Califon Borough

Introduction

Located in Hunterdon County in New Jersey, Califon Borough covers about 0.98 square miles. With a population of 1,005 (2020 United States Census), Califon Borough consists of 53.4% of urban land uses by area. Of that urban land use, approximately 31.9% is comprised of low-density residential properties (NJDEP Open Data). In addition to residential development, urban land use also includes land used for commercial and recreational purposes. Natural lands (forests, wetlands, and water) make up approximately 44.4% of Califon Borough.

Califon Borough contains portions of three subwatersheds (Table 1). There are approximately 3.1 miles of rivers and streams within the municipality; these include Frog Hollow Brook and its tributaries, South Branch Raritan River and its tributaries, and an uncoded tributary. Califon Borough is within the New Jersey Department of Environmental Protection (NJDEP) Watershed Management Area (WMA) 8 (North and South Branch Raritan).

Table 1: Subwatersheds of Califon Borough

Subwatershed	HUC14
Raritan River South Branch (Califon Bridge to Long Valley)	02030105010060
Raritan River South Branch (Stone Mill gage to Califon)	02030105010070
Rockaway Creek (above McCrea Mills)	02030105050080

The purpose of this report is to provide a comprehensive understanding of key, defining features within the subwatersheds throughout Califon 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 Califon 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 Califon Borough in relation to the study area. Figure 2 shows the portions of the three HUC14s in Califon Borough and highlights the HUC14s that are contained within the study area. Figure 3 illustrates the land use in Califon Borough. A detailed land use analysis and nonpoint source loading analysis was completed for each HUC14 in Califon Borough and is presented in Table 2. Figure 4 shows the impervious cover in Califon Borough based upon NJDEP's 2015 impervious cover layer. An impervious cover analysis was completed for each HUC14 in Califon 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". The retention basins in Table 4 (identified as type "R") could benefit from the addition of vegetative shoreline buffers. Retention basins that already have a vegetative shoreline buffer are listed as type "RB". Only a detention basin was identified in Califon Borough within the study area.

The Q-Farms in Califon Borough have been identified (see Figure 6). Table 5 presents the data available for each Q-Farm parcel. Q-Farms are the parcels that have been qualified for farmland tax assessment. The Q-Farms in the study area of Califon Borough have been identified (see Figure 7 and Table 6). It is important to note that the land use on a Q-Farm is often not all agriculture. Figure 8 illustrates the land use on the Q-Farms, which is summarized in Table 7. There are 13.3 acres of agricultural land use in Califon Borough, of which, 10.4 acres lie within the study area for this Watershed Restoration and Protection Plan. There are 16 Q-Farms and a portion of one Q-Farm in the study area portion of Califon Borough, totaling 112.3 acres. Within the 16 Q-Farms and portion of one Q-Farm, there are approximately 5.5 acres of agricultural land use. Aerial photography (see Figure 9) was used to identify areas where riparian buffers may be able to be enhanced to further protect the waterways from agricultural impacts. For the Q-Farms in Califon Borough, no site visits were conducted.

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 (02030105010060, 02030105010070). Within these two HUC14s, there are 22.2 acres of buildings and 36.4 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 Califon Borough, approximately 1.4 acres of rooftop runoff would be managed with 0.28 acres of rain gardens. The plan also calls for the management of 10% of the roadways with bioswales. For the study area within Califon Borough, approximately 3.6 acres of roadway would be managed, or 1.0 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. The Property Class 15 parcels for Califon Borough are shown in Figure 10 and presented in Table 8. All tax-exempt parcels in Califon Borough are within the study area. Available information for each parcel in the study area is presented in Table 8. Class 15E parcels were excluded from the assessment. Six 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 11 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 three classifications that apply to the streams in Califon Borough. Figure 12 depicts the water quality classifications of surface waters throughout Califon Borough and Table 9 summarizes the total miles and percentage of each surface water quality classification in the municipality.

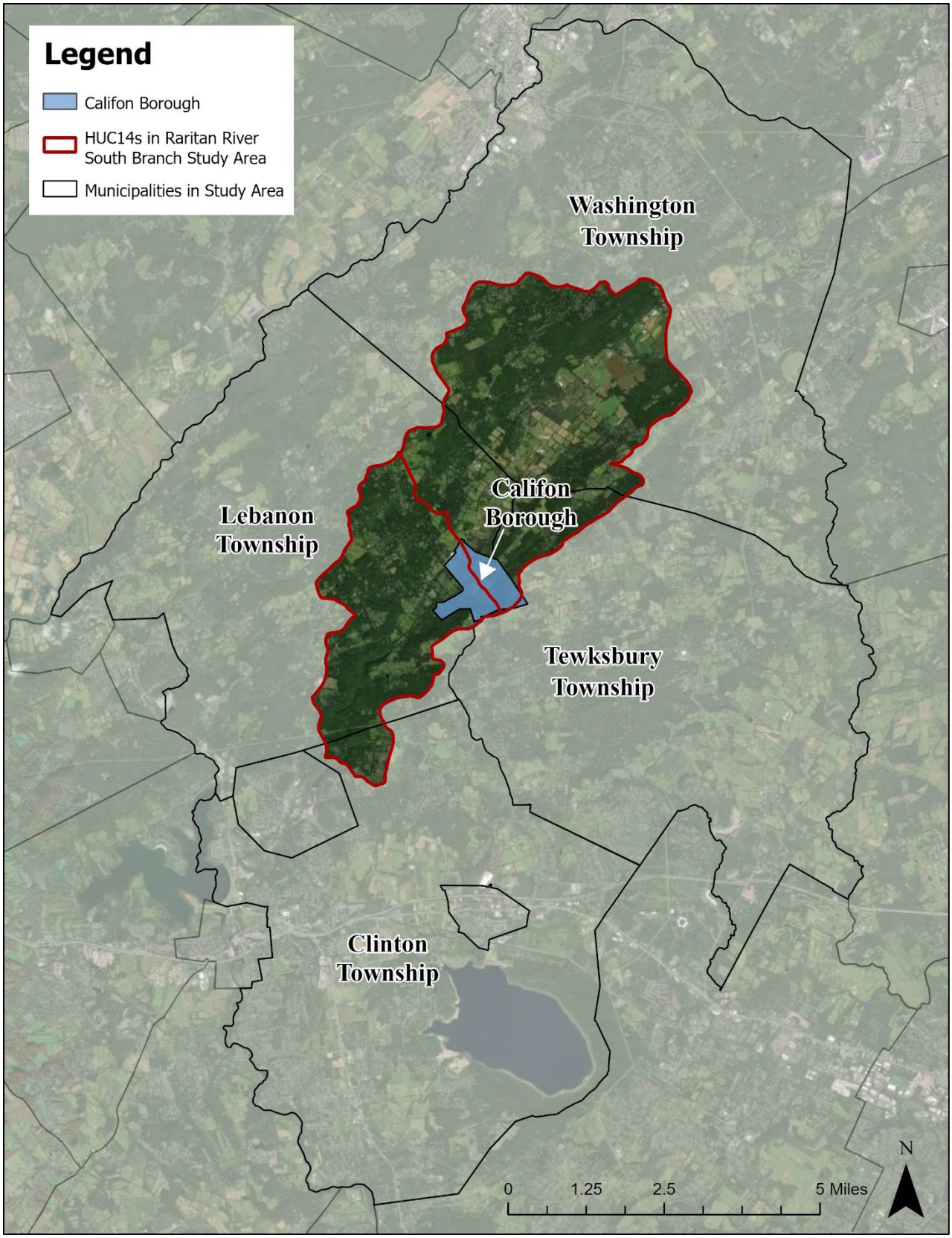


Figure 1: Municipalities in the Study Area

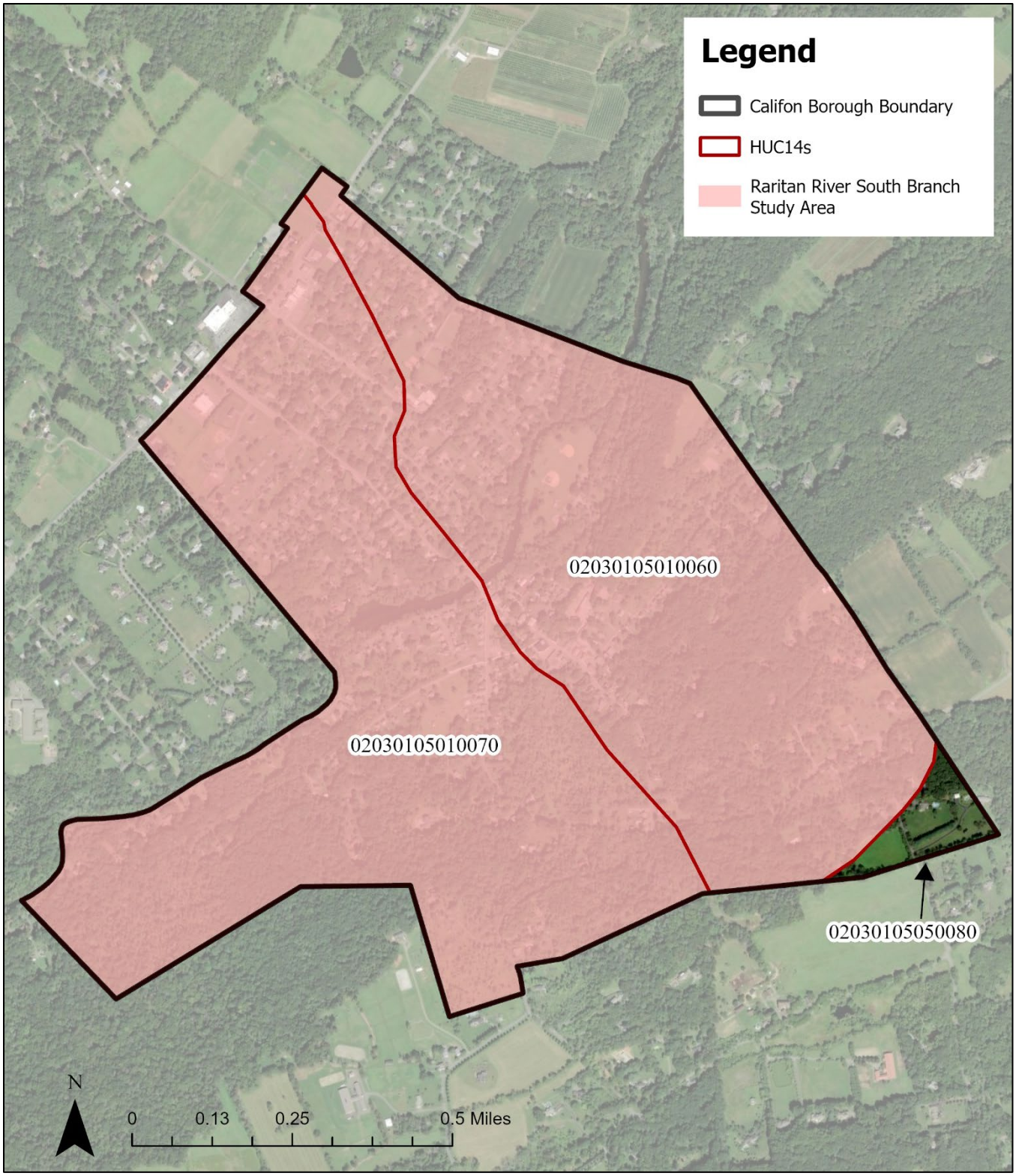


Figure 2: Portions of three HUC14s are in Califon Borough

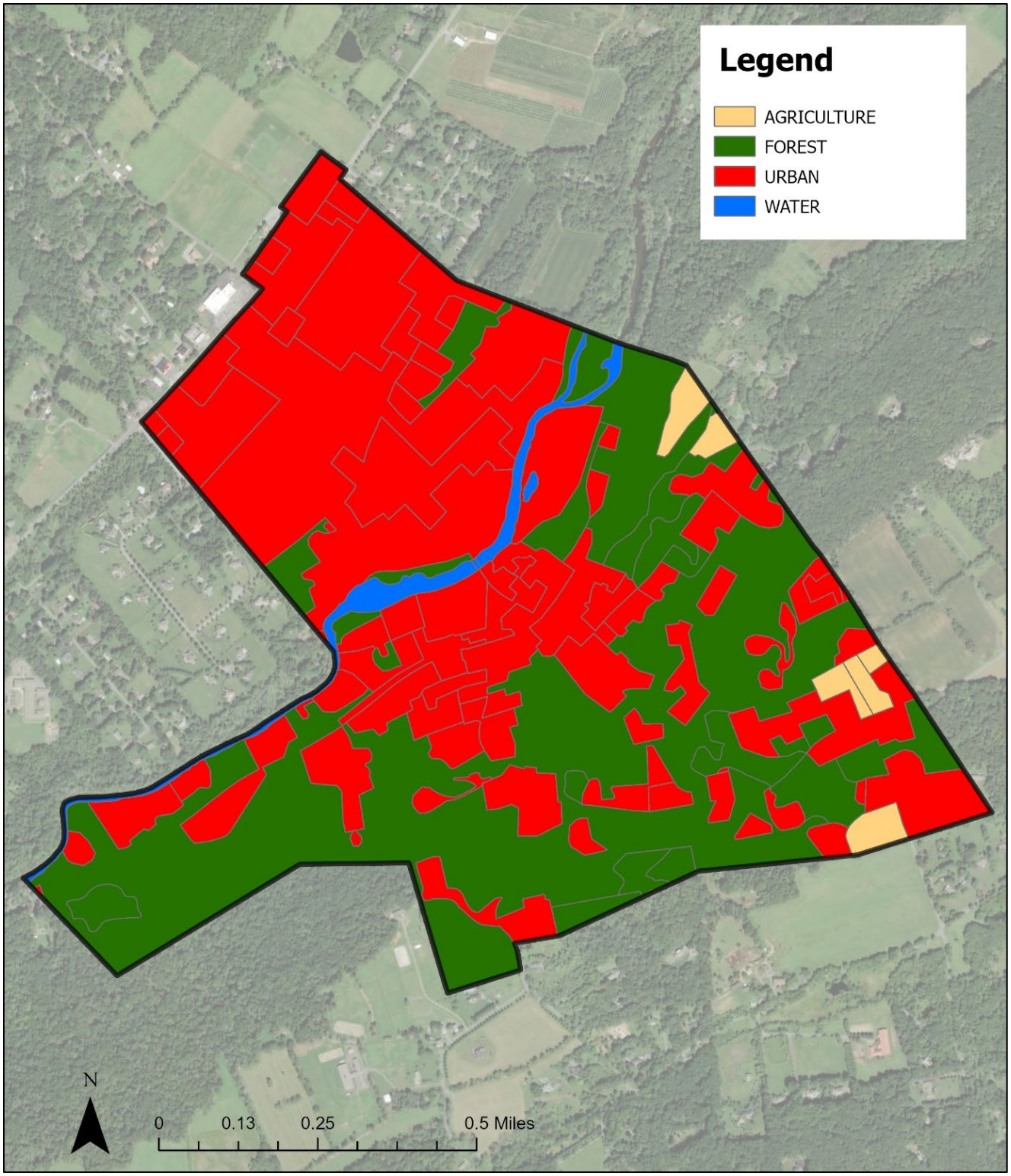


Figure 3: Land Use in Califon Borough

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

Land Use Type	Area (acres)	TP Load (lbs/yr)	TN Load (lbs/yr)	TSS Load (lbs/yr)
02030105010060				
Agriculture	10.3	13.4	103.3	3,097.7
Barren Land	0.0	0.0	0.0	0.0
Forest	120.1	12.0	360.4	4,805.7
Urban	144.0	201.6	2,160.0	20,159.6
Water	5.4	0.5	16.2	215.8
Wetlands	0.0	0.0	0.0	0.0
TOTAL =	**279.9**	**227.6**	**2,639.8**	**28,278.8**
02030105010070				
Agriculture	0.1	0.1	0.9	27.3
Barren Land	0.0	0.0	0.0	0.0
Forest	143.2	14.3	429.5	5,726.9
Urban	183.0	256.2	2,745.0	25,620.3
Water	7.9	0.8	23.6	315.0
Wetlands	0.0	0.0	0.0	0.0
TOTAL =	**334.1**	**271.4**	**3,199.1**	**31,689.5**
02030105050080				
Agriculture	2.9	3.8	29.0	870.3
Barren Land	0.0	0.0	0.0	0.0
Forest	1.8	0.2	5.5	73.3
Urban	7.9	11.0	118.3	1,103.8
Water	0.0	0.0	0.0	0.0
Wetlands	0.0	0.0	0.0	0.0
TOTAL =	**12.6**	**15.0**	**152.8**	**2,047.3**
All HUCs				
Agriculture	13.3	17.3	133.2	3,995.2
Barren Land	0.0	0.0	0.0	0.0
Forest	265.1	26.5	795.4	10,605.9
Urban	334.9	468.8	5,023.3	46,883.7
Water	13.3	1.3	39.8	530.8
Wetlands	0.0	0.0	0.0	0.0
TOTAL =	**626.6**	**514.0**	**5,991.7**	**62,015.6**

Impervious Cover Analysis

NJDEP's Open Data impervious surface GIS data layer depicts surfaces throughout Califon 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 Califon Borough. Based upon the NJDEP impervious surface data, Califon Borough has impervious cover totaling 17.0%. Table 3 shows impervious cover for each HUC14. The extent of the impervious cover in Califon 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, Califon Borough's impervious cover percentage would suggest that its waterways are primarily impacted and most likely contributing to not meeting the state's surface water quality standards.

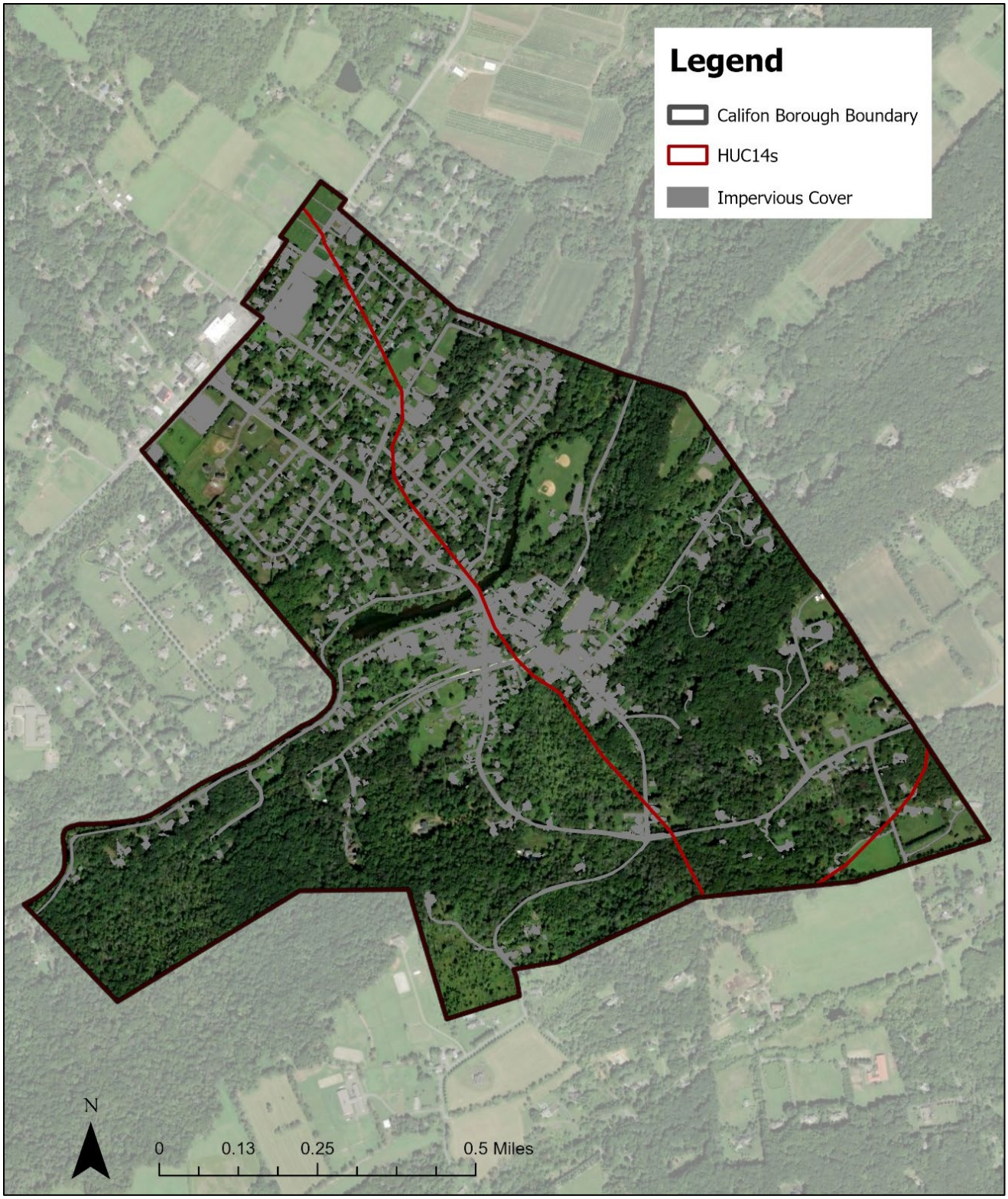


Figure 4: Impervious Cover in Califon Borough

Table 3: Impervious Cover Analysis by HUC14 for Califon Borough

Class	Area (acres)	HUC Impervious Cover (%)
02030105010060		
Building	10.94	
Other	23.02	
Road	14.42	
TOTAL =	**48.4**	**17.3%**
02030105010070		
Building	11.23	
Other	23.85	
Road	21.98	
TOTAL =	**57.1**	**17.1%**
02030105050080		
Building	0.14	
Other	0.75	
Road	0.24	
TOTAL =	**1.1**	**9.0%**
All HUCs		
Building	22.31	
Other	47.62	
Road	36.64	
TOTAL =	**106.6**	**17.0%**

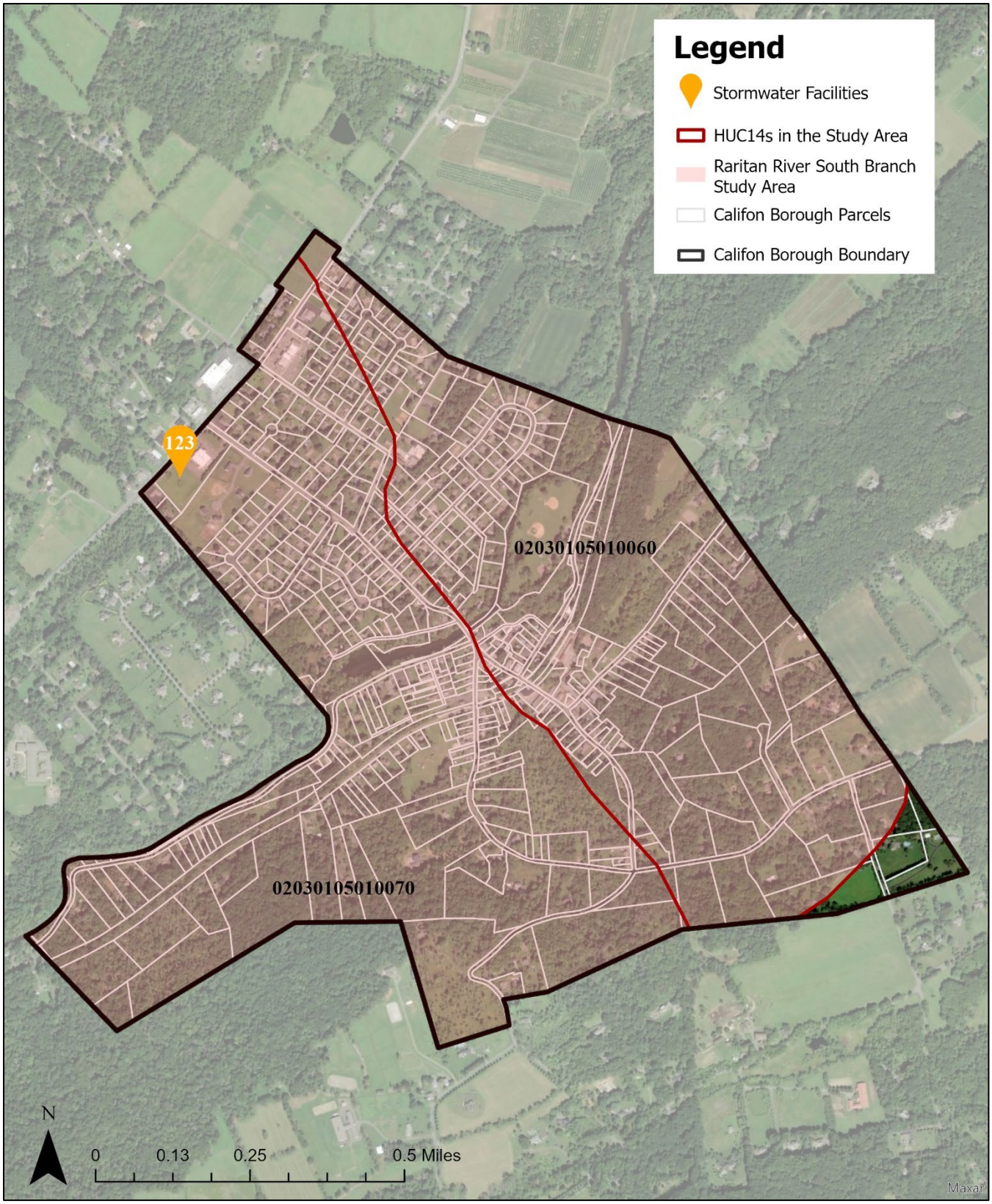


Figure 5: Stormwater Facilities in the Study Area of Califon Borough

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

Raritan River South Branch Study Area		
ID	**Address**	**Type**
123	428 County Rd 513	D

"D" = Detention

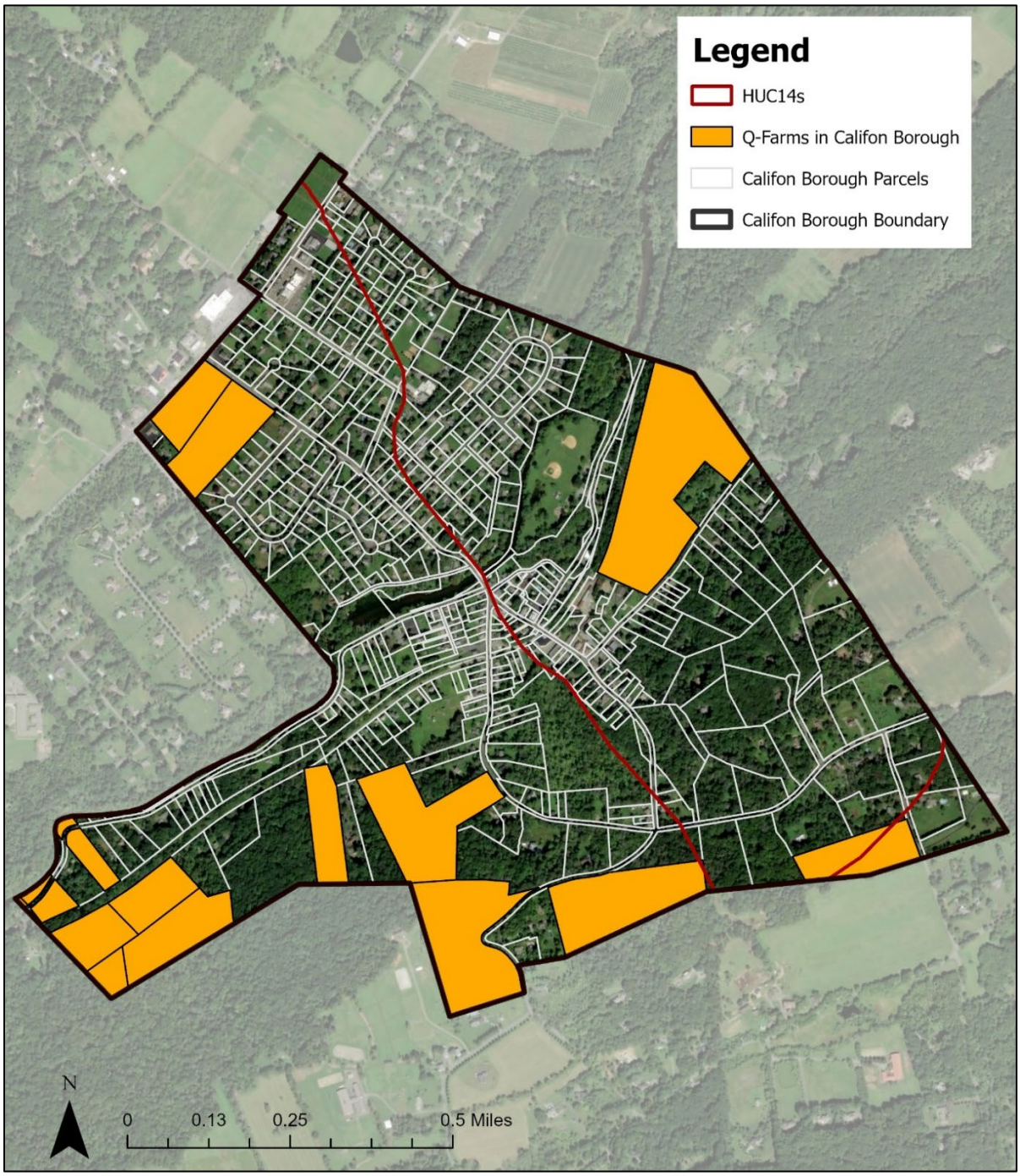


Figure 6: Q-Farm Parcels in Califon Borough

Table 5: Q-Farm Parcels in Califon Borough

Block	Lot	Q-Code	Prop Class	Location
2	3	QFARM		County Route 513
2	3.01	QFARM		County Route 512
14	1	QFARM	3B	River Road
14	1.01	QFARM	3B	River Strip
14	2.04	QFARM	3B	Access To River
15	3	QFARM	3B	Off River Road
15	4.04	QFARM	3B	91 River Road
17	1	QFARM	3B	101 River Road
17	2	QFARM	3B	95 River Road
17	6	QFARM	3B	59 Railroad Avenue
17	8	QFARM	3B	99 River Road
17	9	QFARM	3B	97 River Road
18	25	QFARM	3B	61 Academy Street
24	5	QFARM	3B	Philhower Avenue
25	1	QFARM	3B	1403 Califon-Cokesbury Rd
27	3	QFARM	3B	202 Cokesbury Road
28	6	QFARM	3B	106 Guinea Hollow Road

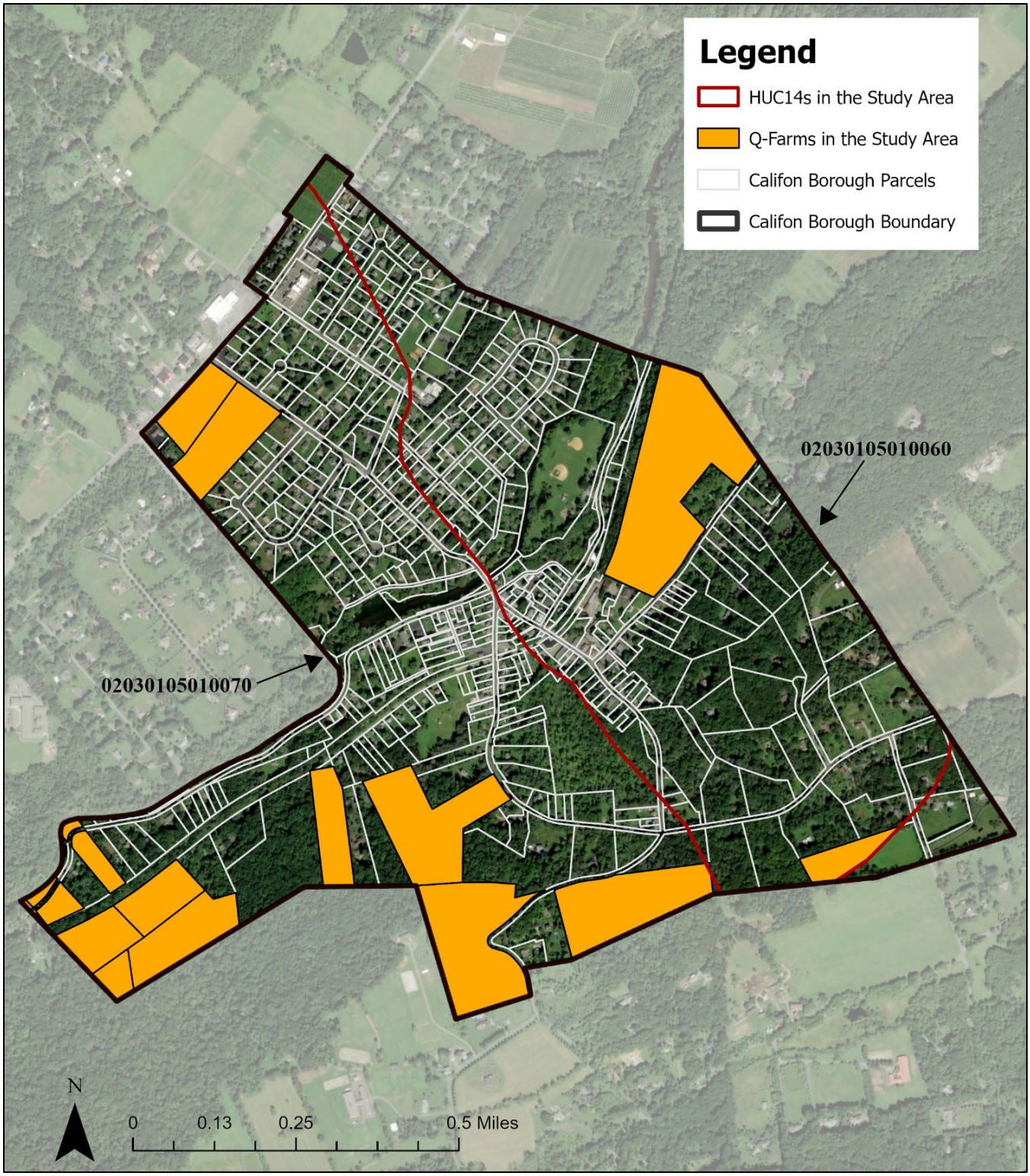


Figure 7: Q-Farm Parcels in the Study Area of Califon Borough

Table 6: Q-Farm Parcels in the Study Area of Califon Borough

Block	Lot	Q-Code	Prop Class	Location
2	3	QFARM		County Route 513
2	3.01	QFARM		County Route 512
14	1	QFARM	3B	River Road
14	1.01	QFARM	3B	River Strip
14	2.04	QFARM	3B	Access To River
15	3	QFARM	3B	Off River Road
15	4.04	QFARM	3B	91 River Road
17	1	QFARM	3B	101 River Road
17	2	QFARM	3B	95 River Road
17	6	QFARM	3B	59 Railroad Avenue
17	8	QFARM	3B	99 River Road
17	9	QFARM	3B	97 River Road
18	25	QFARM	3B	61 Academy Street
24	5	QFARM	3B	Philhower Avenue
25	1	QFARM	3B	1403 Califon-Cokesbury Rd
27	3	QFARM	3B	202 Cokesbury Road
*28	6	QFARM	3B	106 Guinea Hollow Road

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

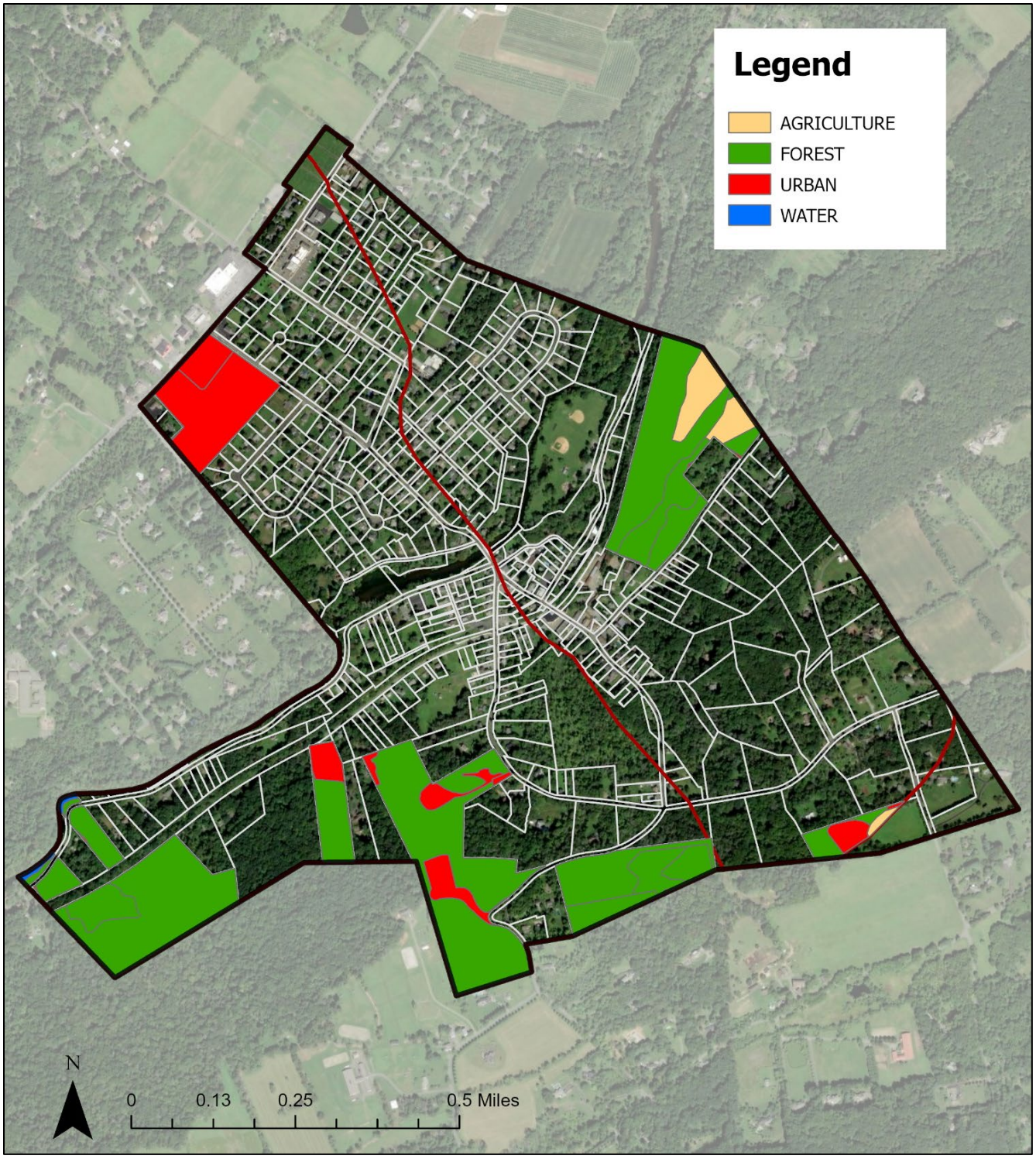


Figure 8: Land Use on Q-Farm Parcels in the Study Area of Califon Borough

Table 7: Land Use on Q-Farms in the Study Area of Califon Borough

Land Use	Area (acres)
Agriculture	5.5
Barren Land	0.0
Forest	85.7
Urban	20.5
Water	0.5
Wetlands	0.0
Total:	**112.3**

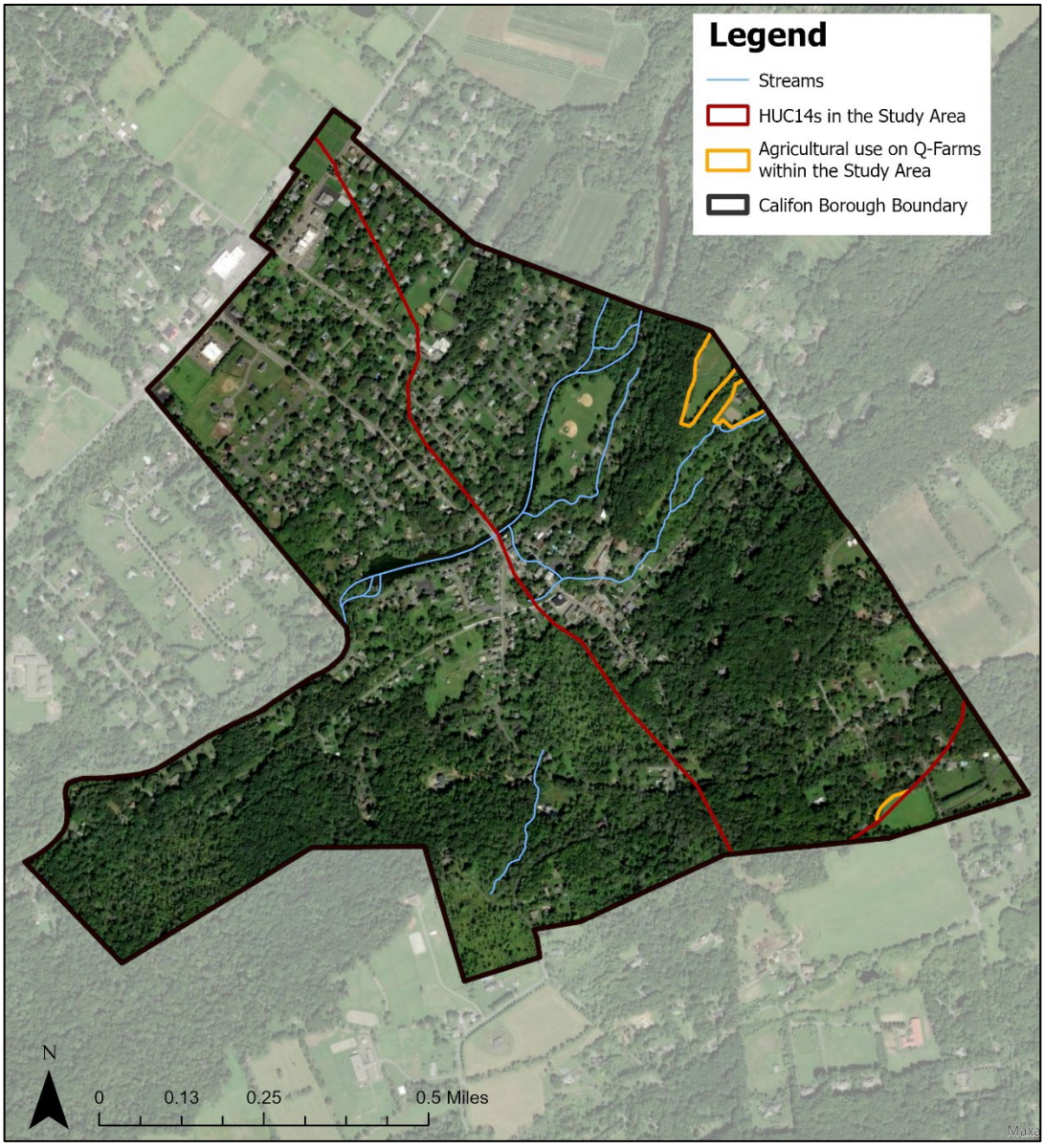


Figure 9: Aerial View of Agricultural Use on Q-Farm Parcels within the Study Area of Califon Borough

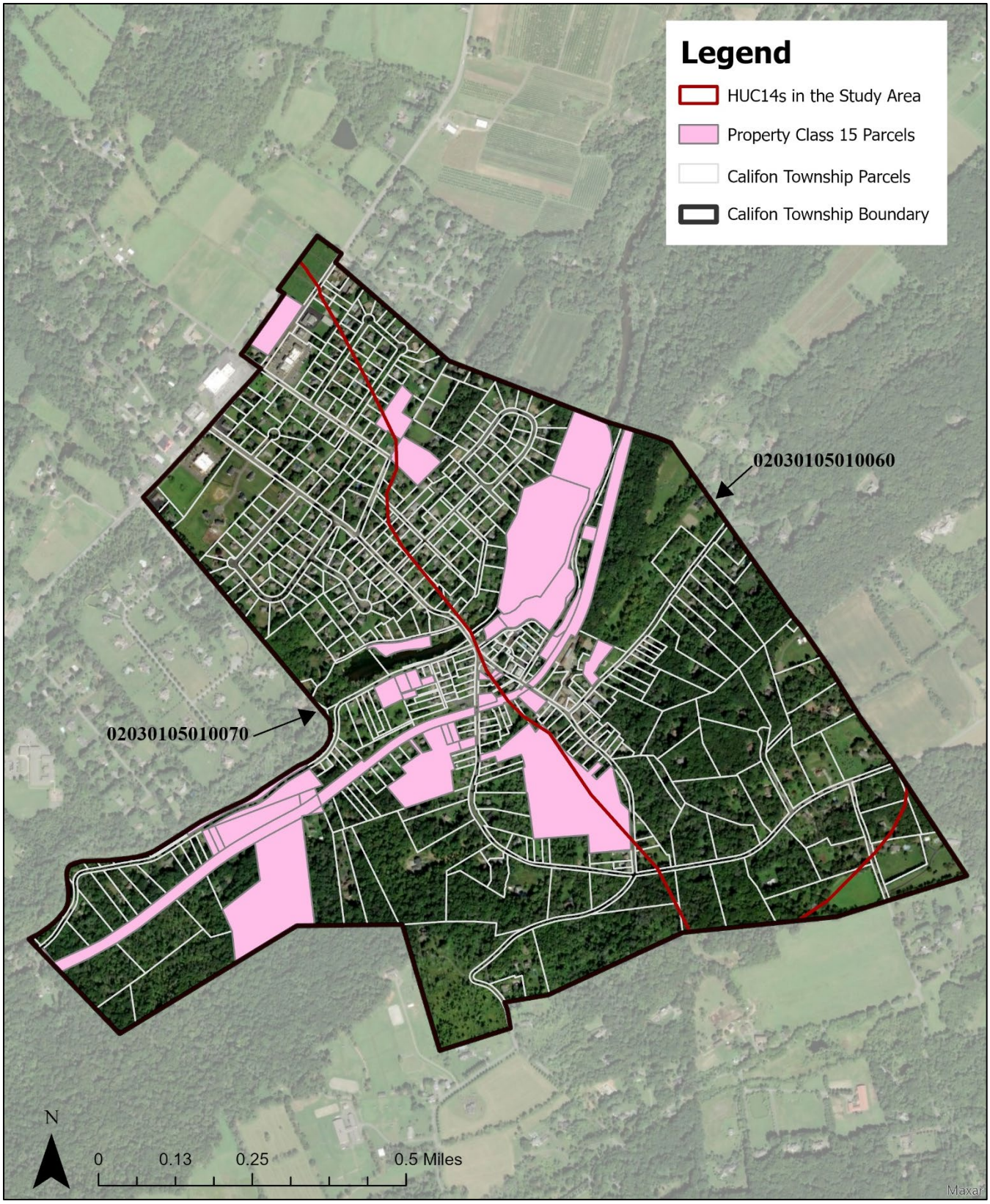


Figure 10: Property Class 15 Parcels in Califon Borough

Table 8: Property Class 15 Parcels in Califon Borough[1]

Block	Lot	Prop Class	Location	Facility Type
4.02	10	15A	34 School Street Ext.	Park (Ball Field)
***8**	**3**	**15A**	**6 School Street**	**School**
5	25	15C	First Street-River Strip	Park
14	4	15C	River Road	Water Quality
15	1	15C	Along High Bridge Branch	Park
15	8	15C	67 River Road	Watershed
15	9	15C	65 River Road	Watershed
15	10	15C	51 River Road	Watershed
15	11	15C	River Road	Park
15	12	15C	41 River Road	Watershed
16	1	15C	C R Of Nj Rr Bed	Park
16.01	1	15C	C R Of Nj Rr Bed	Park
16.02	1	15C	C R Of Nj Rr Bed	Park
16.03	1	15C	Cr Of Nj Rr-Track & Bed	Park
17	5	15C	57 River Road	Watershed
17	7	15C	Railroad Road	Park
***18**	**13.01**	**15C**	**39 Academy Street**	**Municipal Building**
19	4	15C	2 Academy Street	Parking Area
19	6	15C	51 Main Street	Parking Area
19	7	15C	49 Main Street	Parking Area
20	4.01	15C	Academy Street	Conservation
21	3	15C	103 Mill Street	Park
***21**	**4**	**15C**	**Row From Bank Street**	**Park**
21	6	15C	130 Bank Street	Park
23	5.01	15C	113 Bank Street	Park
***1**	**2**	**15D**	**443-445 County Road 513**	**Church**
***6**	**11**	**15D**	**15 River Road**	**Church**
6	12	15D	13 River Road	Church Parking
6	13	15D	11 River Road	Vacant Land
6	16	15D	2 Center Street	Parsonage
6	18	15D	4 Center Street	Church
18	13	15F	1e Railroad Avenue	Garage-Hall
18	14	15F	11 Railroad Avenue	Vacant Land
18	15	15F	9 Railroad Avenue	Vacant
19	1	15F	8 Academy Street	Vacant Land
20	6	15F	41 Main Street	Firehouse
21	2	15F	101 Mill Street	Disabled Veteran
23	3	15F	103 Bank Street	Widow - Disabled Vet
***23**	**4**	**15F**	**107 Bank Street**	**Rescue Squad**
24	8	15F	114 Philhower Avenue	Widow - Disabled Vet

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

[1]All tax-exempt parcels in Califon Borough are within the study area

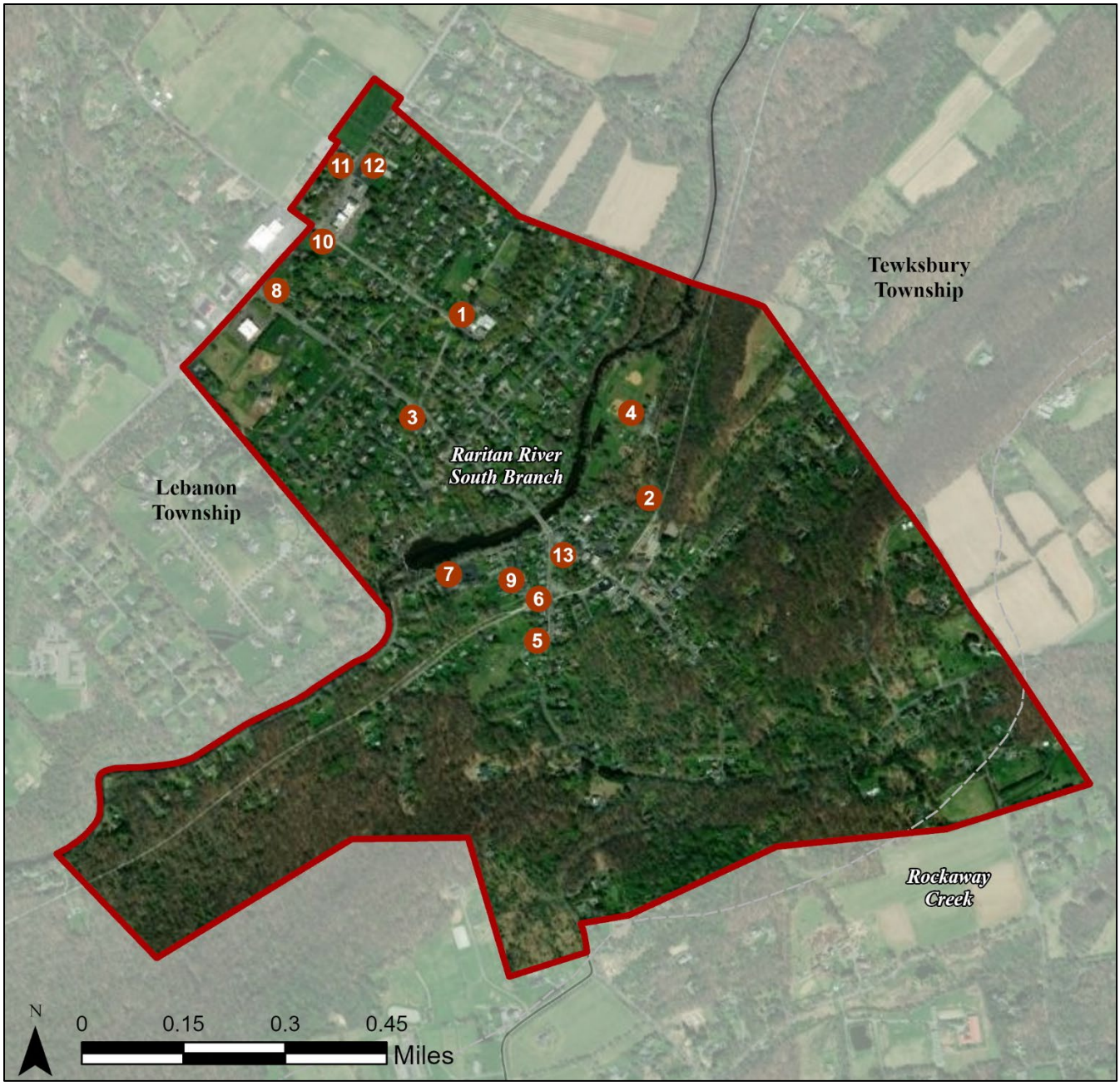


Figure 11: Sites with Green Infrastructure Opportunities in Califon Borough

CALIFON BOROUGH ELEMENTARY SCHOOL

RAP ID: 1

Subwatershed: Raritan River South Branch

Site Area: 96,268 sq. ft.

Address: 6 School Street
Califon, NJ 07830

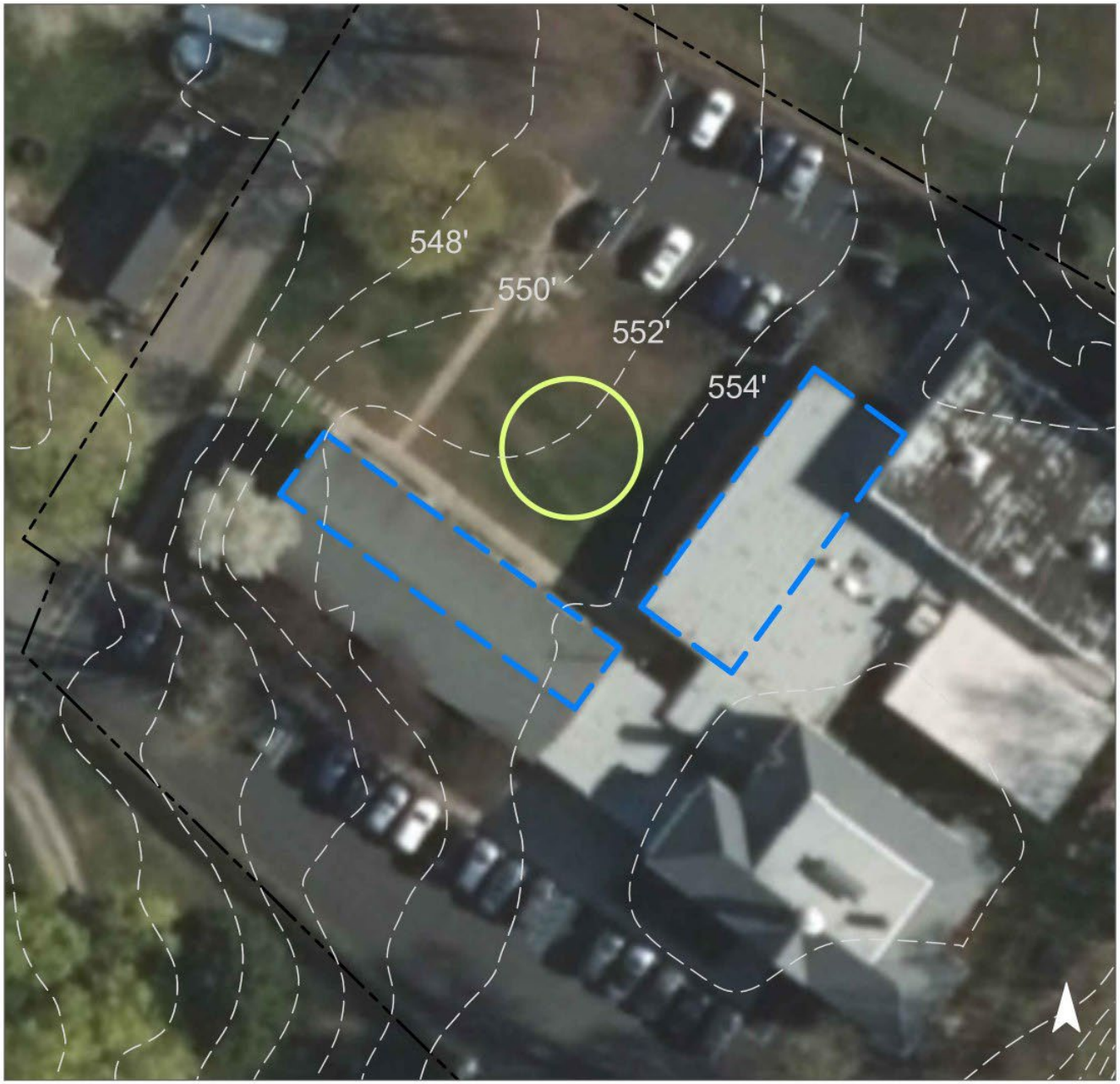
Block and Lot: Block 8, Lot 3

A rain garden centralized in the courtyard could be installed to collect rooftop stormwater. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
52	49,605	2.4	25.1	227.8	0.039	1.36

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.108	18	8,198	0.31	1,040	$5,200

GREEN INFRASTRUCTURE RECOMMENDATIONS



Califon Borough Elementary School

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

0 20' 40'

CALIFON FIRST AID SQUAD

RAP ID: 2

Subwatershed: Raritan River South Branch

Site Area: 27,012 sq. ft.

Address: 107 Bank Street
Califon, NJ 07830

Block and Lot: Block 23, Lot 4

A rain garden can be installed next to the entrance of the parking lot to capture stormwater from the sloped lot. A cistern can be installed to harvest rainwater from the rooftop. Collected rainwater can be used for washing first aid squad vehicles or be used to water landscaping. 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"
54	14,648	0.7	7.4	67.3	0.011	0.40

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.045	8	3,396	0.13	430	$2,150
Rainwater harvesting	0.032	5	1,000	0.09	1,000 (gal)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Califon First Aid Squad

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

0 20' 40'

CALIFON GENERAL STORE

RAP ID: 3

Subwatershed: Raritan River South Branch

Site Area: 12,272 sq. ft.

Address: 75 Main Street
Califon, NJ 07830

Block and Lot: Block 5, Lot 3

Porous pavement can be installed in the rear parking spaces to aid in infiltration of stormwater. A downspout planter box can be constructed along the building to allow roof runoff to be reused. 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"
38	4,664	0.2	2.4	21.4	0.004	0.13

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
Pervious pavement	0.117	20	8,841	0.33	800	$20,000
Planter box	N/A	2	N/A	N/A	1 (box)	$1,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Califon General Store

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

0 20' 40'

CALIFON ISLAND PARK

RAP ID: 4

Subwatershed: Raritan River South Branch

Site Area: 537,044 sq. ft.

Address: 111 Bank Street
Califon, NJ 07830

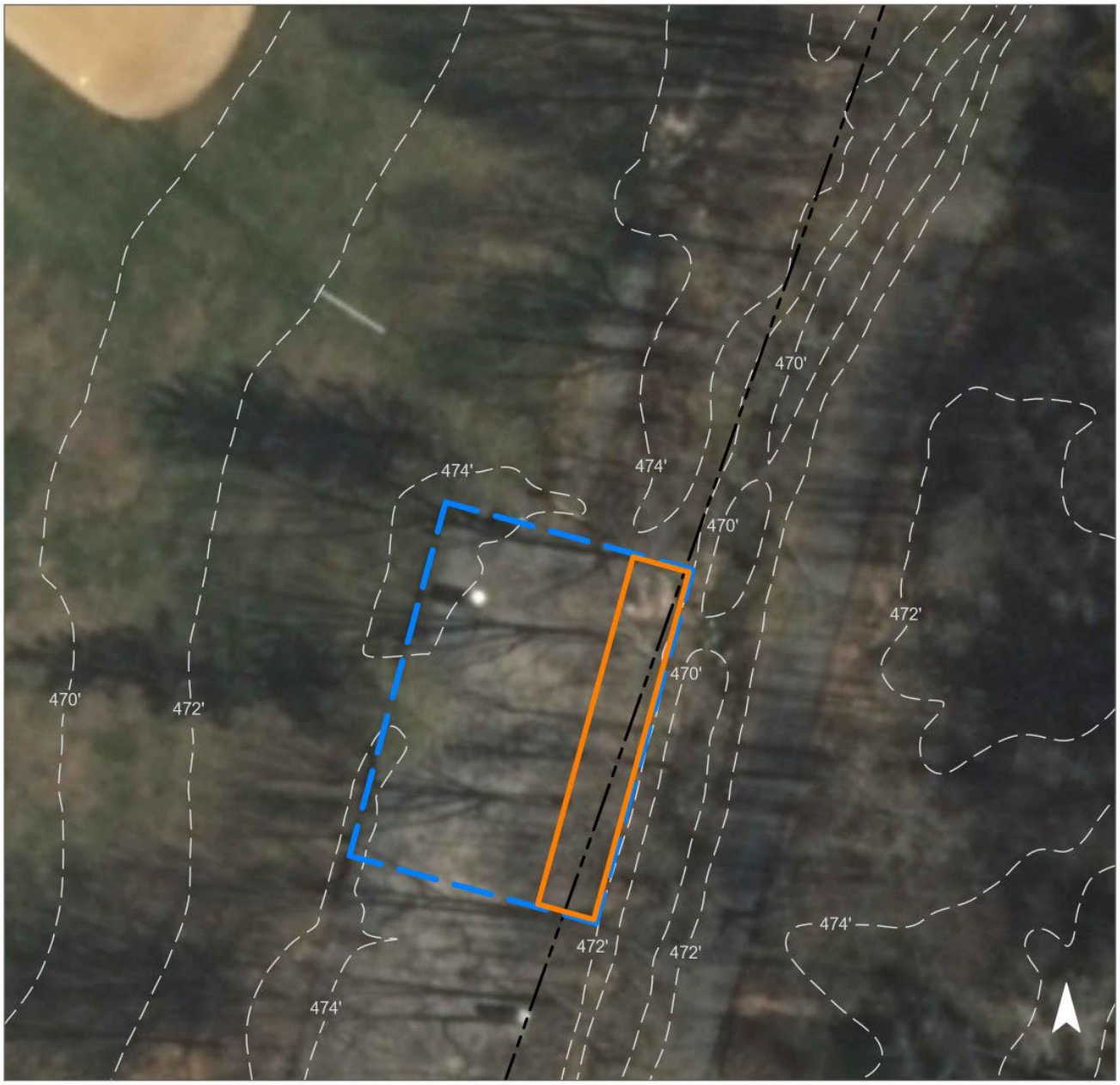
Block and Lot: Block 21, Lot 4

Porous pavement can be installed in the rear parking spaces to aid in infiltration of stormwater. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
6	31,444	1.5	15.9	144.4	0.025	0.86

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
Pervious pavement	0.262	44	19,859	0.87	2,400	$60,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Califon Island Park

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

0 25' 50'

CALIFON MUNICIPAL BUILDING

RAP ID: 5

Subwatershed: Raritan River South Branch

Site Area: 11,422 sq. ft.

Address: 39 Academy Street
Califon, NJ 07830

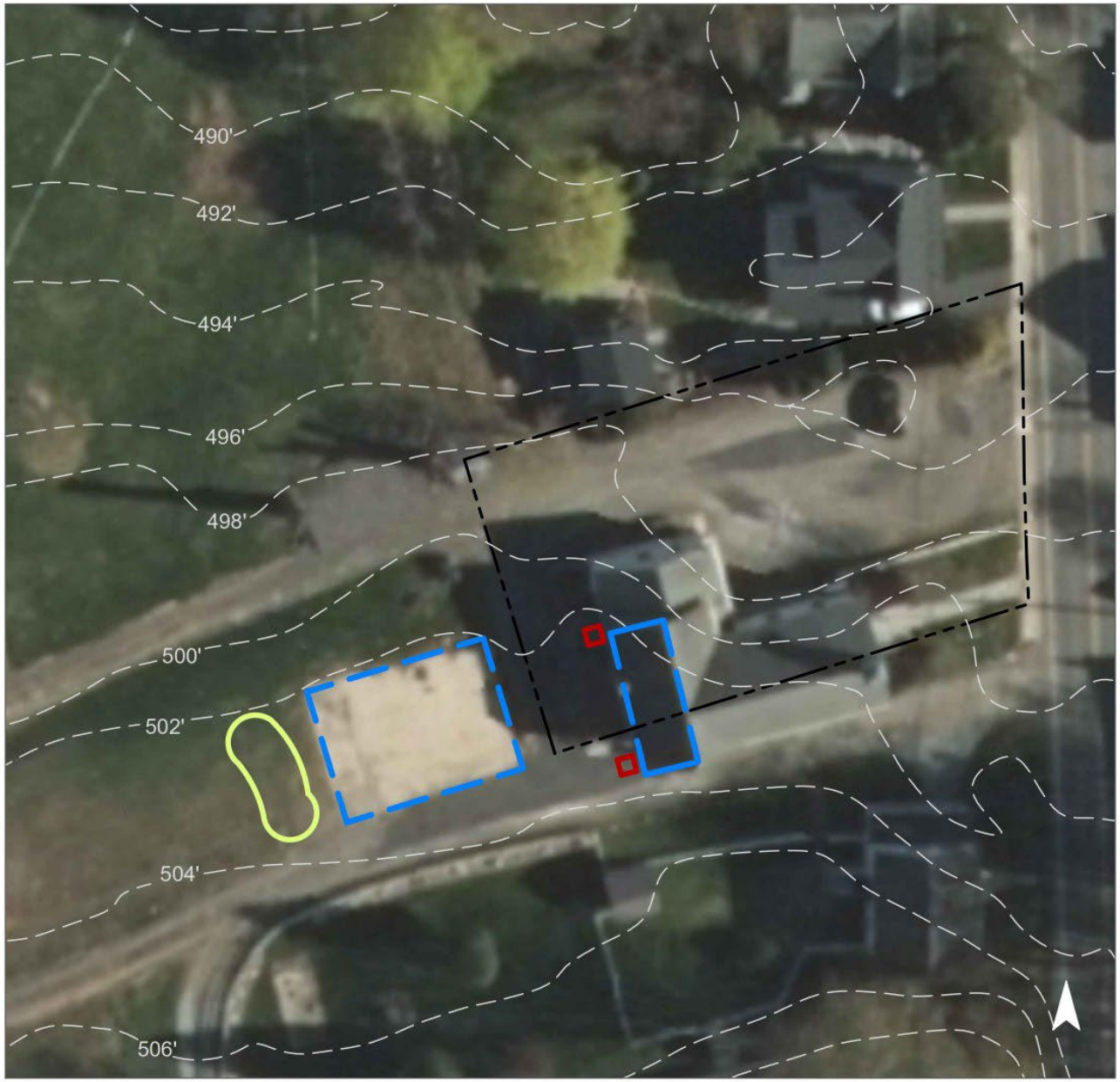
Block and Lot: Block 18, Lot 13.01

A rain garden can be installed to infiltrate stormwater draining from the parking lot. Downspout planter boxes can be constructed along the building to allow roof runoff to be reused. 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"
42	4,817	0.2	2.4	22.1	0.004	0.13

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	0.045	8	3,418	0.13	440	$2,200
Planter boxes	N/A	2	N/A	N/A	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Califon Municipal Building

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

0 20' 40'

CALIFON TRAIN STATION

RAP ID: 6

Subwatershed: Raritan River South Branch

Site Area: 41,501 sq. ft.

Address: 15 Center Street
Califon, NJ 07830

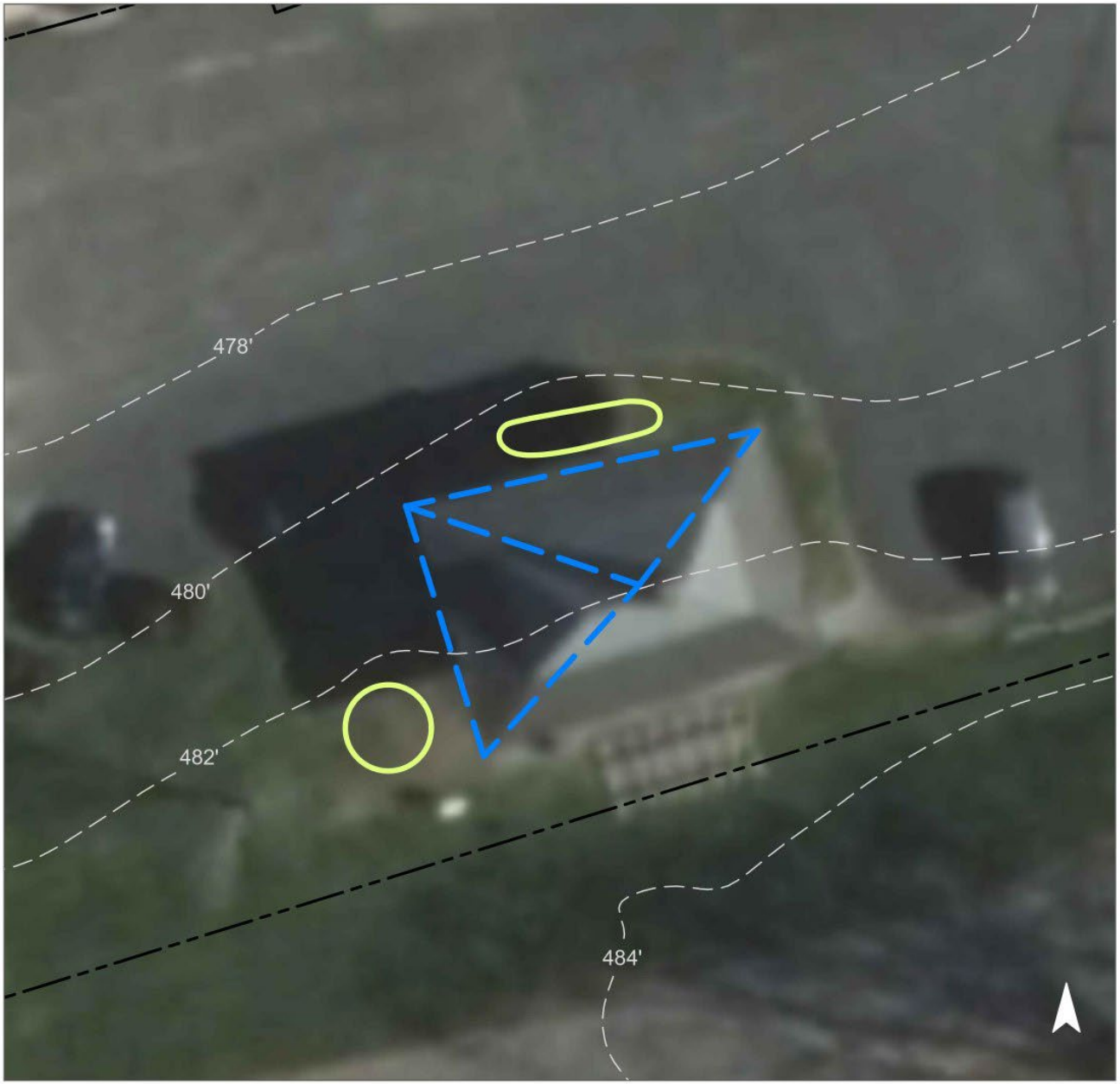
Block and Lot: Block 6, Lot 41

Rain gardens can be installed north of the building and in the turfgrass area east of the building to infiltrate stormwater draining from the parking lot. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
47	19,639	0.9	9.9	90.2	0.015	0.54

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	0.022	4	1,661	0.07	195	$975

GREEN INFRASTRUCTURE RECOMMENDATIONS



Califon Train Station

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

0 10' 20'

CALIFON UNITED METHODIST CHURCH

RAP ID: 7

Subwatershed: Raritan River South Branch

Site Area: 39,832 sq. ft.

Address: 15 Raritan River Road
Califon, NJ 07830

Block and Lot: Block 6, Lot 11

Two rain gardens can be installed to capture, treat, and infiltrate stormwater runoff from the roof. Downspout planter boxes can be constructed along the building to allow roof runoff to be reused. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
65	25,759	1.2	13.0	118.3	0.020	0.71

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	0.067	11	5,109	0.19	645	$3,225
Planter boxes	N/A	2	N/A	N/A	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Califon United Methodist Church

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

0 20' 40'

CALIFON WINE AND SPIRITS

RAP ID: 8

Subwatershed: Raritan River South Branch

Site Area: 23,453 sq. ft.

Address: 430 County Road 513
Califon, NJ 07830

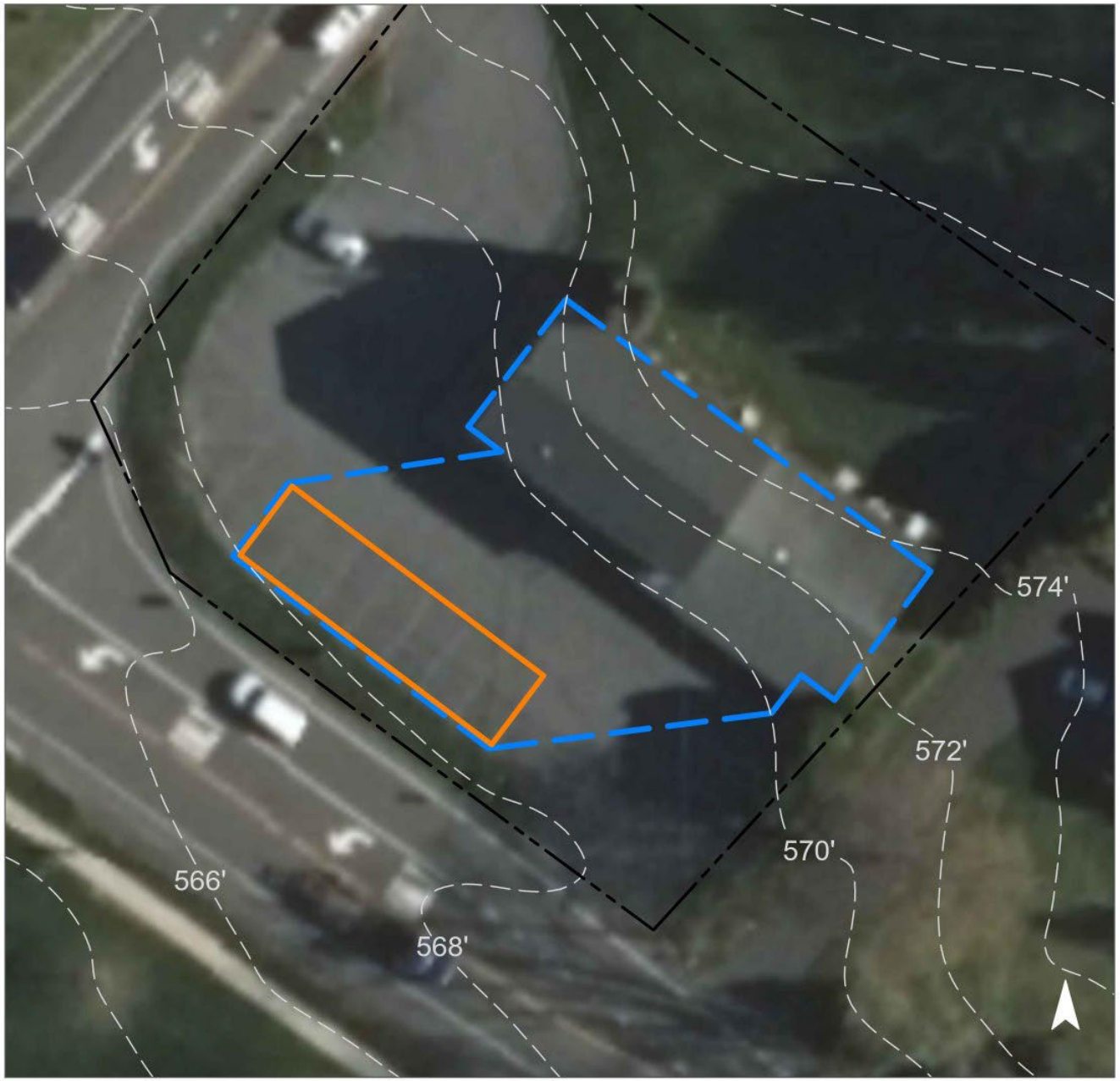
Block and Lot: Block 3, Lot 1

Areas of the parking lot can be retrofitted with porous pavement 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"
65	15,317	0.7	7.7	70.3	0.012	0.42

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
Pervious pavement	0.172	29	13,030	0.49	1,135	$28,375

GREEN INFRASTRUCTURE RECOMMENDATIONS



Califon Wine and Spirits

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

0 15' 30'

COUGHLIN FUNERAL HOME

RAP ID: 9

Subwatershed: Raritan River South Branch

Site Area: 7,381 sq. ft.

Address: 15 Academy Street
Califon, NJ 07830

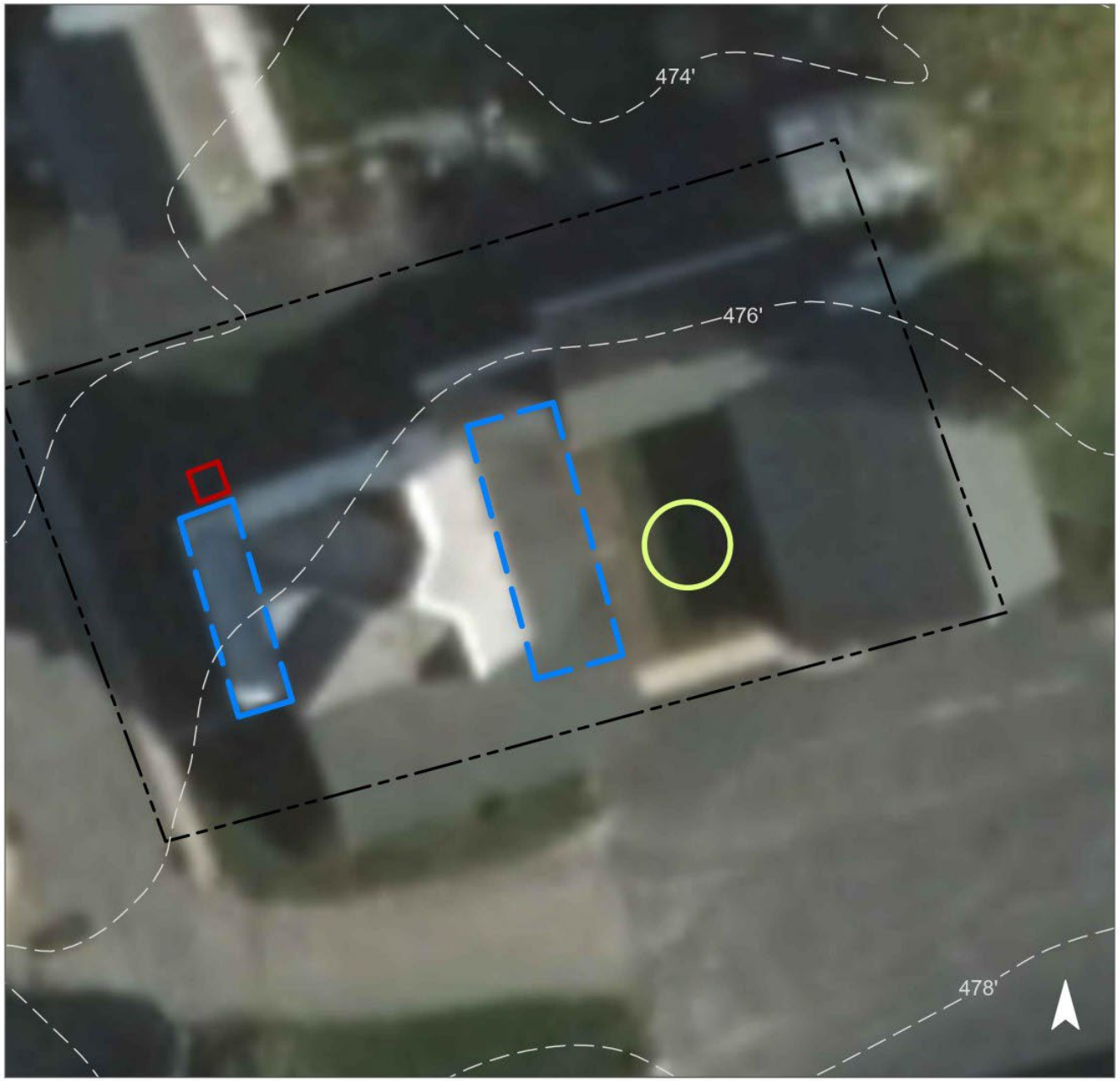
Block and Lot: Block 6, Lot 27

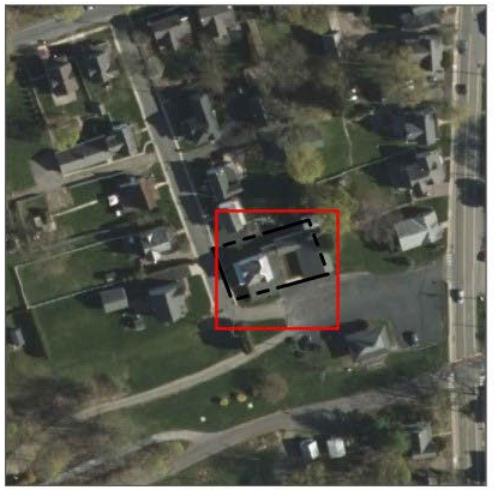
A central rain garden can be installed to capture stormwater runoff from the inward sloping rooftops. A downspout planter box can be constructed along the building to allow roof runoff to be reused. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
55	4,062	0.2	2.1	18.7	0.003	0.11

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	0.010	2	793	0.03	100	$500
Planter box	N/A	1	N/A	N/A	1 (box)	$1,000

GREEN INFRASTRUCTURE RECOMMENDATIONS





Coughlin Funeral Home

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

0 10' 20'

JAMES M MURRAY CPA

RAP ID: 10

Subwatershed: Raritan River South Branch

Site Area: 44,433 sq. ft.

Address: 37 School Street
Califon, NJ 07830

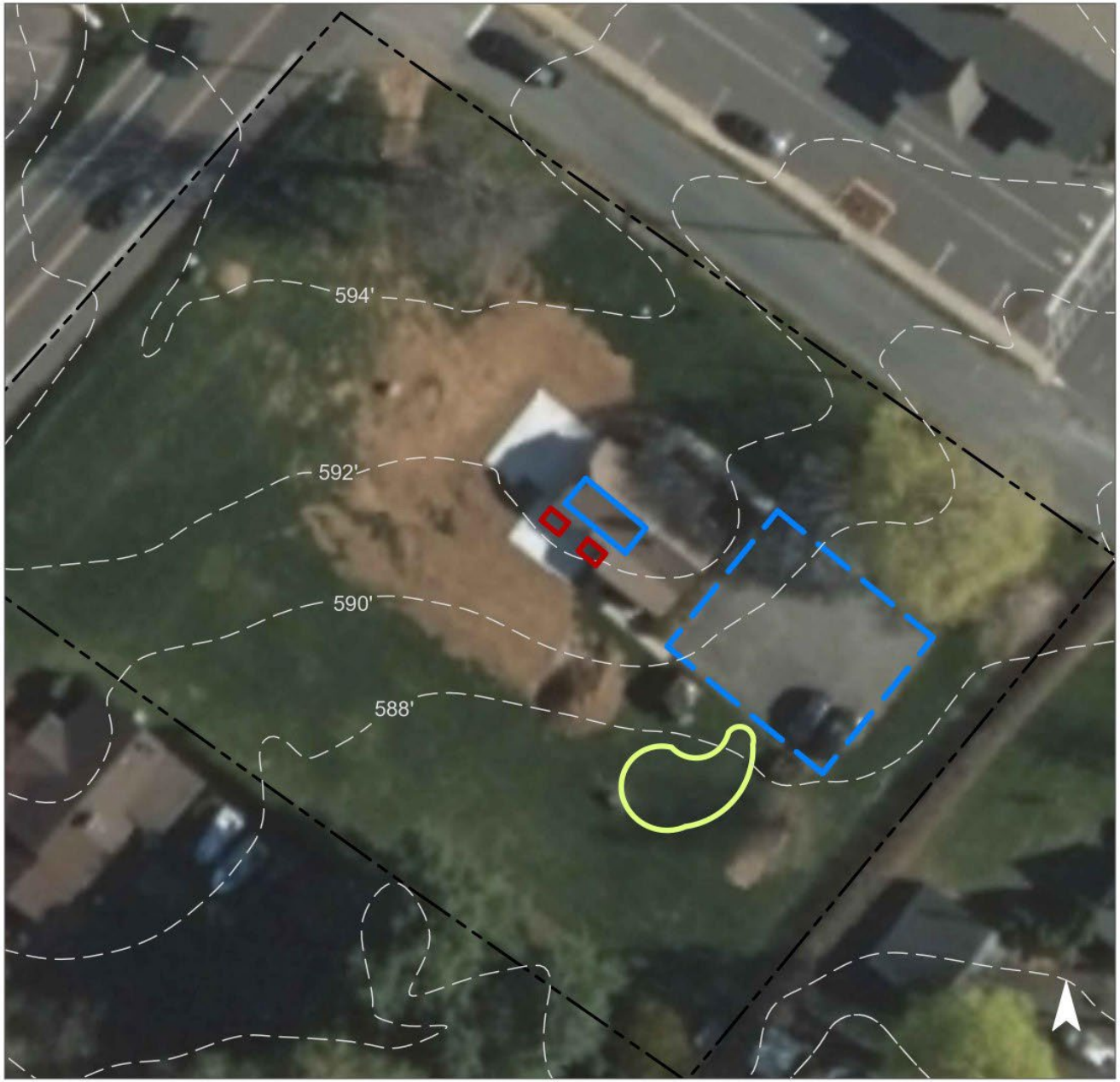
Block and Lot: Block 3, Lot 5,6

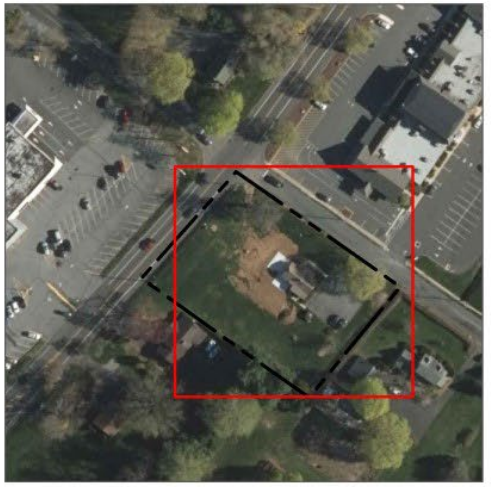
A rain garden can be installed at the end of the parking lot to capture, treat, and infiltrate stormwater runoff from the parking lot . Downspout planter boxes can be constructed along the building to allow roof runoff to be reused. A preliminary soil assessment suggests that the soils have suitable 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"
20	8,775	0.4	4.4	40.3	0.003	0.11

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	0.063	11	4,757	0.18	600	$3,000
Planter boxes	N/A	2	N/A	N/A	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS





James M Murray CPA

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

0 20' 40'

LOWER VALLEY PRESBYTERIAN CHURCH

RAP ID: 11

Subwatershed: Raritan River South Branch

Site Area: 101,066 sq. ft.

Address: 445 County Road 513
Califon, NJ 07830

Block and Lot: Block 1, Lot 2

A rain garden can be installed to capture, treat, and infiltrate stormwater runoff from the roof. Downspout planter boxes can be constructed along the building to allow roof runoff to be reused. 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"
47	47,178	2.3	23.8	216.6	0.037	1.29

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	0.018	3	1,354	0.05	170	$850
Planter boxes	N/A	3	N/A	N/A	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Lower Valley Presbyterian Church

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

0 10' 20'

STAIANOS FURNITURE

RAP ID: 12

Subwatershed: Raritan River South Branch

Site Area: 94,240 sq. ft.

Address: 442 County Road 513
Califon, NJ 07830

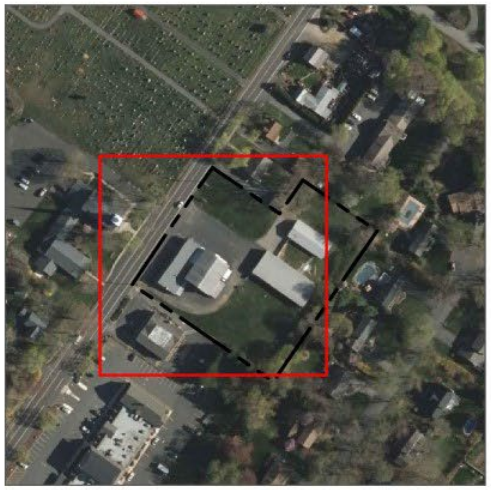
Block and Lot: Block 4, Lot 2

Porous pavement can be installed along the parking spots in the back lot of the building. The downspouts currently empty onto asphalt which is impervious and does not aid in infiltration. 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"
66	61,927	3.0	31.3	284.3	0.048	1.70

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavement	0.071	12	5,401	0.20	800	$20,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Staianos Furniture

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

0 30' 60'

UNITED STATES POSTAL SERVICES

RAP ID: 13

Subwatershed: Raritan River South Branch

Site Area: 10,212 sq. ft.

Address: 53 Main Street
Califon, NJ 07830

Block and Lot: Block 19, Lot 5

Porous pavement can be installed to collect stormwater from both the disconnected downspouts as well as from the parking lot surface. 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"
79	8,102	0.4	4.1	37.2	0.006	0.22

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
Pervious pavement	0.095	16	7,188	0.27	1,000	$25,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

United States Postal Service

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

0 20' 40'

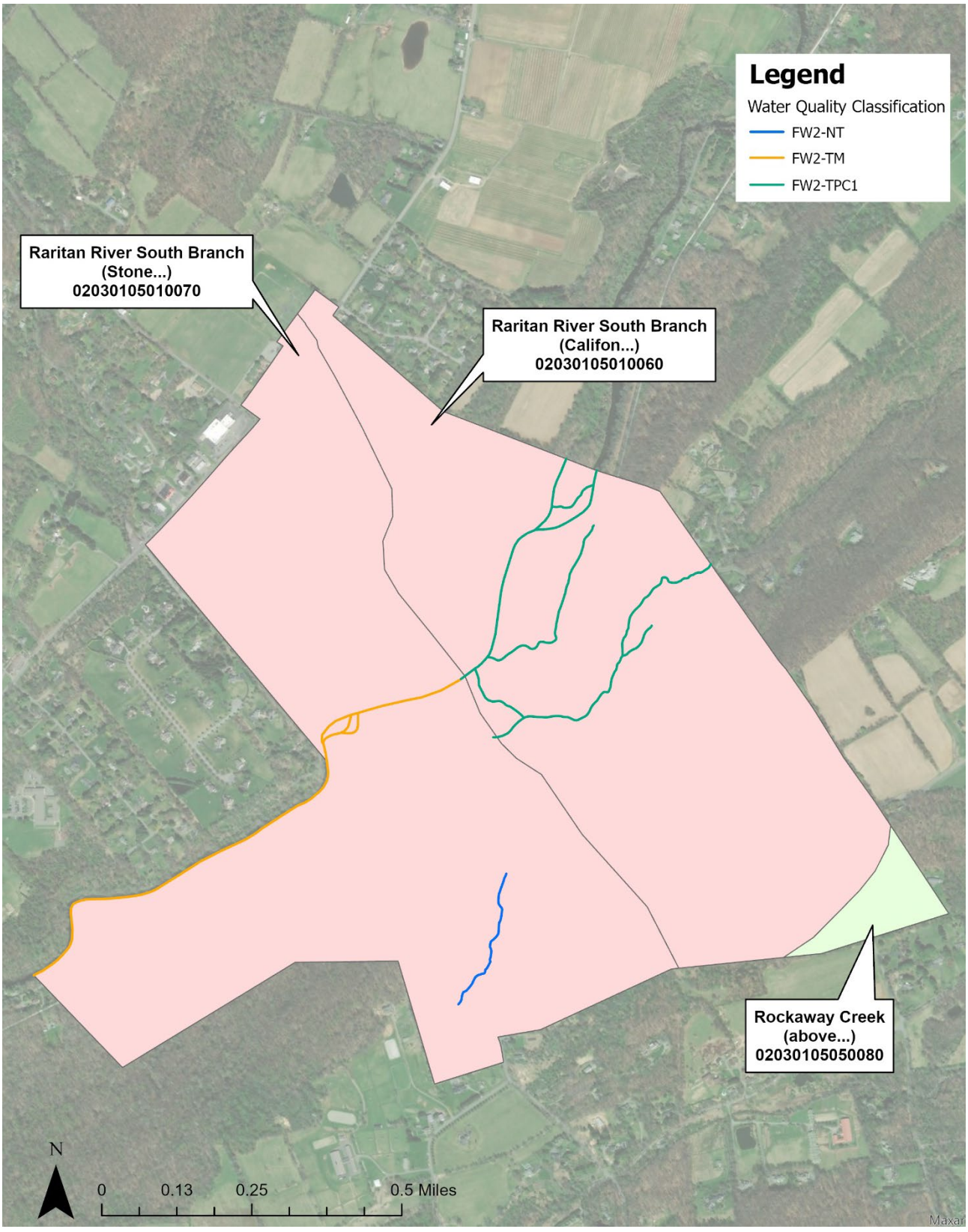


Figure 12. Water Quality Classification of Surface Waters in Califon Borough

Table 9. Water Quality Classification of Surface Waters in Califon Borough

Surface Water Quality Classification	Surface Water Quality Code	Miles	Percent of Municipal Streams
Freshwater 2, non-trout	FW2-NT	0.3	8.1%
Freshwater 2, trout production, Category One	FW2-TPC1	1.8	56.7%
Freshwater 2, trout maintenance	FW2-TM	1.1	35.2%