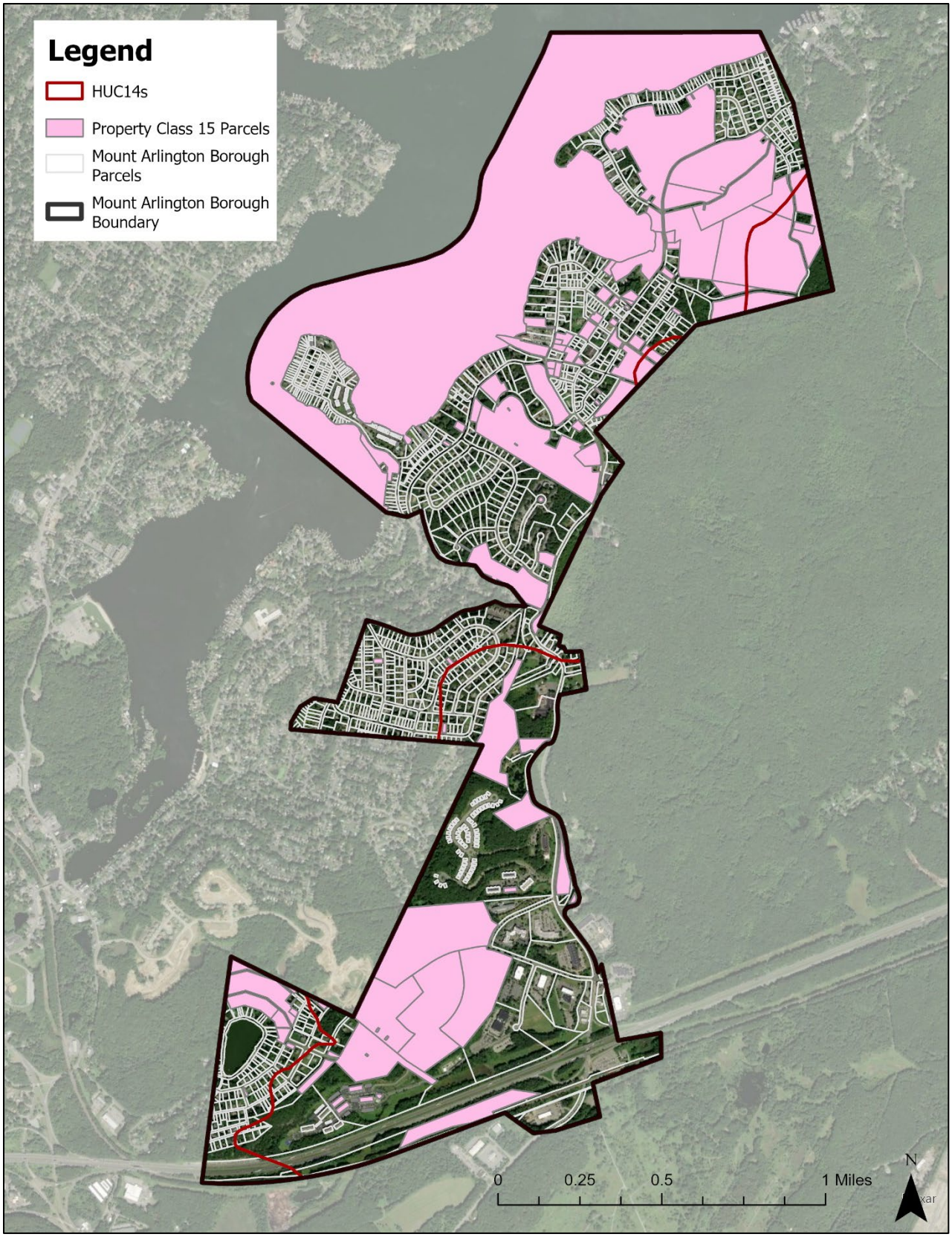


Figure 6: Property Class 15 Parcels in Mount Arlington Borough

Table 5: Property Class 15 Parcels in Mount Arlington Borough

Block	Lot	Prop Class	Location	Facility Type
8	5.01	15A	446 Howard Blvd	School
121	59	15A	44 Kadel Dr	Schools
2	42	15C	Mcgregor Ave	Parkland
2	44	15C	124 Mcgregor Ave	Tax Lien Foreclosure
5	15	15C	Southard Rd	Vacant Land
5	16	15C	Southard Rd	Vacant Land
7	1	15C	Lake Hopatcong	Lake Hopatcong
8	2	15C	Zuck Rd	Vacant Land
8	3	15C	Berkshire Ave	Garage
8	4	15C	Zuck Rd	Vacant Land
8	5	15C	Littell Way	Parkland
8	6	15C	Littell Way	Vacant Land
8	10.01	15C	444 Howard Blvd	Recreation Center
8	10.02	15C	442 Howard Blvd	Recreation Center
8	17.01	15C	Berkshire Ave	Vacant Land
9	2	15C	Howard Blvd	Parkland
9	3	15C	Littell Way	Tax Lien Foreclosure
10	67	15C	447-451 Howard Blvd	Maintenance Bldg.
10	68	15C	Howard Blvd	Docks&Beach
10	70	15C	Hopatcong Ave	Dock Bulkhead
10	77	15C	Edgemere Ave	Parking Area
10	78	15C	419 Howard Blvd	Muncipal Bldg
12	1	15C	Berkshire Ave	Tax Lien Foreclosure
18	12	15C	Windemere Ave	Beach
20	5	15C	Howard Blvd	Parking Area
22	1	15C	Mountainview Ave	Vacant Land
22	16	15C	Summit Ave	Tax Lien Foreclosure
22	20	15C	Summit Ave	Vacant Land
25	4	15C	407 Howard Blvd	Fire House
30	16	15C	Mountainview Ave	Administrative Bldg.
31	2	15C	Altenbrand&Summit Av	Vacant Land
33	1	15C	18 No Glen Ave	Community Center
33	2	15C	520 Altenbrand Ave	Vacant
33	4	15C	526 Altenbrand Ave	Administrative Bldg
35	9	15C	Summit&Altenbrand Av	Vacant Land
35	18	15C	Summit Ave	Vacant Land
36	1	15C	1 Altenbrand Ave	Maintenance Bldg
39	8.02	15C	475 Windemere Ave	Tower
39	46	15C	Hillard Rd	Tax Lien Foreclosure
39	69	15C	Windemere Ave	Vacant Land
43	1	15C	302 Howard Blvd	Tax Lien Foreclosure
44	1	15C	Memorial Park	Playground
47	1	15C	333 Howard Blvd	Tax Lien Foreclosure
61	17.01	15C	621 Sandra Dr	Vacant Land
61	18	15C	195 Howard Blvd	Right of Way
61	21	15C	165 Howard Blvd	Berkshire Valley

61.03	33.02	15C	Howard Blvd	Right of Way
63	2	15C	Howard Blvd	Vacant Land
67	1	15C	Howard Blvd	Vacant Land
69	4	15C	200 Stierli Ct	Vacant Land
72.01	3	15C	15 Dawes Way	Vacant Land
80	1	15C	Orben Dr	Tax Lien Foreclosure
83	9	15C	156 Orben Dr	Park
85.01	1	15C	Coolidge Trl	Tax Lien Foreclosure
85.01	2	15C	Coolidge Trl	Park
86	5	15C	Coolidge Trl	Park
87	6	15C	171 Orben Dr	Fire House
87	7	15C	Coolidge Trl	Park
88	1	15C	Milford&Rogerene Way	Park
89	16	15C	Rogerene Way	Park
89	22	15C	Milford Trl	Park
90	13	15C	Orben Dr	Park
121	47.01	15C	Robert Ter	Park
124	1	15C	10 Schmitz Ter	Vacant Land
11802	1	15C	501 Edith Rd	Vacant Land
13201	1	15C	250 Howard Blvd	Vacant Land
9	2.01	15D	450 Howard Blvd	Church
17	18	15D	Prospect St	Schools
19	5	15D	Arlington Ave	Meeting Hall
20	1	15D	Arlington Ave	Church
26	3	15D	Windemere Ave	Church
26	4	15D	10 Windemere Ave	Parish House
26	5	15D	16 Windemere Ave	Church Parking
26	16	15D	1 Park Ave Cor Altenbrand	Rectory
8	15	15F	434 Howard Blvd	Disabled Veteran
18	7	15F	19 Windemere Ave	Common Element
24	1	15F	3 Prospect St	Common Element
29	2.01	15F	535 Altenbrand Ave	Rabbi Residence
39	12	15F	42 Lakeshore Dr	Disabled Veteran
39	12	15F	4 Catamaran Ct	Disabled Veteran
41	6	15F	355 Howard Blvd	Common Element
45	1	15F	28 Sunset Ter	Common Element
49	1	15F	Ridgeview Ln Clubhouse	Common Element
49.01	21	15F	21 Ridgeview Ln	Disabled Veteran
49.03	62	15F	62 Ridgeview Ln	Disabled Veteran
51	9	15F	71 N Bertrand Rd	Disabled Vet
57	1	15F	41 Bertrand Isl Rd	Common Element
58.02	41	15F	41 Zachary Way	Disabled Veteran
58.02	47	15F	47 Zachary Way	Disabled Veteran
61	23.09	15F	Seasons Dr	Common Element
61	23.1	15F	Seasons Dr	Common Element
61	23.11	15F	Seasons Dr	Common Element
61	23.11	15F	14 Mulberry Ln	Disabled Veteran
61	23.11	15F	22 Mulberry Ln	Disabled Veteran
61	23.12	15F	Seasons Dr	Common Element

61	42.01	15F	500 Valley Rd	Residence
61	42.03	15F	Woodland Way	Common Element
61	42.03	15F	10 Shadetree Ln	Disabled Veteran
61.01	1	15F	22 Howard Blvd	Common Element
97	30	15F	567 Eric Ln	Disabled Veteran
106	9	15F	677 Henmar Dr	Disabled Veteran
113	28	15F	626 Bensel Dr	Disabled Veteran
123	1.02	15F	Henry Ct	Common Element
123	66	15F	482 Windemere Ave	Disabled Veteran

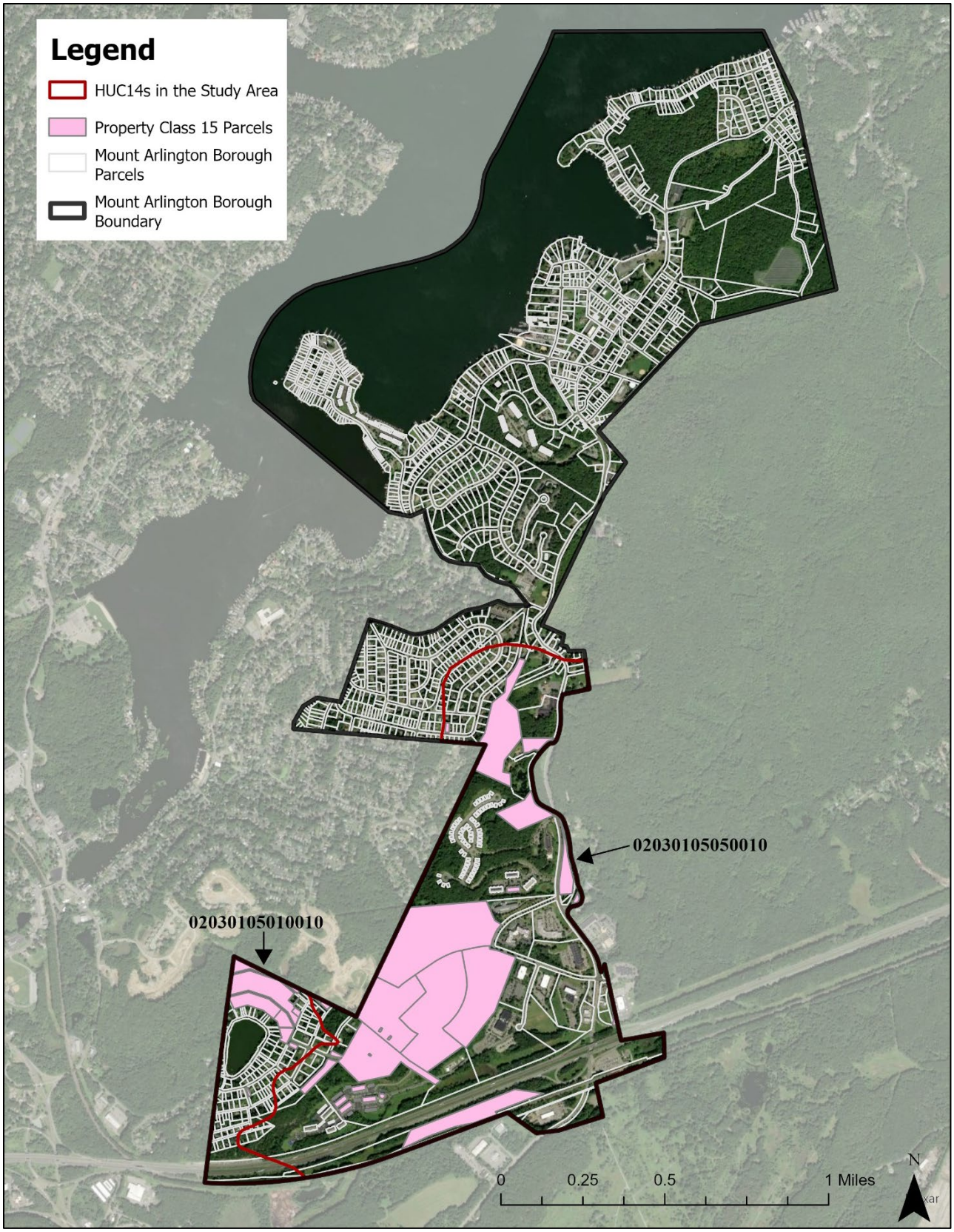


Figure 7: Property Class 15 parcels in the Study Area of Mount Arlington Borough

Table 6: Property Class 15 Parcels in the Study Area of Mount Arlington Borough

Block	Lot	Prop Class	Location	Facility Type
61	17.01	15C	621 Sandra Dr	Vacant Land
61	18	15C	195 Howard Blvd	Right of Way
61	21	15C	165 Howard Blvd	Berkshire Valley
61.03	33.02	15C	Howard Blvd	Right of Way
67	1	15C	Howard Blvd	Vacant Land
69	4	15C	200 Stierli Ct	Vacant Land
72.01	3	15C	15 Dawes Way	Vacant Land
80	1	15C	Orben Dr	Tax Lien Foreclosure
83	9	15C	156 Orben Dr	Park
85.01	1	15C	Coolidge Trl	Tax Lien Foreclosure
85.01	2	15C	Coolidge Trl	Park
86	5	15C	Coolidge Trl	Park
***87**	**6**	**15C**	**171 Orben Dr**	**Fire House**
87	7	15C	Coolidge Trl	Park
88	1	15C	Milford&Rogerene Way	Park
89	16	15C	Rogerene Way	Park
89	22	15C	Milford Trl	Park
90	13	15C	Orben Dr	Park
13201	1	15C	250 Howard Blvd	Vacant Land
58.02	41	15F	41 Zachary Way	Disabled Veteran
58.02	47	15F	47 Zachary Way	Disabled Veteran
61	23.09	15F	Seasons Dr	Common Element
61	23.1	15F	Seasons Dr	Common Element
61	23.11	15F	Seasons Dr	Common Element
61	23.11	15F	14 Mulberry Ln	Disabled Veteran
61	23.11	15F	22 Mulberry Ln	Disabled Veteran
61	23.12	15F	Seasons Dr	Common Element
61	42.01	15F	500 Valley Rd	Residence
61	42.03	15F	Woodland Way	Common Element
61	42.03	15F	10 Shadetree Ln	Disabled Veteran
61	42.03	15F	10 Shadetree Ln	Disabled Veteran
61.01	1	15F	22 Howard Blvd	Common Element
106	9	15F	677 Henmar Dr	Disabled Veteran
113[1]	28	15F	626 Bensel Dr	Disabled Veteran

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

[1] Only a portion of the parcel is in the study area

Figure 8: Sites with Green Infrastructure Opportunities in Mount Arlington Borough

LAKE ROGERENE FIRE DEPARTMENT

RAP ID: 1

Subwatershed: Drakes Brook

HUC14 ID: 02030105010010

Site Area: 11,949 sq. ft.

Address: 173 Orben Drive
Landing, NJ 07850

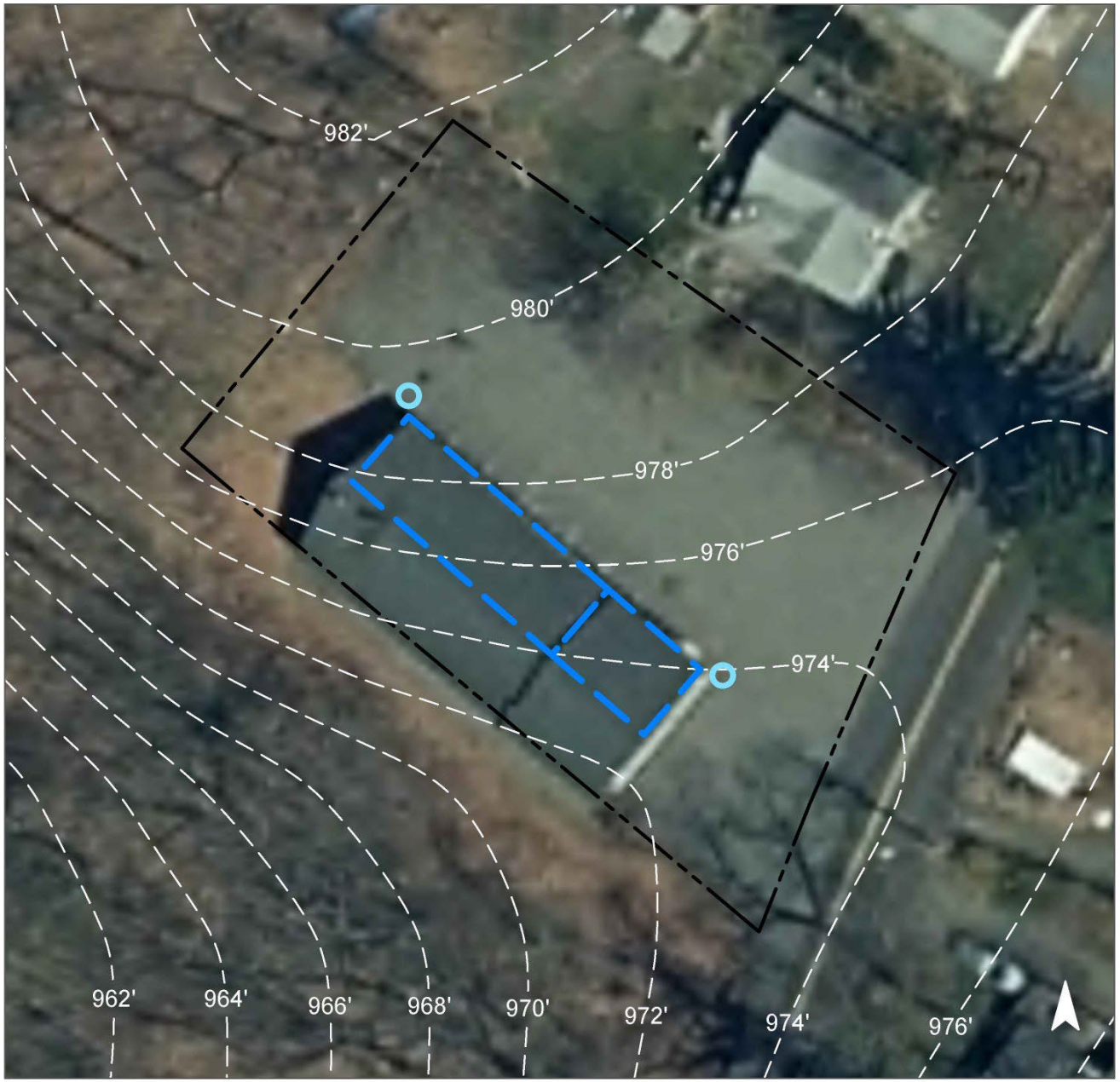
Block and Lot: Block 87, Lot 6

Cisterns can be installed to the northeast and southeast of the building to divert and detain the stormwater runoff from the rooftop for later non-potable reuse such as washing vehicles.

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"
83	9,910	0.5	5.0	45.5	0.008	0.31

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
Rainwater harvesting	1,295	0.038	6	1,100	0.04	1,100 (gal)	$3,300

GREEN INFRASTRUCTURE RECOMMENDATIONS



Lake Rogerene Fire Department

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

0 15' 30'

EDITH M. DECKER ELEMENTARY SCHOOL

RAP ID: 2

Subwatershed: Lake Hopatcong

HUC14 ID: 02040105150020

Site Area: 691,993 sq. ft.

Address: 446 Howard Boulevard
Mount Arlington, NJ 07856

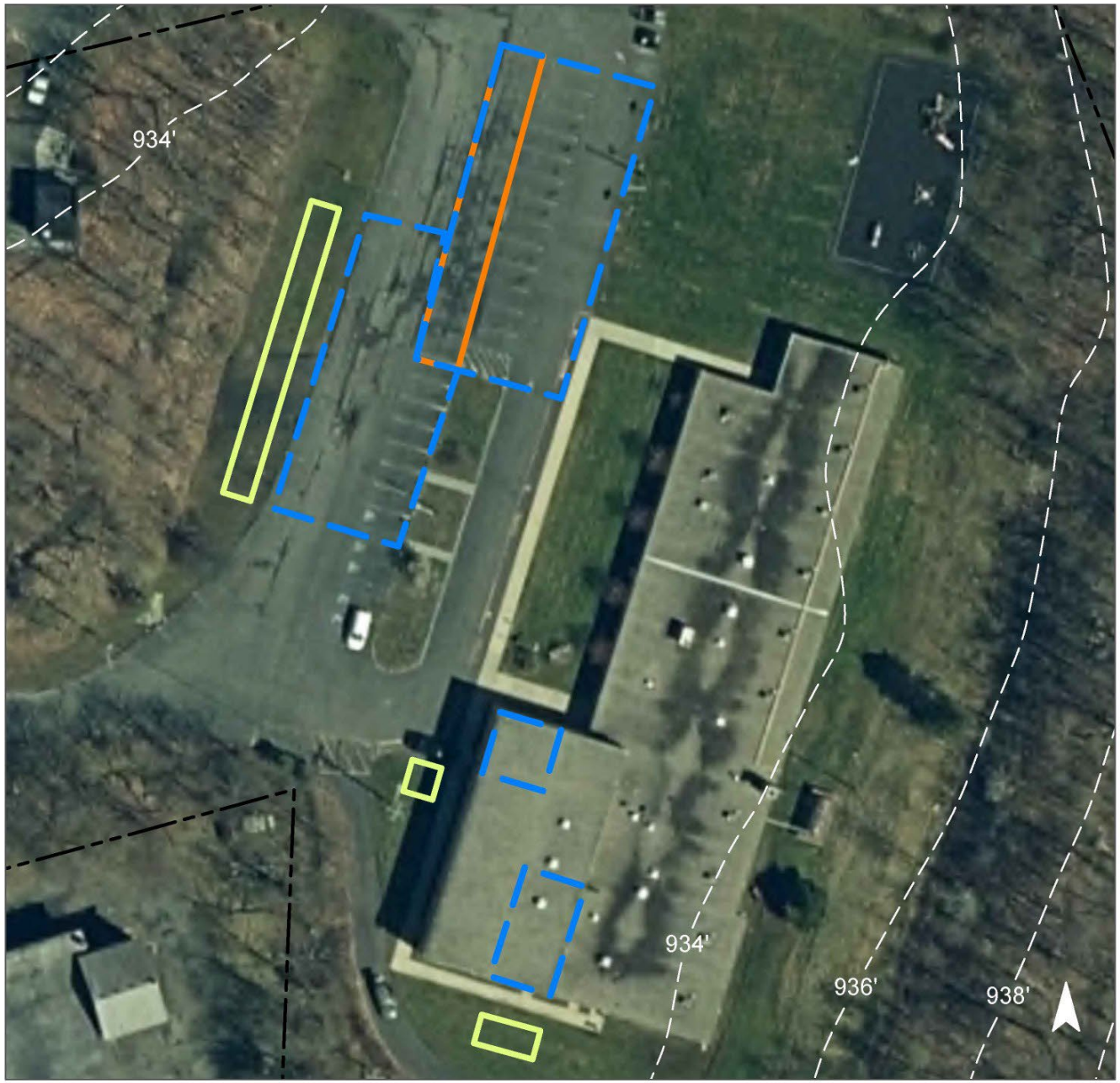
Block and Lot: Block 8, Lot 5.01

Rain gardens can be installed to the south and southwest of the building and to the west of the parking lot to capture, treat, and infiltrate stormwater runoff from the rooftop and asphalt. The rain garden to the southwest of the school will require downspout redirection and disconnection. The rain garden to the south of the school will require downspout redirection underneath the sidewalk. The existing parking spaces to the northwest of the lot can be converted into pervious pavement to capture and infiltrate the 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 50"
13	92,648	4.5	46.8	425.4	0.072	2.89

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	7,220	0.214	32	15,060	0.57	1,800	$18,000
Pervious pavement	7,800	0.231	34	16,270	0.61	2,175	$54,375

GREEN INFRASTRUCTURE RECOMMENDATIONS



Edith M. Decker Elementary School

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

0 30' 60'

MOUNT ARLINGTON BOROUGH HALL

RAP ID: 3

Subwatershed: Lake Hopatcong

HUC14 ID: 02040105150020

Site Area: 37,733 sq. ft.

Address: 419 Howard Boulevard
Mount Arlington, NJ 07856

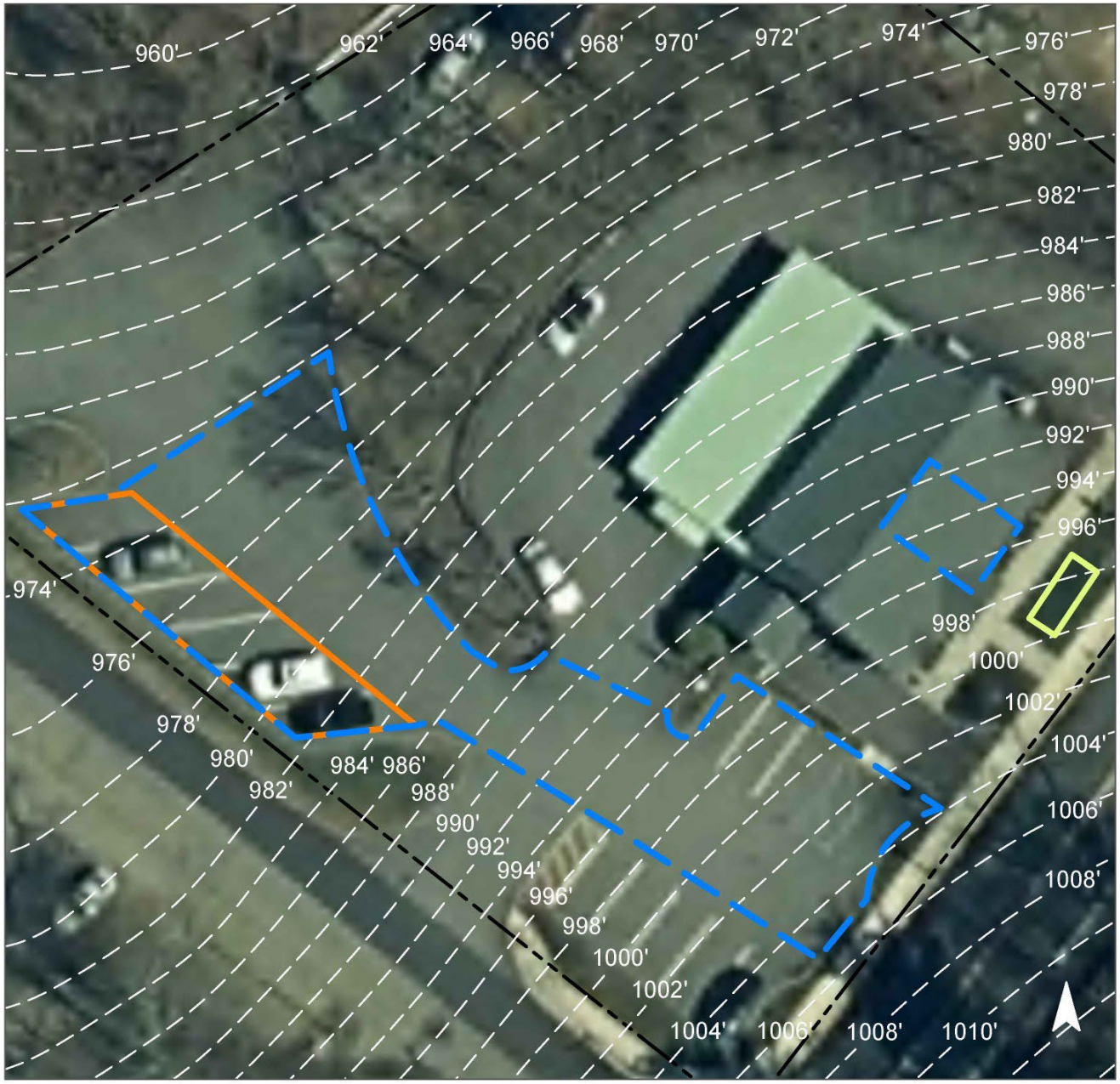
Block and Lot: Block 10, Lots 77 & 78

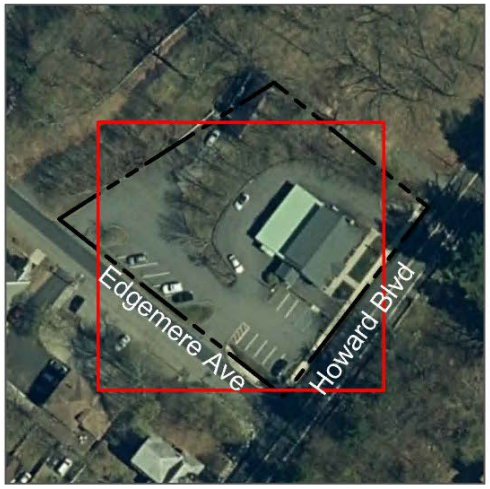
A rain garden can be installed to the east of the building to capture, treat, and infiltrate stormwater runoff from the rooftop. This will require a downspout redirection beneath the sidewalk. The existing parking spaces to the west of the building can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt. A trench drain will be required. 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"
75	28,423	1.4	14.4	130.5	0.022	0.89

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	350	0.010	2	730	0.03	90	$900
Pervious pavement	5,880	0.174	25	12,270	0.46	1,180	$29,500

GREEN INFRASTRUCTURE RECOMMENDATIONS





Mount Arlington Borough Hall

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

0 15' 30'

MOUNT ARLINGTON POLICE DEPARTMENT & CIVIC CENTER

RAP ID: 4

Subwatershed: Lake Hopatcong

HUC14 ID: 02040105150020

Site Area: 51,397 sq. ft.

Address: 520 Altenbrand Avenue &
18 North Glen Avenue
Mount Arlington, NJ 07856

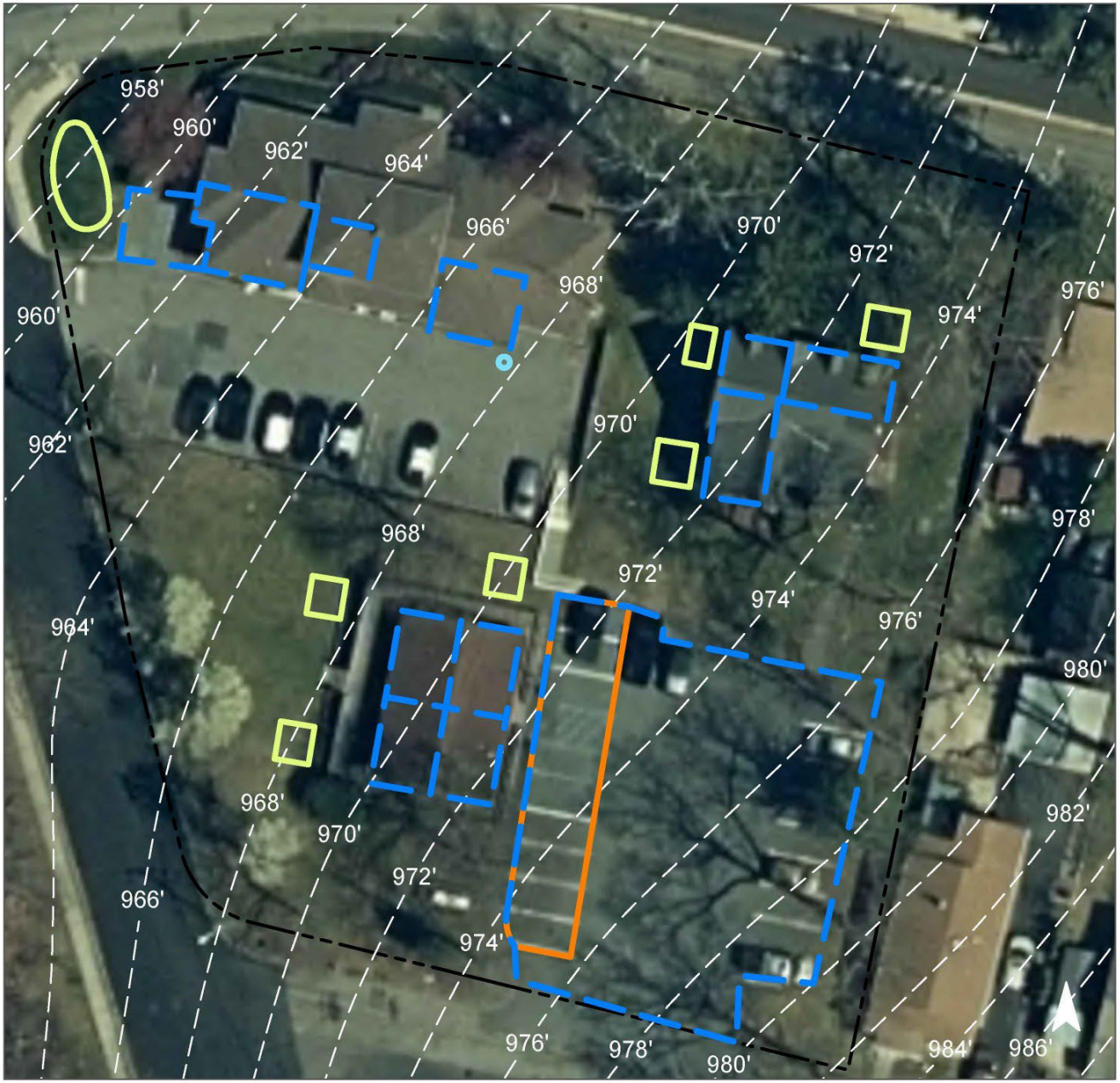
Block and Lot: Block 33, Lots 1, 2, 4

Rain gardens can be installed in multiple grass areas around the property to capture, treat, and infiltrate stormwater runoff from the building rooftops. Many of these will require downspout redirections and disconnections . The rain garden to the west of the police department will also manage stormwater runoff from the parking lot. This rain garden will require a downspout disconnection, a trench drain, and a curb cut. The existing parking spaces to the east of the civic center can be converted into pervious pavement to capture and infiltrate the stormwater runoff from the asphalt lot. The southeastern downspout can also be disconnected to the pervious pavement to manage rooftop runoff. A cistern can be installed to the south of the police department building to divert and detain stormwater runoff from the rooftop for later non -potable reuse such as watering the landscaping ve getation or washing vehicles. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suita bility 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"
63	32,471	1.6	16.4	149.1	0.025	1.01

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	3,470	0.103	15	7,240	0.27	860	$8,600
Pervious pavement	8,425	0.249	36	17,570	0.66	1,725	$43,125
Rainwater harvesting	420	0.012	2	400	0.01	400 (gal)	$1,200

GREEN INFRASTRUCTURE RECOMMENDATIONS



Mount Arlington Police Department & Civic Center

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

0 20' 40'

MOUNT ARLINGTON PUBLIC LIBRARY

RAP ID: 5

Subwatershed: Lake Hopatcong

HUC14 ID: 02040105150020

Site Area: 110,097 sq. ft.

Address: 333 Howard Boulevard
Mount Arlington, NJ 07856

Block and Lot: Block 47, Lot 1

Rain gardens can be installed to the northeast and southeast corners of the building to capture, treat, and infiltrate stormwater runoff from the rooftop. This will require downspout disconnections. The northern rain garden will require downspout redirection beneath the sidewalk. The existing parking spaces to the east of the building can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt. A cistern can be installed to the southwest of the building to divert and detain stormwater runoff from the rooftop for later non-potable reuse such as watering the nearby garden beds. 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	33,904	1.6	17.1	155.7	0.026	1.06

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	1,130	0.033	6	2,360	0.09	285	$2,850
Pervious pavement	4,740	0.140	21	9,890	0.37	1,310	$32,750
Rainwater harvesting	530	0.016	2	500	0.02	500 (gal)	$1,500

GREEN INFRASTRUCTURE RECOMMENDATIONS

Mount Arlington Public Library

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

0 15' 30'

MOUNT ARLINGTON PUBLIC SCHOOL

RAP ID: 6

Subwatershed: Lake Hopatcong

HUC14 ID: 02040105150020

Site Area: 478,428 sq. ft.

Address: 235 Howard Boulevard
Mount Arlington, NJ 07856

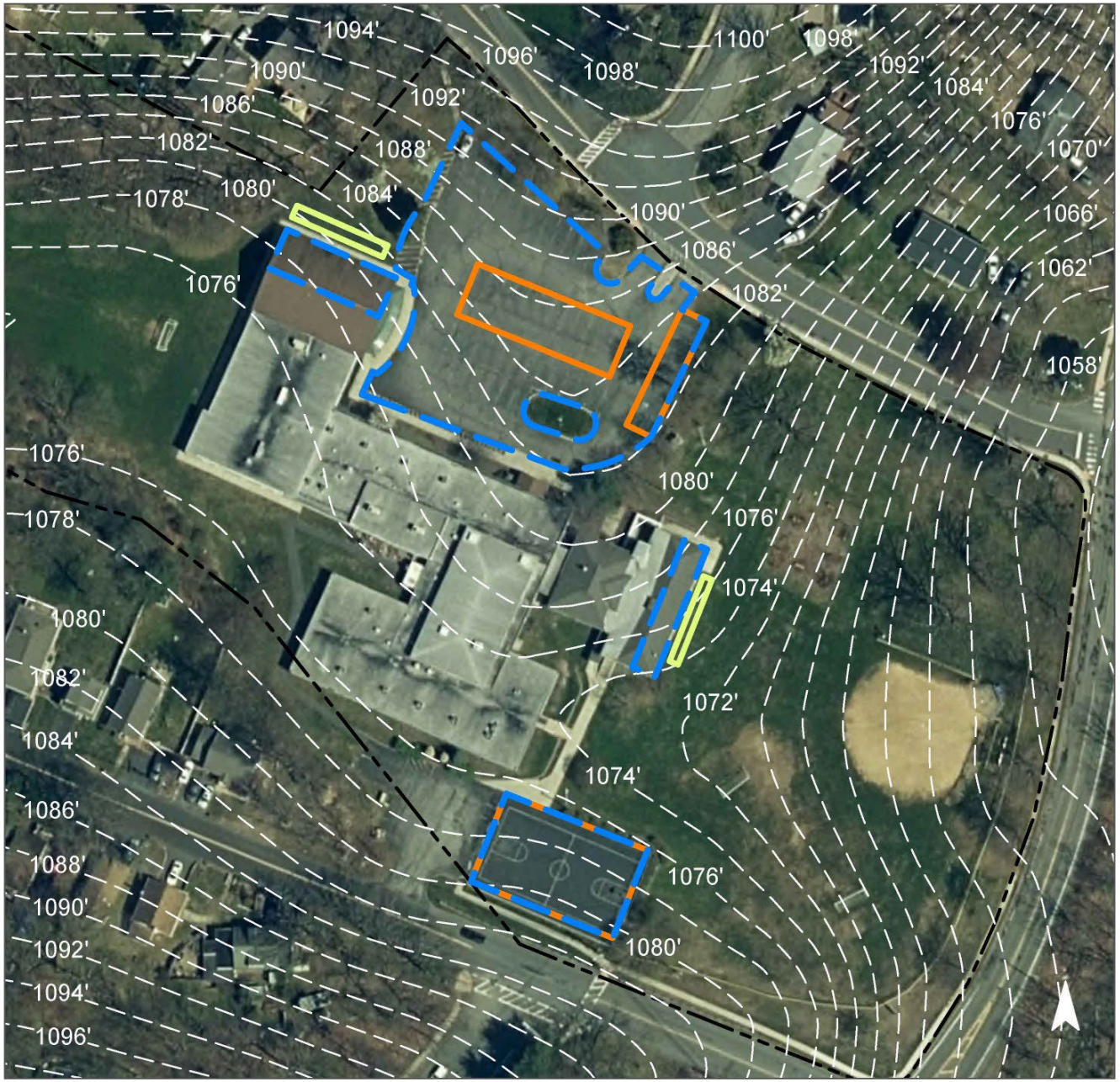
Block and Lot: Block 121, Lot 59

Rain gardens can be installed to the northwest and southeast corners of the building to capture, treat, and infiltrate stormwater runoff from the rooftop. The southeastern rain garden will require downspout disconnections. The northwestern rain garden will require downspout redirection beneath the sidewalk. Existing parking spaces to the north and northeast of the building can be converted into pervious pavement to capture and infiltrate the stormwater runoff from the asphalt. The southern basketball court can be converted into pervious pavement to capture and infiltrate stormwater runoff from the court. 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"
22	105,118	5.1	53.1	482.6	0.082	3.28

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	3,625	0.107	15	7,560	0.28	905	$9,050
Pervious pavement	33,635	0.996	146	70,150	2.64	11,600	$290,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Mount Arlington Public School

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

0 50' 100'

OUR LADY OF THE LAKE ROMAN CATHOLIC CHURCH

RAP ID: 7

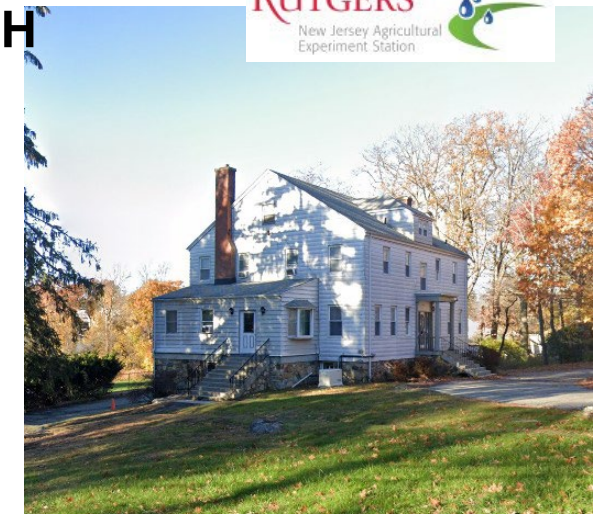
Subwatershed: Lake Hopatcong

HUC14 ID: 02040105150020

Site Area: 111,695 sq. ft.

Address: 8 Windemere Avenue &
1 Park Avenue
Mount Arlington, NJ 07856

Block and Lot: Block 26, Lots 3, 4, 5, 16

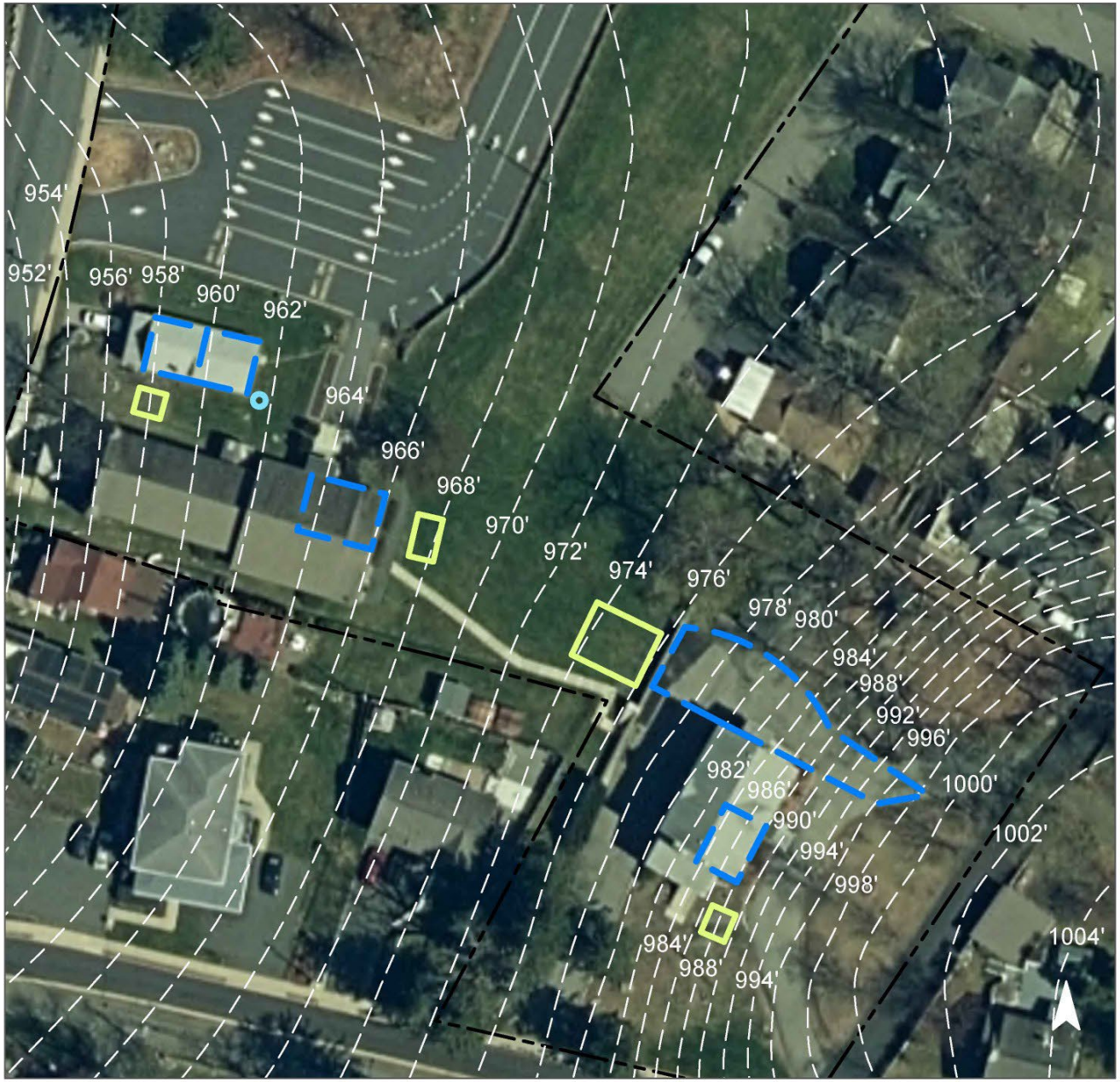


Rain gardens can be installed in multiple grass areas around the church and rectory property to capture, treat, and infiltrate stormwater runoff from the rooftops and parking lot. Downspout redirections, disconnections, and redirection beneath a walkway will be required. The rain garden to the northwest of the rectory will require a trench drain and curb cuts. A cistern can be installed to the southeast of the northern church building to divert and detain the stormwater runoff from the rooftop for later non-potable reuse such as watering the landscaping vegetation. The two nearest downspouts can be redirected to the cistern to increase the managed drainage area 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"
45	49,876	2.4	25.2	229.0	0.039	1.55

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	4,140	0.123	19	8,630	0.32	1,040	$10,400
Rainwater harvesting	440	0.013	2	400	0.01	400 (gal)	$1,200

GREEN INFRASTRUCTURE RECOMMENDATIONS



Our Lady of the Lake Roman Catholic Church

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

0 30' 60'

TIMES SQUARE CHURCH

RAP ID: 8

Subwatershed: Lake Hopatcong

HUC14 ID: 02040105150020

Site Area: 223,704 sq. ft.

Address: 450 Howard Boulevard
Mount Arlington, NJ 07856

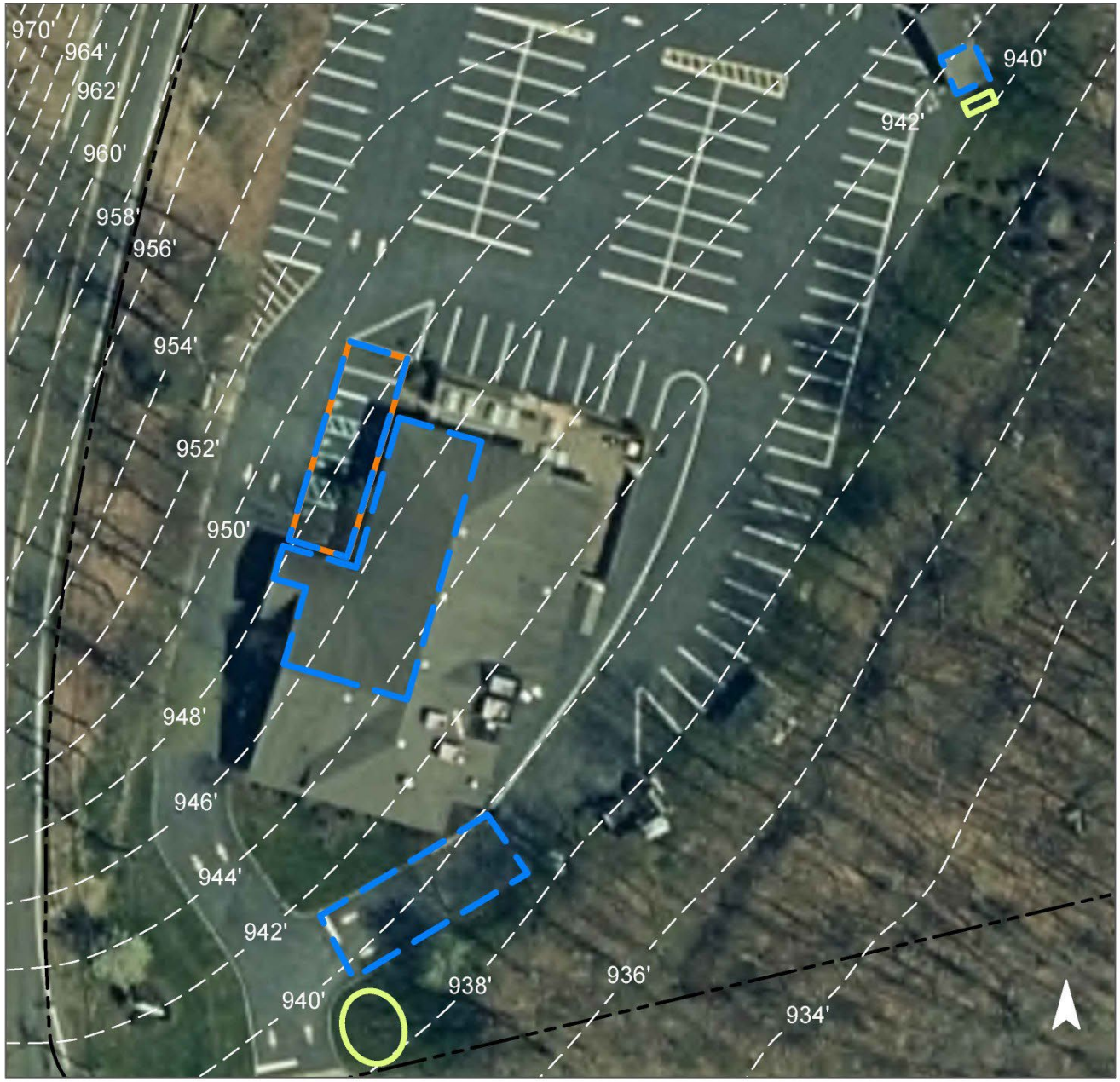
Block and Lot: Block 9, Lot 2.01

A rain garden can be installed to the east of the entry driveway to capture, treat, and infiltrate stormwater runoff from the asphalt. This will require a trench drain and a curb cut. Another rain garden can be installed to the south of the manger to capture, treat, and infiltrate stormwater runoff from the rooftop. The existing parking spaces to the northwest of the church building can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt and the rooftop. This will require downspout disconnections to the pervious 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 50"
29	65,184	3.1	32.9	299.3	0.051	2.03

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	1,675	0.050	8	3,490	0.13	420	$4,200
Pervious pavement	4,375	0.130	19	9,130	0.34	1,360	$34,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Times Square Church

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

0 25' 50'

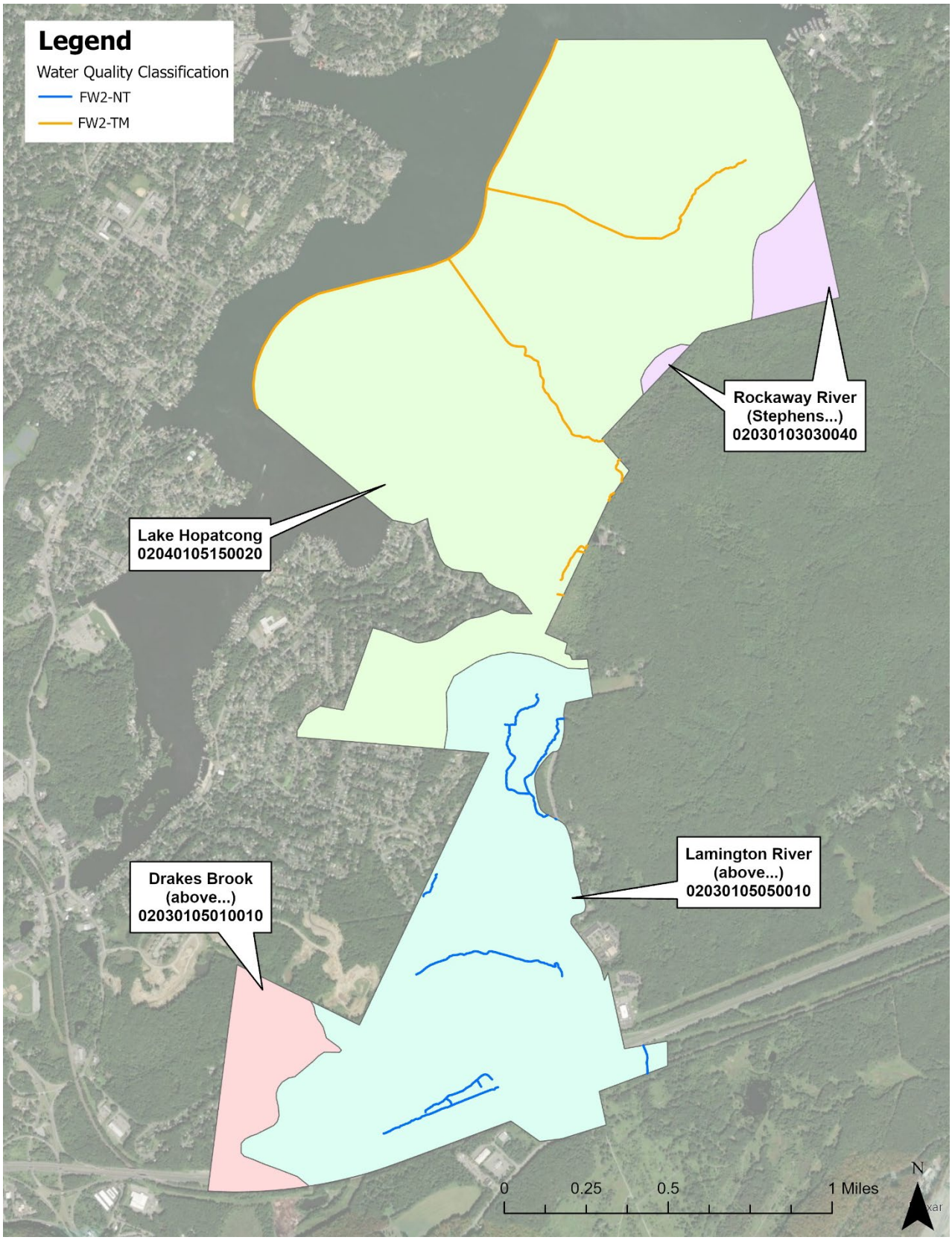


Figure 9. Water Quality Classification of Surface Waters in Mount Arlington Borough

Table 7. Water Quality Classification of Surface Waters in Mount Arlington Borough

Surface Water Quality Classification	Surface Water Quality Code	Miles	Percent of Municipal Streams
Freshwater 2, non-trout	FW2-NT	2.3	38.2%
Freshwater 2, trout maintenance	FW2-TM	3.7	61.8%