



Draft

**Impervious Cover Reduction Action Plan
for
Bound Brook Borough, New Jersey**

*Prepared for Bound Brook Borough by the
Rutgers Cooperative Extension Water Resources Program*

September 23, 2015



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Introduction

Located in Somerset County in central New Jersey, Bound Brook Borough covers approximately 1.7 square miles east of Bridgewater. Figures 1 and 2 illustrate that Bound Brook Borough is dominated by urban land uses. A total of 81.5% of the municipality's land use is classified as urban. Of the urban land in Bound Brook Borough, medium density residential is the dominant land use (Figure 3).

The New Jersey Department of Environmental Protection's (NJDEP) 2007 land use/land cover geographical information system (GIS) data layer categorizes Bound Brook Borough into many unique land use areas, assigning a percent impervious cover for each delineated area. These impervious cover values were used to estimate the impervious coverage for Bound Brook Borough. Based upon the 2007 NJDEP land use/land cover data, approximately 35.2% of Bound Brook Borough has impervious cover. This level of impervious cover suggests that the streams in Bound Brook Borough are likely non-supporting streams.

Methodology

Bound Brook Boro contains portions of six subwatersheds (Figure 2). For this impervious cover reduction action plan, projects have been identified in each of these watersheds. Initially, aerial imagery was used to identify potential project sites that contain extensive impervious cover. Field visits were then conducted at each of these potential project sites to determine if a viable option exists to reduce impervious cover or to disconnect impervious surfaces from draining directly to the local waterway or storm sewer system. During the site visit, appropriate green infrastructure practices for the site were determined. Sites that already had stormwater management practices in place were not considered.

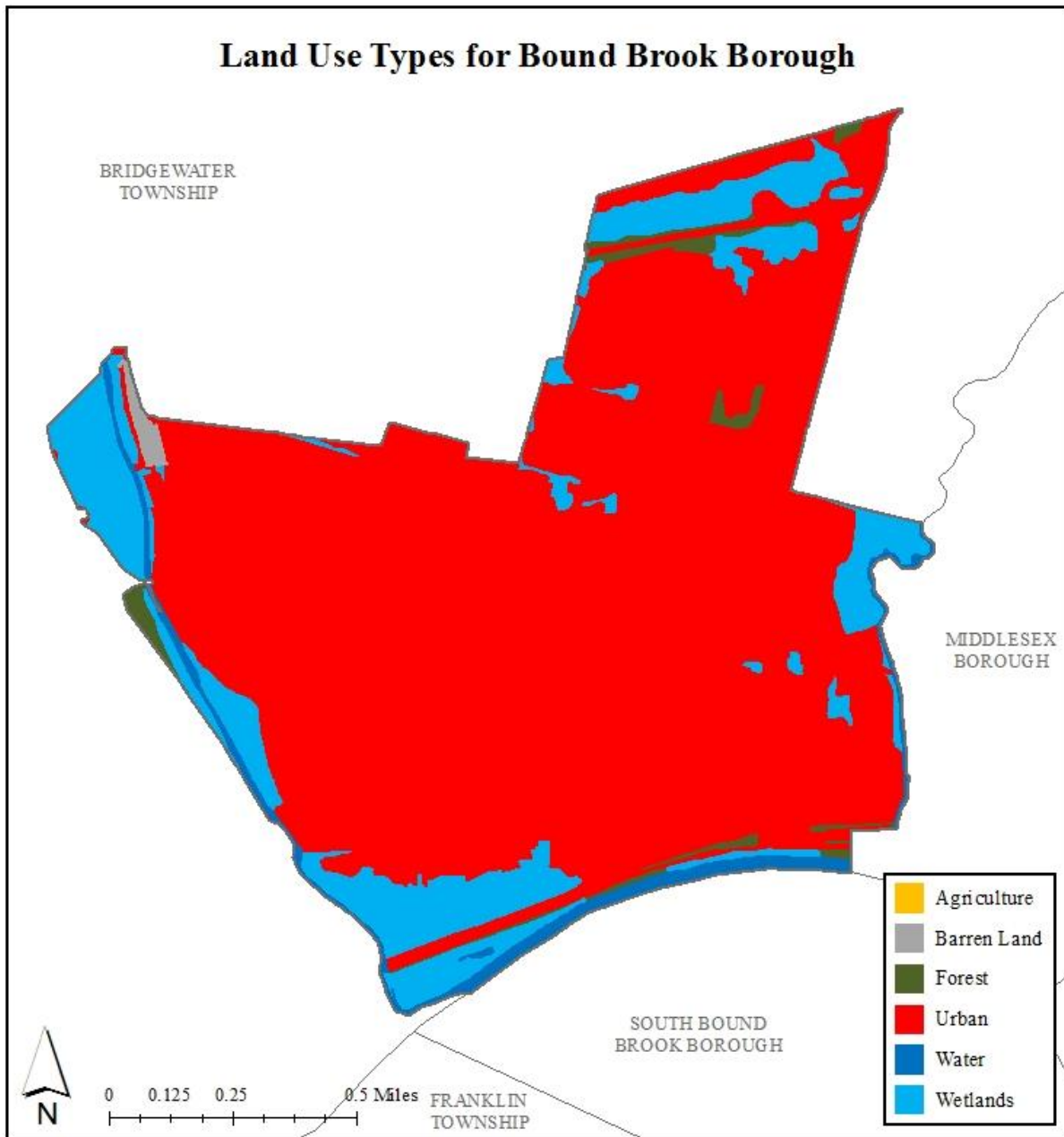


Figure 1: Map illustrating the land use in Bound Brook Borough

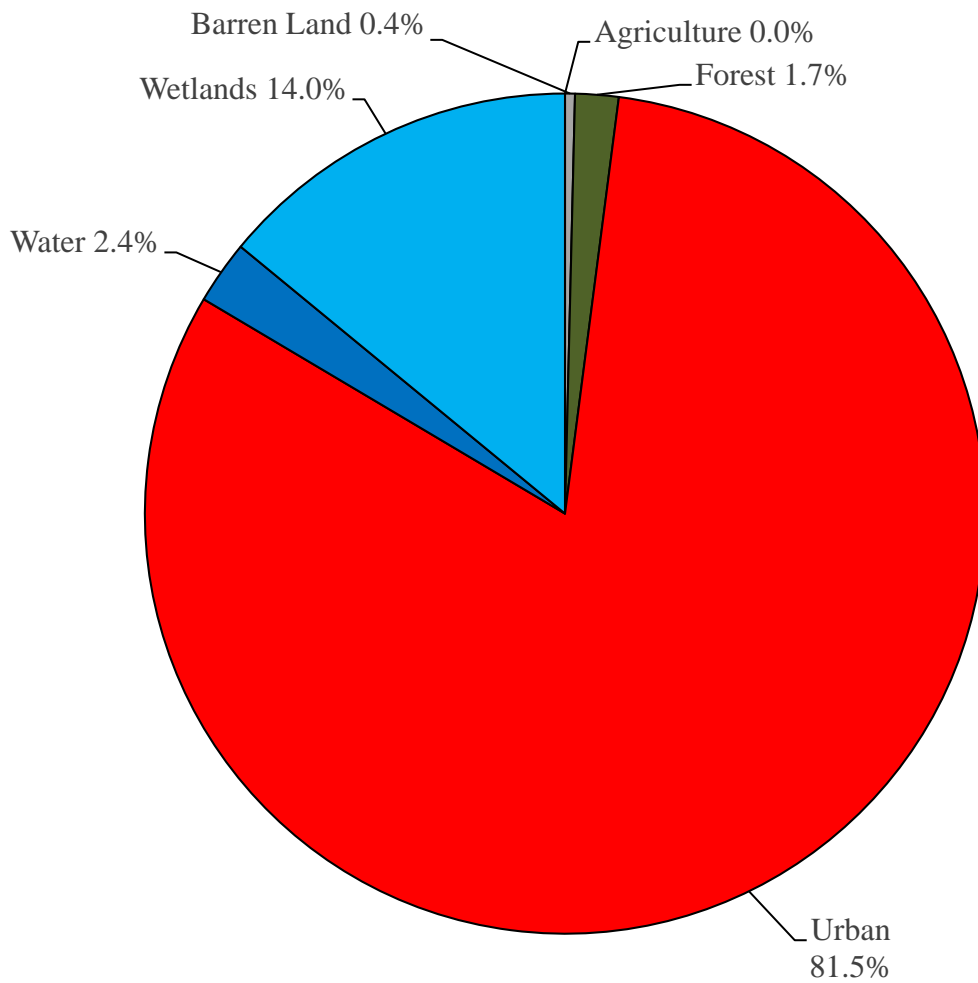


Figure 2: Pie chart illustrating the land use in Bound Brook Borough

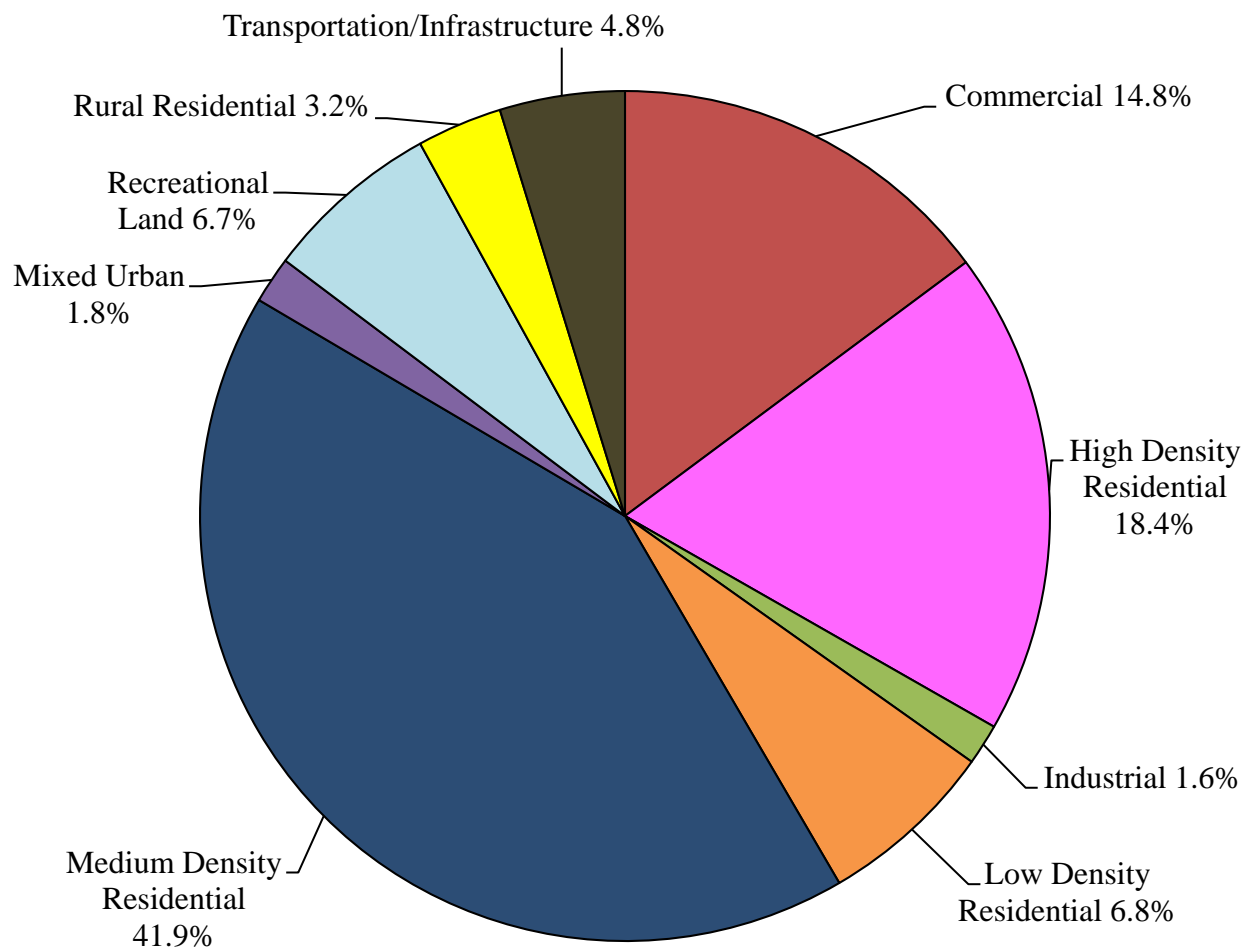


Figure 3: Pie chart illustrating the various types of urban land use in Bound Brook Borough

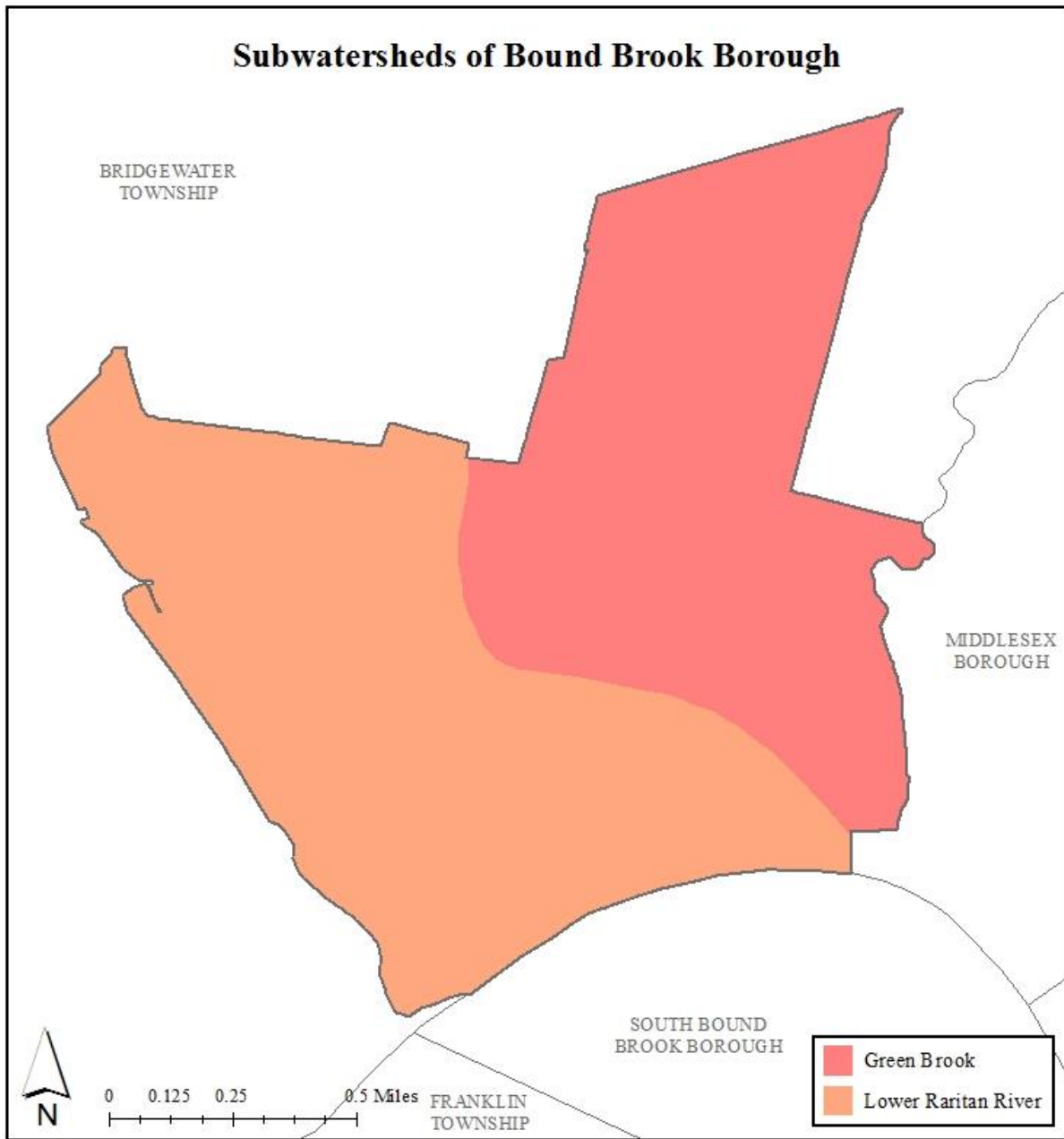


Figure 4: Map of the subwatersheds in Bound Brook Borough

For each potential project site, specific aerial loading coefficients for commercial land use were used to determine the annual runoff loads for total phosphorus (TP), total nitrogen (TN), and total suspended solids (TSS) from impervious surfaces (Table 1). These are the same aerial loading coefficients that NJDEP uses in developing total maximum daily loads (TMDLs) for impaired waterways of the state. The percentage of impervious cover for each site was extracted from the 2007 NJDEP land use/land cover database. For impervious areas, runoff volumes were determined for the water quality design storm (1.25 inches of rain over two-hours) and for the annual rainfall total of 44 inches.

Preliminary soil assessments were conducted for each potential project site identified in Bound Brook Borough using the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey, which utilizes regional and statewide soil data to predict soil types in an area. Several key soil parameters were examined (e.g., natural drainage class, saturated hydraulic conductivity of the most limiting soil layer (K_{sat}), depth to water table, and hydrologic soil group) to evaluate the suitability of each site's soil for green infrastructure practices. In cases where multiple soil types were encountered, the key soil parameters were examined for each soil type expected at a site.

For each potential project site, drainage areas were determined for each of the green infrastructure practices proposed at the site. These green infrastructure practices were designed to manage the 2-year design storm, enabling these practices to capture 95% of the annual rainfall. Runoff volumes were calculated for each proposed green infrastructure practice. The reduction in TSS loading was calculated for each drainage area for each proposed green infrastructure practice using the aerial loading coefficients in Table 1. The maximum volume reduction in stormwater runoff for each green infrastructure practice for a storm was determined by calculating the volume of runoff captured from the 2-year design storm. For each green infrastructure practice, peak discharge reduction potential was determined through hydrologic modeling in HydroCAD. For each green infrastructure practice, a cost estimate is provided. These costs are based upon the square footage of the green infrastructure practice and the real cost of green infrastructure practice implementation in New Jersey.

Table 1: Aerial Loading Coefficients¹

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

¹ New Jersey Department of Environmental Protection (NJDEP), Stormwater Best Management Practice Manual, 2004.

Green Infrastructure Practices

Green infrastructure is an approach to stormwater management that is cost-effective, sustainable, and environmentally friendly. Green infrastructure projects capture, filter, absorb, and reuse stormwater to maintain or mimic natural systems and to treat runoff as a resource. As a general principal, green infrastructure practices use soil and vegetation to recycle stormwater runoff through infiltration and evapotranspiration. When used as components of a stormwater management system, green infrastructure practices such as bioretention, green roofs, porous pavement, rain gardens, and vegetated swales can produce a variety of environmental benefits. In addition to effectively retaining and infiltrating rainfall, these practices can simultaneously help filter air pollutants, reduce energy demands, mitigate urban heat islands, and sequester carbon while also providing communities with aesthetic and natural resource benefits². A wide range of green infrastructure practices have been evaluated for the potential project sites in Bound Brook Borough. Each practice is discussed below.

Disconnected downspouts

This is often referred to as simple disconnection. A downspout is simply disconnected, prevented from draining directly to the roadway or storm sewer system, and directed to discharge water to a pervious area (i.e., lawn).



Pervious pavements

There are several types of permeable pavement systems including porous asphalt, pervious concrete, permeable pavers, and grass pavers. These surfaces are hard and support vehicle traffic but also allow water to infiltrate through the surface. They have an underlying stone layer to store stormwater runoff and allow it to slowly seep into the ground.



² United States Environmental Protection Agency (USEPA), 2013. Watershed Assessment, Tracking, and Environmental Results, New Jersey Water Quality Assessment Report.
http://ofmpub.epa.gov/waters10/attains_state.control?p_state=NJ

Bioretention systems/rain gardens

These are landscaped features that are designed to capture, treat, and infiltrate stormwater runoff. These systems can easily be incorporated into existing landscapes, improving aesthetics and creating a wildlife habitat while managing stormwater runoff. Bioretention systems also can be used in soils that do not quickly infiltrate by incorporating an underdrain into the system.



Downspout planter boxes

These are wooden boxes with plants installed at the base of a downspout that provide an opportunity to beneficially reuse rooftop runoff.



Rainwater harvesting systems (cistern or rain barrel)

These systems capture rainwater, mainly from rooftops, in cisterns or rain barrels. The water can then be used for watering gardens, washing vehicles, or for other non-potable uses.



Bioswale

Bioswales are landscape features that convey stormwater from one location to another while removing pollutants and providing water an opportunity to infiltrate.



Stormwater planters

Stormwater planters are vegetated structures that are built into the sidewalk to intercept stormwater runoff from the roadway or sidewalk. Many of these planters are designed to allow the water to infiltrate into the ground while others are designed simply to filter the water and convey it back into the stormwater sewer system.



Tree filter boxes

These are pre-manufactured concrete boxes that contain a special soil mix and are planted with a tree or shrub. They filter stormwater runoff but provide little storage capacity. They are typically designed to quickly filter stormwater and then discharge it to the local sewer system.



Potential Project Sites

Attachment 1 contains information on potential project sites where green infrastructure practices could be installed. The recommended green infrastructure practice and the drainage area that the green infrastructure practice can treat are identified for each potential project site. For each practice, the recharge potential, TSS removal potential, maximum volume reduction potential per storm, and the peak reduction potential are provided. This information is also provided so that proposed development projects that cannot satisfy the New Jersey stormwater management requirements for major development can use one of the identified projects to offset a stormwater management deficit.³

³ New Jersey Administrative Code, N.J.A.C. 7:8, Stormwater Management, Statutory Authority: N.J.S.A. 12:5-3, 13:1D-1 et seq., 13:9A-1 et seq., 13:19-1 et seq., 40:55D-93 to 99, 58:4-1 et seq., 58:10A-1 et seq., 58:11A-1 et seq. and 58:16A-50 et seq., *Date last amended: April 19, 2010.*

Conclusion

This impervious cover reduction action plan is meant to provide the municipality with a blueprint for implementing green infrastructure practices that will reduce the impact of stormwater runoff from impervious surfaces. These projects can be implemented by a wide variety of people such as boy scouts, girl scouts, school groups, faith-based groups, social groups, watershed groups, and other community groups.

Additionally, development projects that are in need of providing off-site compensation for stormwater impacts can use the projects in this plan as a starting point. The municipality can quickly convert this impervious cover reduction action plan into a stormwater mitigation plan and incorporate it into the municipal stormwater control ordinance.

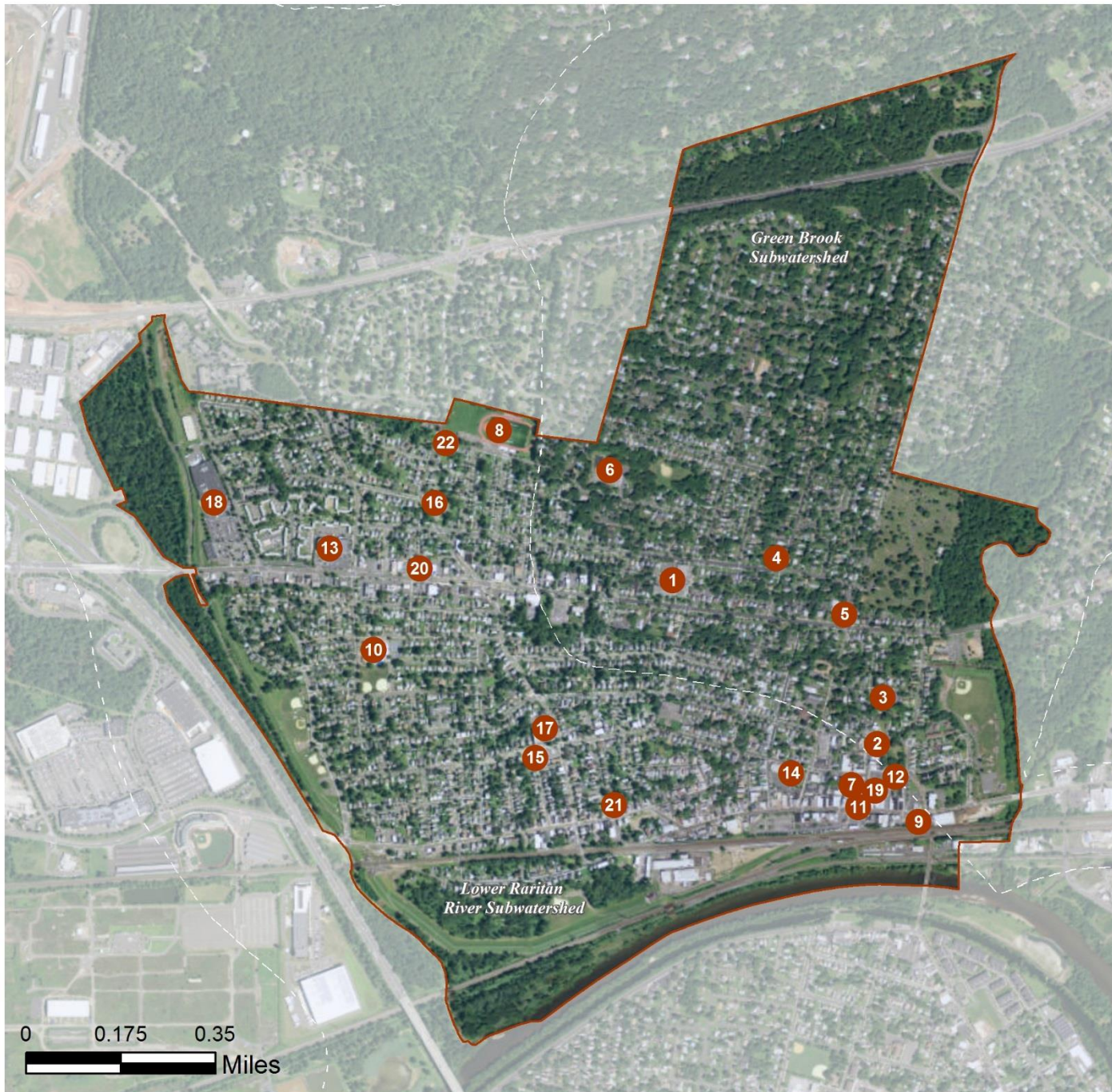
a. Overview Map of the Project

BOUND BROOK: CLIMATE RESILIENT GREEN INFRASTRUCTURE FOR THE RARITAN BASIN



b. Green Infrastructure Sites

BOUND BROOK: GREEN INFRASTRUCTURE SITES



SITES WITHIN THE GREEN BROOK SUBWATERSHED:

1. Bound Brook High School
2. Bound Brook Memorial Library
3. Bound Brook Police Department
4. Gastromed Health Care, P.A.
5. Presbyterian Church
6. Smalley Middle School

SITES WITHIN THE LOWER RARITAN RIVER SUBWATERSHED:

7. 20-22 Maiden Lane
8. Bound Brook Football Field
9. Bound Brook Hose Company No. 1
10. Codrington Park
11. Douglas Parking
12. East High Street Apartment Parking
13. Efinger Sporting Goods
14. Holy Family Academy and Parish
15. Lamonte School
16. Madeline's On Vosseller
17. St. Mary of Czestochowa and La Monte Annex
18. ShopRite Supermarket
19. Somerset County Cultural Arts
20. Union Avenue Pharmacy
21. Van Keuren Residential Parking Lot
22. Watchung Fire Company No. 3

c. Proposed Green Infrastructure Concepts

BOUND BROOK HIGH SCHOOL



Subwatershed: Green Brook
Site Area: 142,026 sq. ft.
Address: 111 West Union Avenue
Bound Brook, NJ 08805
Block and Lot: Block 76, Lot 7

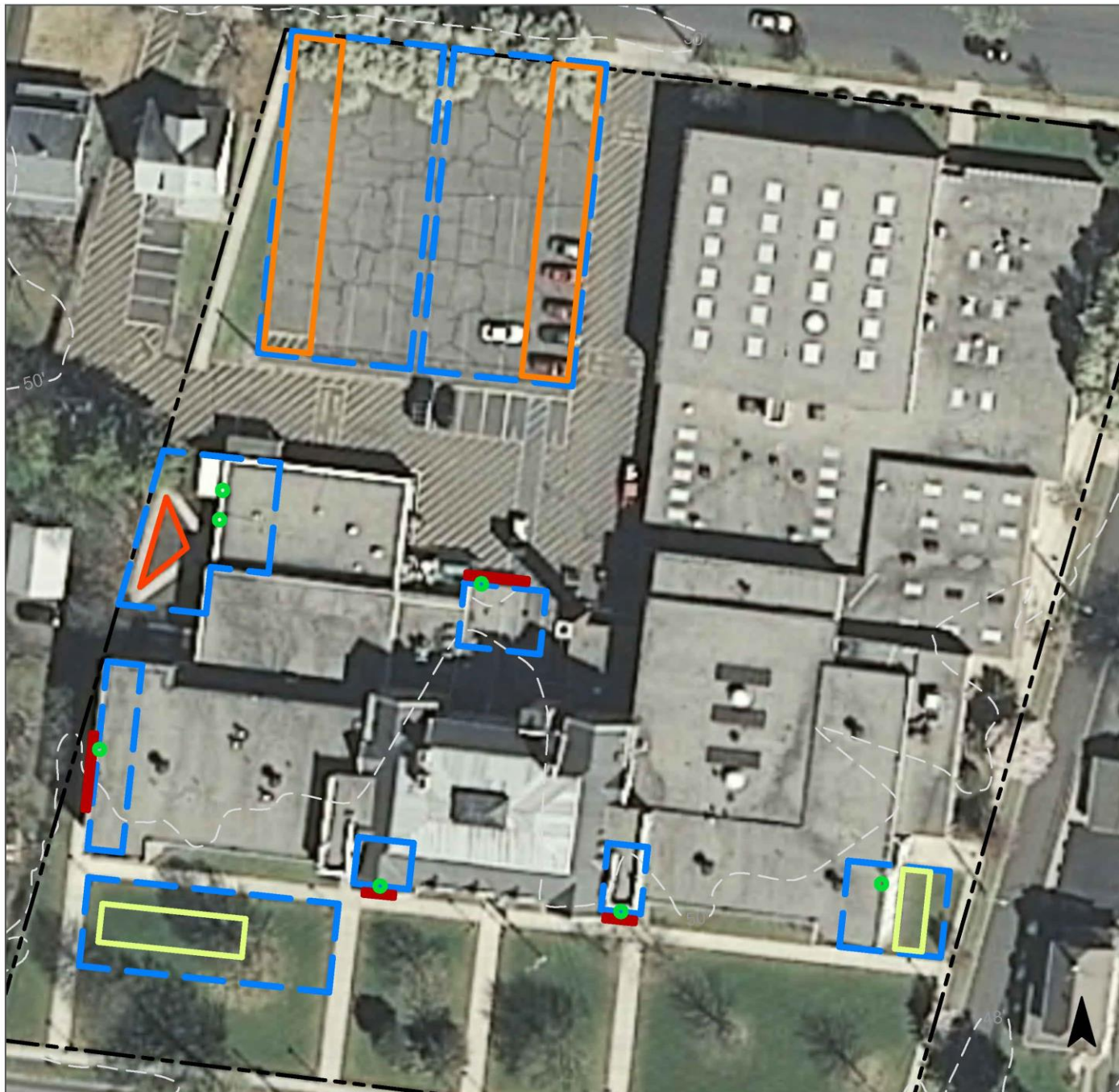


Parking spaces can be replaced with pervious pavers to infiltrate runoff. Two rain gardens can also capture, treat, and infiltrate runoff and serve as educational sites. Downspout planter boxes and stormwater planters can be used to capture some of the roof runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
85	120,680	5.8	60.9	554.1	0.094	3.31

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	0.122	20	8,961	0.34	1,165	\$5,825
Downspout planter boxes	0.022	4	n/a	n/a	48	\$4,000
Pervious pavements	0.383	64	28,102	1.06	4,212	\$105,300
Stormwater planters	0.07	12	5,176	0.19	237	\$23,700

GREEN INFRASTRUCTURE RECOMMENDATIONS



Bound Brook High School

-  disconnected downspouts
-  pervious pavements
-  bioretention / rain gardens
-  downspout planter boxes
-  stormwater planters
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS

0 30' 60'

BOUND BROOK MEMORIAL LIBRARY



Subwatershed: Green Brook
Site Area: 15,754 sq. ft.
Address: 402 East High Street
Bound Brook, NJ 08805
Block and Lot: Block 12, Lot 14

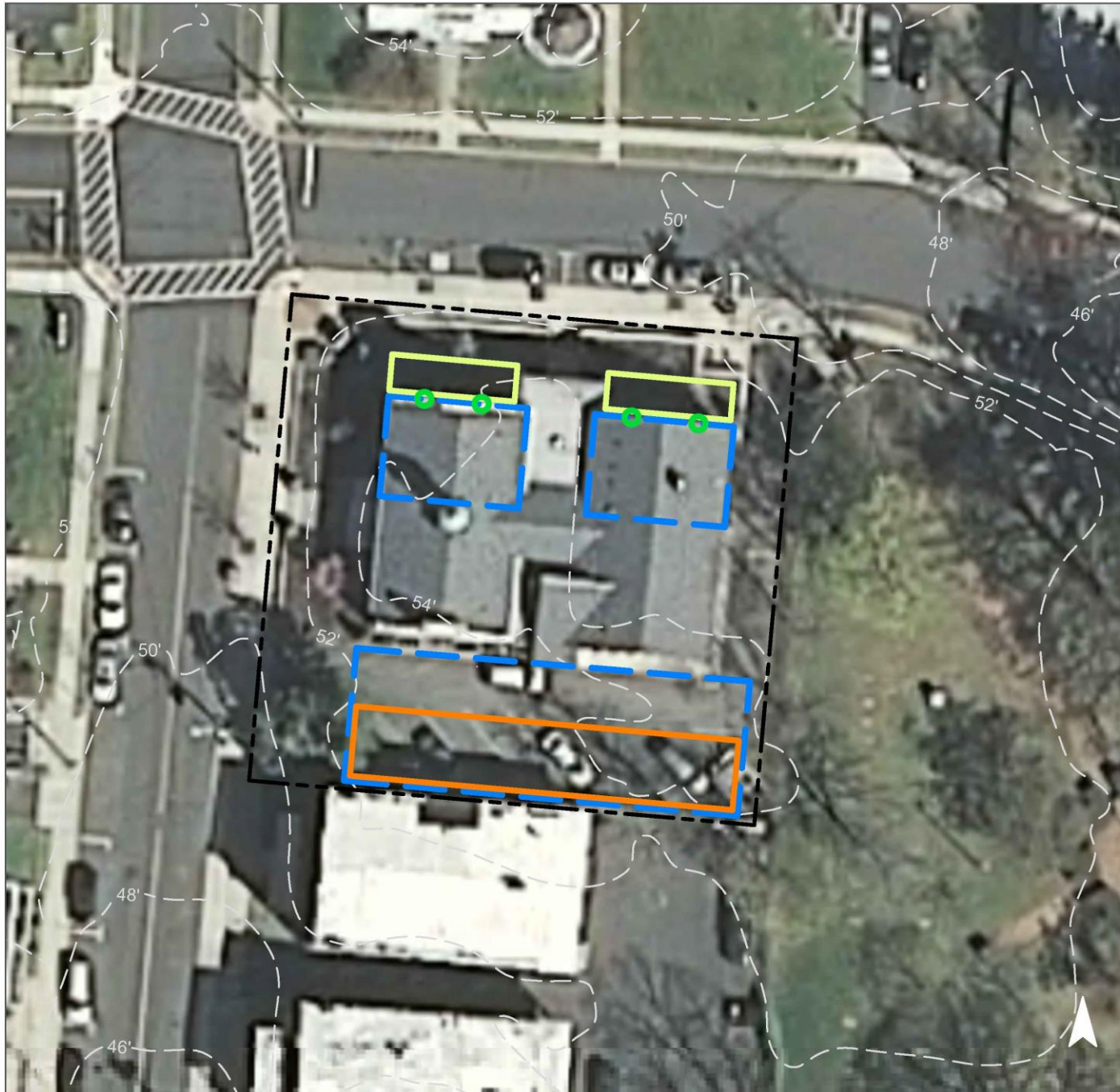


Four downspouts can be disconnected into rain gardens to capture, treat, and infiltrate roof runoff. A row of parking spaces can be replaced with pervious pavement to infiltrate stormwater. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.







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"
95	14,966	0.7	7.6	68.7	0.012	0.41

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	0.049	8	3,575	0.13	582	\$2,910
Pervious pavements	0.089	15	6,567	0.25	1,809	\$45,225

GREEN INFRASTRUCTURE RECOMMENDATIONS



Bound Brook Library

-  disconnected downspouts
-  pervious pavements
-  bioretention / rain gardens
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



BOUND BROOK POLICE DEPARTMENT



Subwatershed: Green Brook
Site Area: 34,633 sq. ft.
Address: 230 Hamilton Street
Bound Brook, NJ 08805
Block and Lot: Block 52, Lot 1

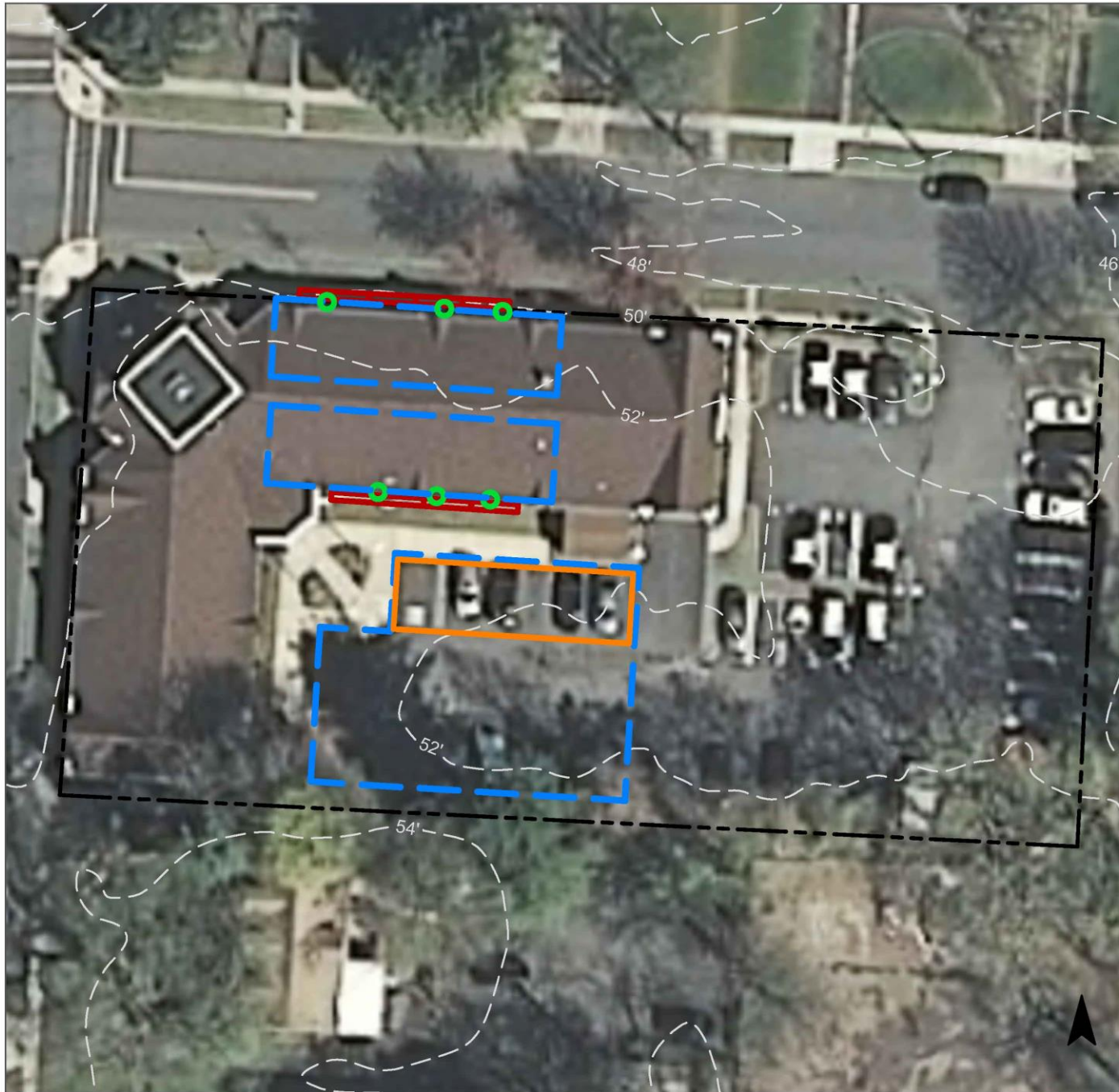


Parking spaces can be repaved with pervious pavement to infiltrate runoff. Several downspouts can also be disconnected into downspout planter boxes. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure







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"
94	32,727	1.6	16.5	150.3	0.025	0.90

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
Downspout planter boxes	0.093	16	n/a	n/a	108	\$9,000
Pervious pavements	0.110	18	8,056	0.30	1,098	\$27,450

GREEN INFRASTRUCTURE RECOMMENDATIONS



Bound Brook Police Department

-  disconnected downspouts
-  pervious pavements
-  downspout planter boxes
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



GASTROMED HEALTH CARE, P.A.



Subwatershed: Green Brook
Site Area: 36,658 sq. ft.
Address: 515 Church Street
Bound Brook, NJ 08805
Block and Lot: Block 87, Lot 9



Parking spaces can be replaced with porous asphalt to capture runoff from the parking lot and a portion of 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"
82	30,163	1.5	15.2	138.5	0.024	0.83

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 pavements	0.392	66	28,753	1.08	3,034	\$75,850

GREEN INFRASTRUCTURE RECOMMENDATIONS



Gastromed Health Care, P. A.

-  disconnected downspouts
-  pervious pavements
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



PRESBYTERIAN CHURCH



Subwatershed: Green Brook
Site Area: 65,904 sq. ft.
Address: 409 Mountain Avenue
Bound Brook, NJ 08805
Block and Lot: Block 78, Lot 9

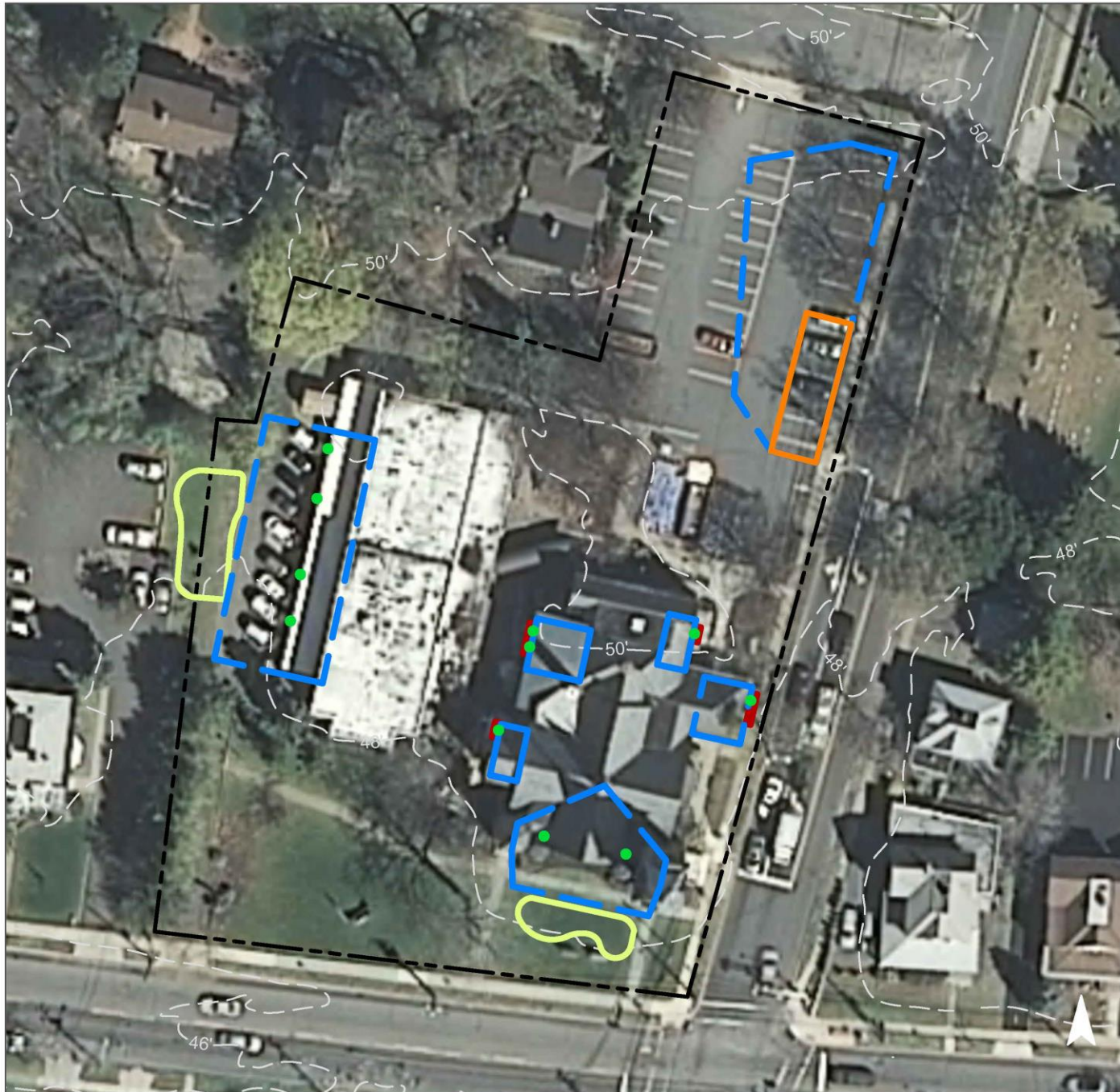


Two rain gardens can be installed to capture, treat, and infiltrate runoff. A portion of the parking lot can be repaved with pervious pavement and a series of downspout planters can be installed around the building. A preliminary soil assessment suggests that the soils have suitable drainage characteristics 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"
70	45,925	2.2	23.2	210.9	0.036	1.26

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.160	27	11,774	0.44	561	\$2,805
Downspout planter boxes	0.034	6	n/a	n/a	72	\$6,000
Pervious pavements	0.134	22	9,829	0.37	997	\$24,925

GREEN INFRASTRUCTURE RECOMMENDATIONS



Presbyterian Church

-  disconnected downspouts
-  pervious pavements
-  bioretention / rain gardens
-  downspout planter boxes
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



SMALLEY MIDDLE SCHOOL



Subwatershed: Green Brook
Site Area: 365,862 sq. ft.
Address: 163 Cherry Avenue
Bound Brook, NJ 08805
Block and Lot: Block 102, Lot 31

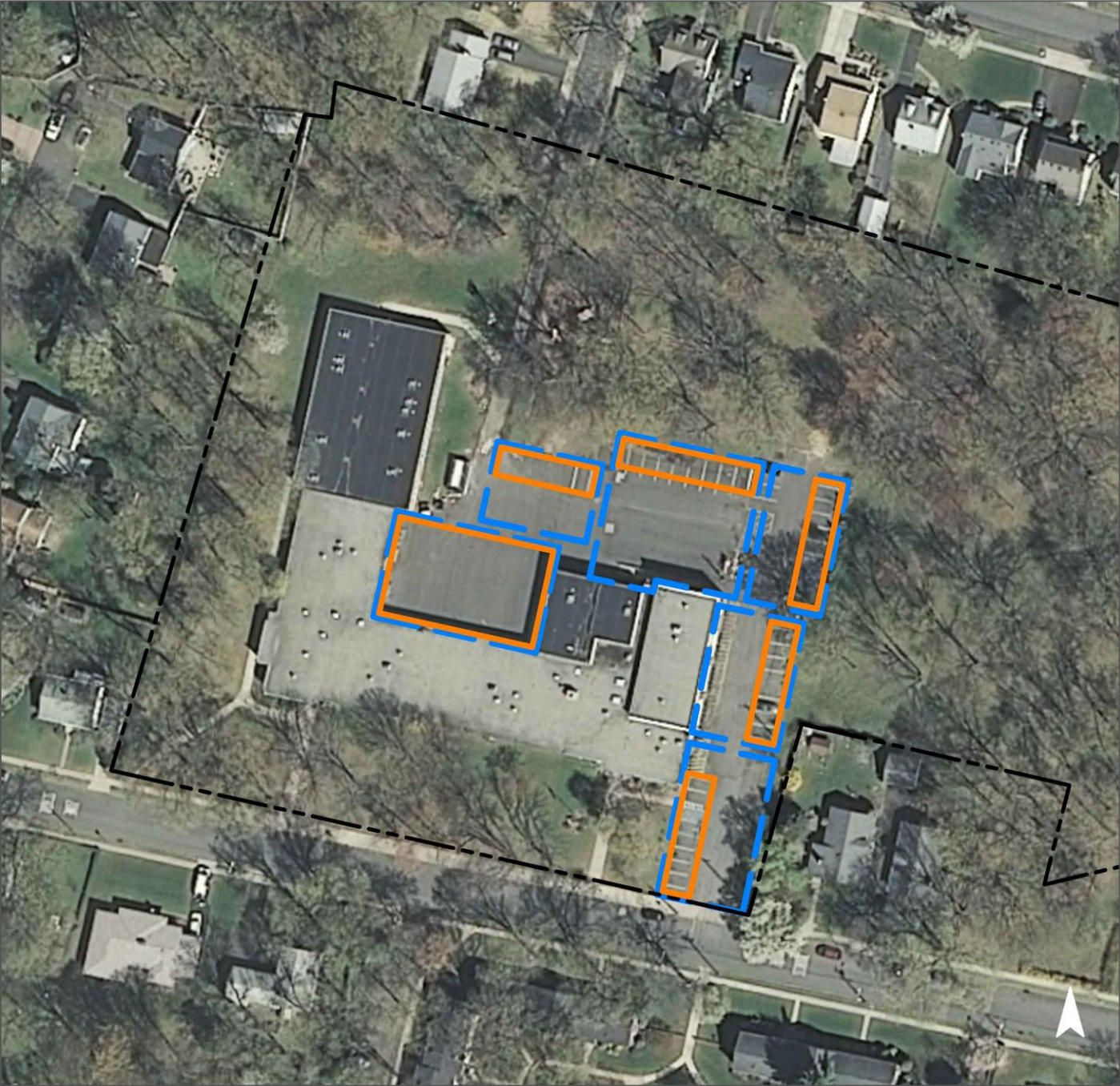


Several rows of parking spaces can be replaced with pervious pavement to infiltrate runoff before it reaches catch basins. A play area can also be replaced with pervious pavement to infiltrate runoff. A preliminary soil assessment suggests that more soil testing would be required before determining the 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"
35	129,756	6.3	65.5	595.8	0.101	3.56

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 pavements	0.898	150	65,884	2.48	14,565	\$364,125

GREEN INFRASTRUCTURE RECOMMENDATIONS



Smalley Middle School

-  pervious pavements
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



20-22 MAIDEN LANE



Subwatershed: Lower Raritan River

Site Area: 10,026 sq. ft.

Address: 20-22 Maiden Lane
Bound Brook, NJ 08805

Block and Lot: Block 11, Lot 9



Downspouts can be disconnected into downspout planter boxes and parking spaces can be converted into pervious pavement to capture and infiltrate runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.







Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
95	9,524	0.5	4.8	43.7	0.007	0.26

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
Downspout planter boxes	0.022	4	n/a	n/a	48	\$4,000
Pervious pavements	0.074	12	5,401	0.20	1000	\$25,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



20-22 Maiden Lane

-  disconnected downspouts
-  pervious pavements
-  downspout planter boxes
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



BOUND BROOK FOOTBALL FIELD



Subwatershed: Lower Raritan River

Site Area: 348,333 sq. ft.

Address: 279 Crusader Way
Bound Brook, NJ 08805

Block and Lot: Block 103, Lot 13

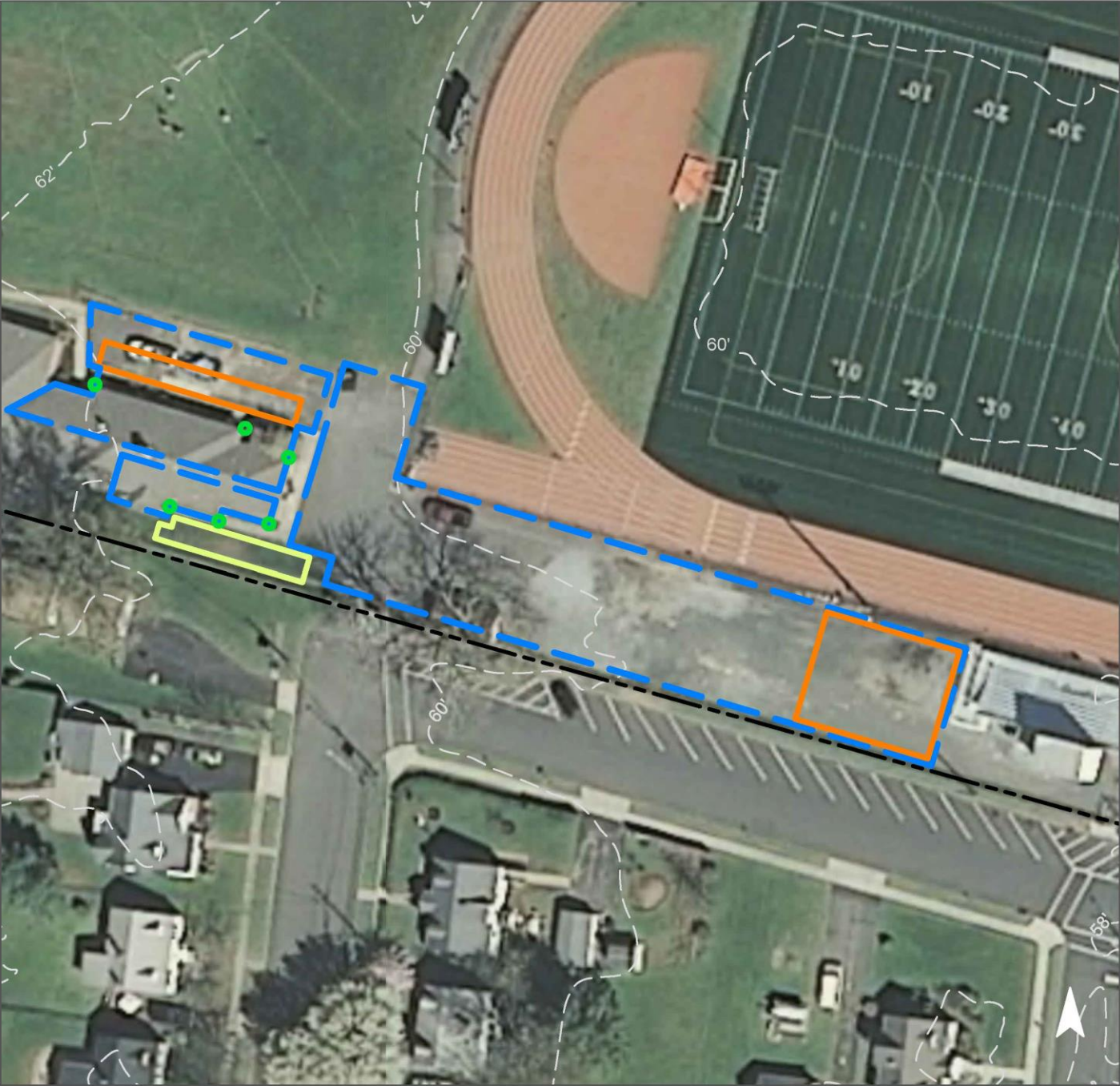


A rain garden can be installed to capture, treat, and infiltrate roof runoff. Additionally, two areas can be converted into pervious pavement to infiltrate runoff before it reaches a catch basin. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's 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"
24	84,439	4.1	42.6	387.7	0.066	2.32

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	0.023	4	1,683	0.06	580	\$2,900
Pervious pavements	0.467	78	34,236	1.29	3,338	\$83,450

GREEN INFRASTRUCTURE RECOMMENDATIONS



Bound Brook Football Field

-  pervious pavements
-  disconnected downspouts
-  bioretention / rain gardens
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



BOUND BROOK HOSE COMPANY No. 1



Subwatershed: Lower Raritan River

Site Area: 2,418 sq. ft.

Address: 510 East Main Street
Bound Brook, NJ 08805

Block and Lot: Block 1, Lot 67

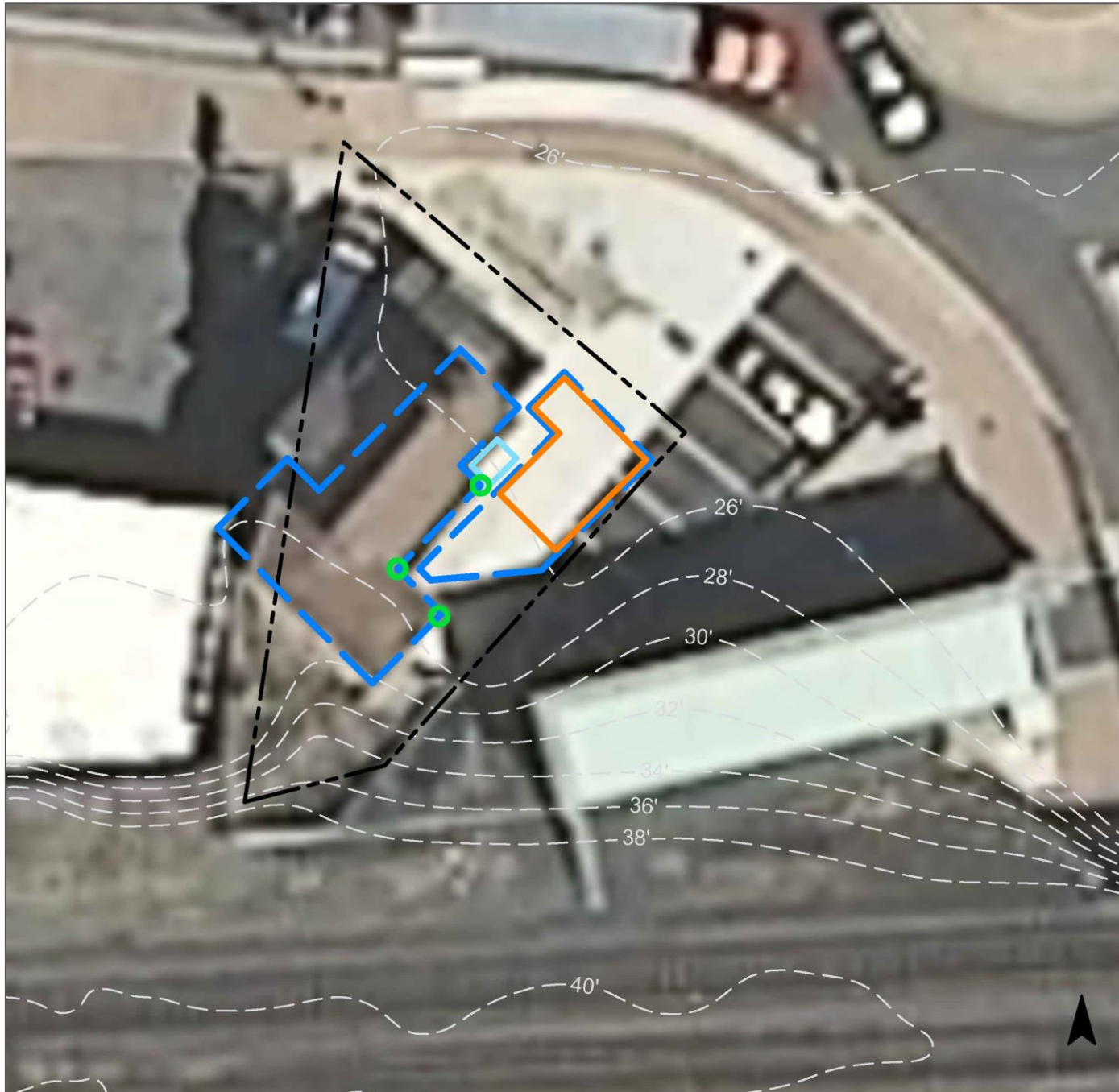


Downspouts can be directed into a cistern to harvest rainwater to use for washing vehicles. An area near the cistern can be repaved with pervious pavement to infiltrate runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.







Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
95	2,297	0.1	1.2	10.5	0.002	0.06

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 pavements	0.011	2	758	0.03	250	\$6,250
Rainwater harvesting systems	0.018	3	650	0.05	650 gal.	\$1,300

GREEN INFRASTRUCTURE RECOMMENDATIONS



Bound Brook Hose Company No. 1

-  disconnected downspouts
-  pervious pavements
-  rainwater harvesting
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



CODRINGTON PARK



Subwatershed: Lower Raritan River

Site Area: 167,678 sq. ft.

Address: Thompson and Grove Avenues
Bound Brook, NJ 08805

Block and Lot: Block 44, Lot 1

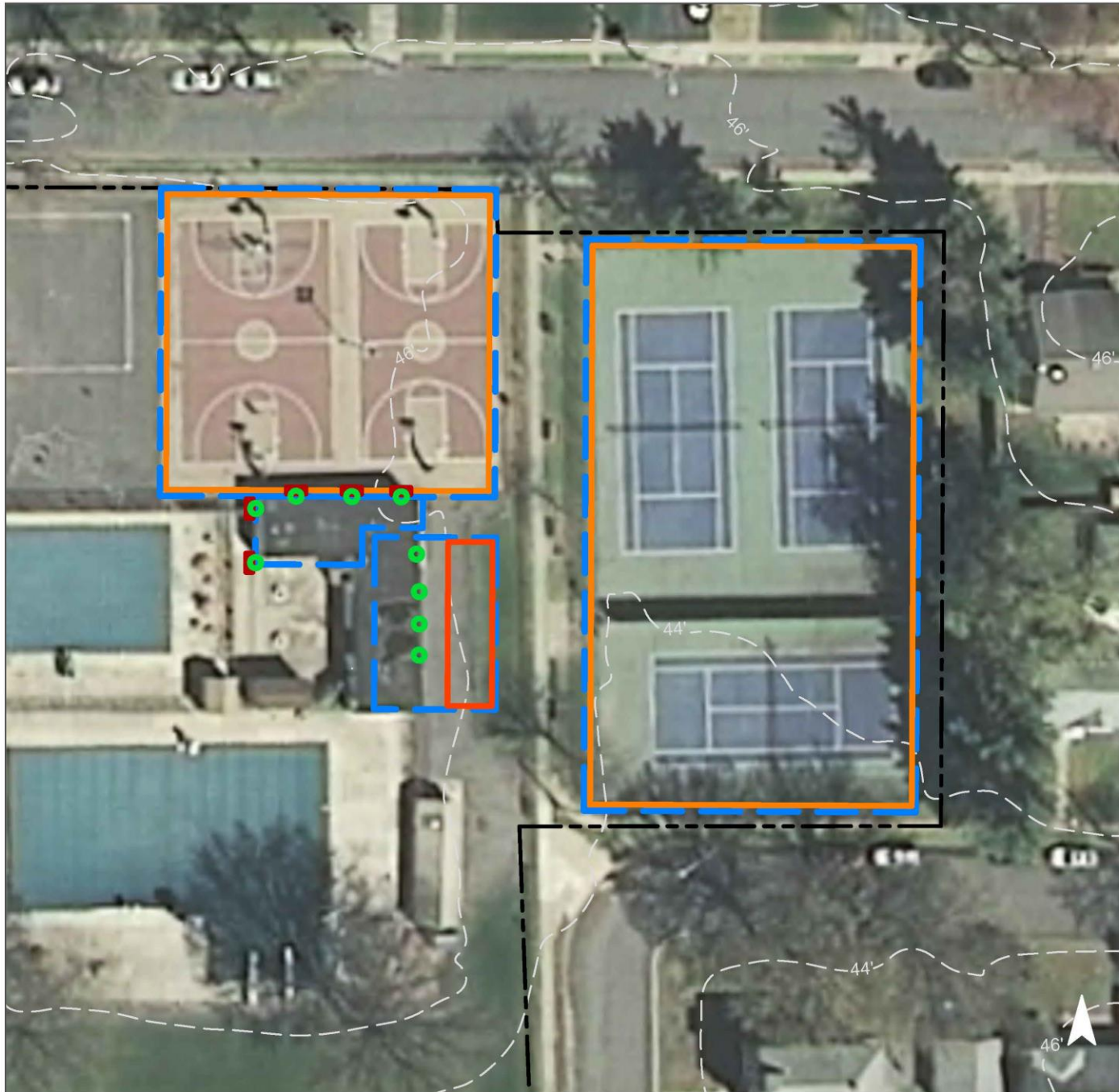


Tennis and basketball courts can be replaced with pervious pavement to infiltrate runoff. Downspouts can also be disconnected to downspout planter boxes and stormwater planters. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.








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	89,129	4.3	45.0	409.2	0.069	2.44

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
Downspout planter boxes	0.028	5	n/a	n/a	60	\$5,000
Pervious pavements	0.770	129	56,489	2.12	29,546	\$738,650
Stormwater planters	0.057	9	4,159	0.16	760	\$76,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Codrington Park

-  disconnected downspouts
-  pervious pavements
-  downspout planter boxes
-  stormwater planters
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



DOUGLAS PARKING



Subwatershed: Lower Raritan River

Site Area: 7,095 sq. ft.

Address: 307 East Main Street
Bound Brook ,NJ 08805

Block and Lot: Block 11, Lot 5



The parking lot is currently in fair condition. Parking spaces can be replaced with pervious pavement to infiltrate runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.





Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
95	6,740	0.3	3.4	30.9	0.005	0.18

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 pavements	0.165	28	12,140	0.46	1,053	\$26,325

GREEN INFRASTRUCTURE RECOMMENDATIONS



Douglas Parking

-  pervious pavements
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



EAST HIGH STREET APARTMENT PARKING



Subwatershed: Lower Raritan River

Site Area: 37,598 sq. ft.

Address: East High Street
Bound Brook, NJ 08805

Block and Lot: Block 12, Lot 2.01

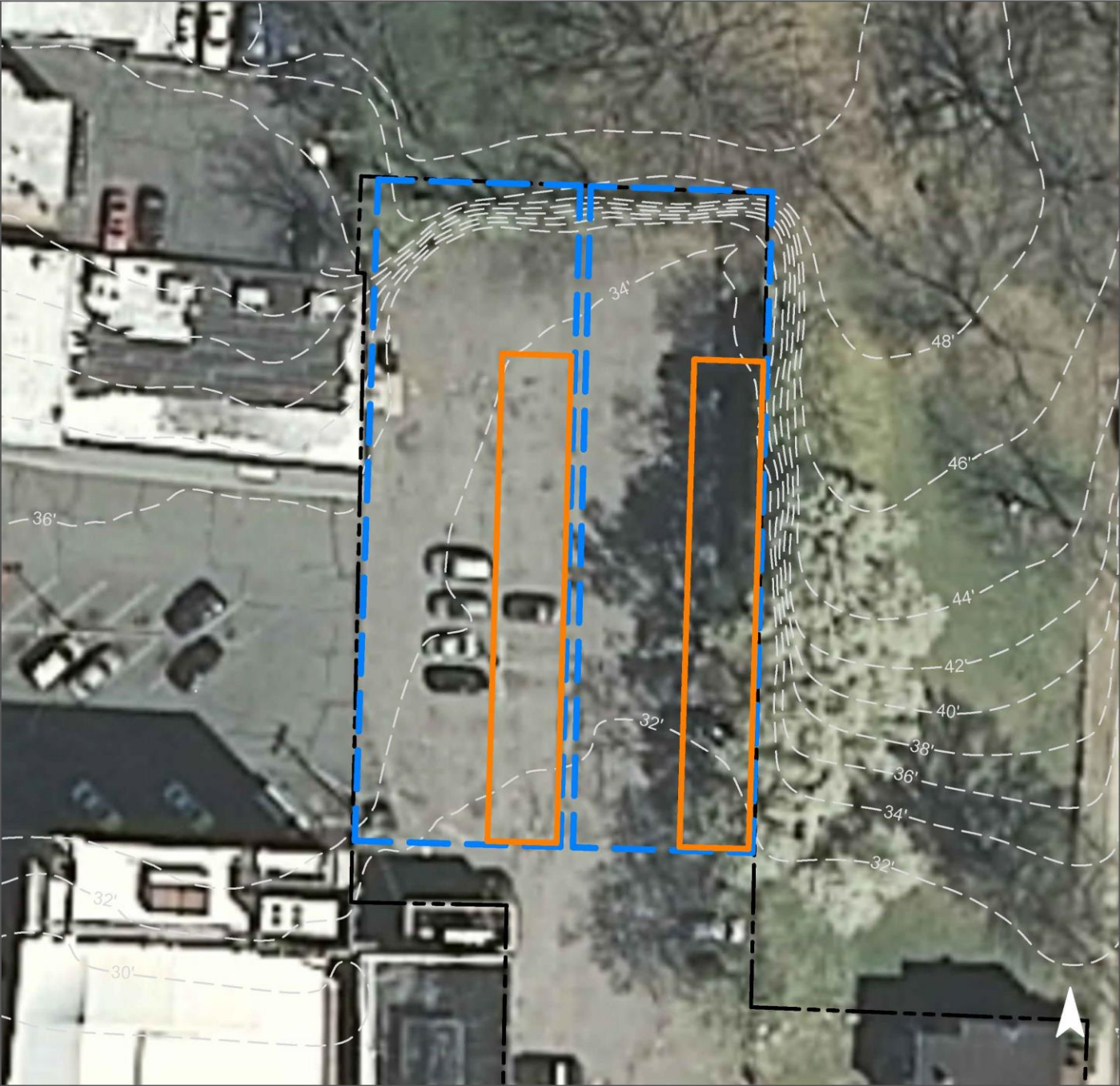


Two rows of parking spaces can be replaced with pervious pavement to infiltrate runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.





Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
93	34,999	1.7	17.7	160.7	0.027	0.96

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 pavements	0.448	75	32,875	1.24	4,559	\$113,975

GREEN INFRASTRUCTURE RECOMMENDATIONS



Apartment Parking

-  pervious pavements
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



EFINGER SPORTING GOODS



Subwatershed: Lower Raritan River

Site Area: 127,628 sq. ft.

Address: 513 W Union Avenue
Bound Brook, NJ 08805

Block and Lot: Block 69, Lot 6

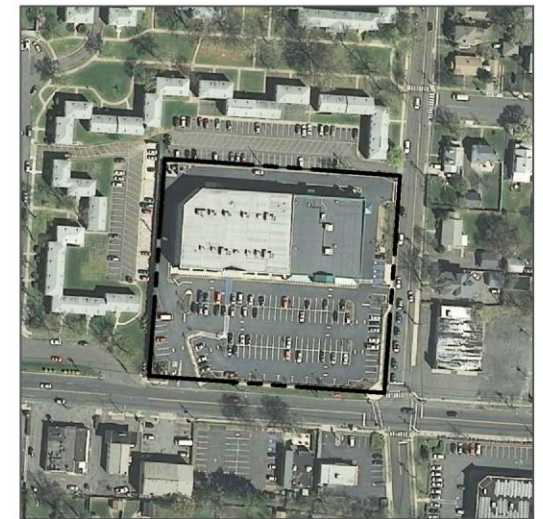
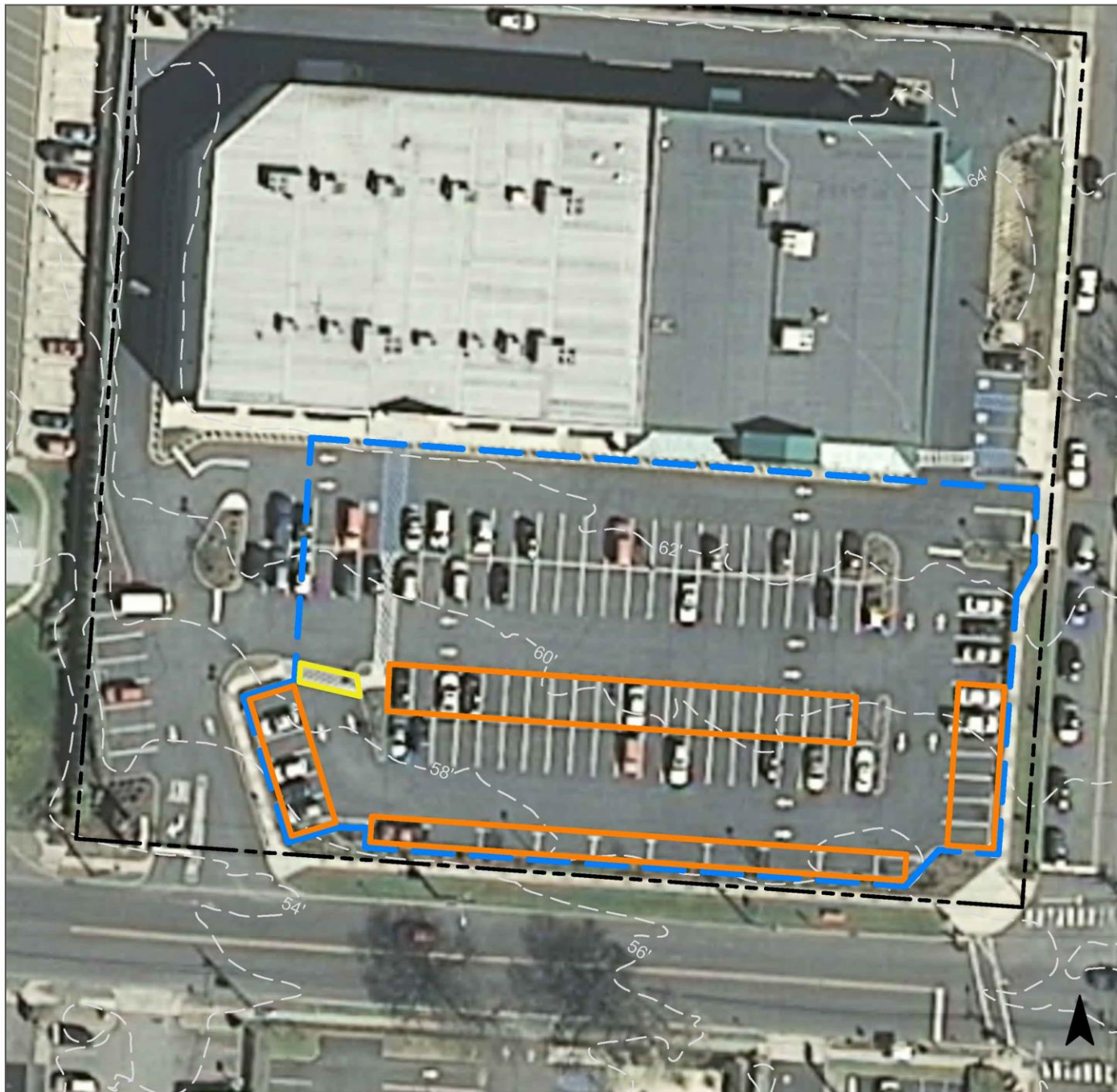


Parking spaces can be replaced with pervious pavement to capture and infiltrate runoff. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.






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"
94	120,561	5.8	60.9	553.5	0.094	3.31

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 pavements	1.190	199	87,351	3.28	7,542	\$188,550

GREEN INFRASTRUCTURE RECOMMENDATIONS



Efinger Sporting Goods

-  pervious pavement
-  curb cut
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



HOLY FAMILY ACADEMY AND PARISH



Subwatershed: Lower Raritan River

Site Area: 77,086 sq. ft.

Address: 120 East 2nd Street
Bound Brook, NJ 08805

Block and Lot: Block 9, Lot 3

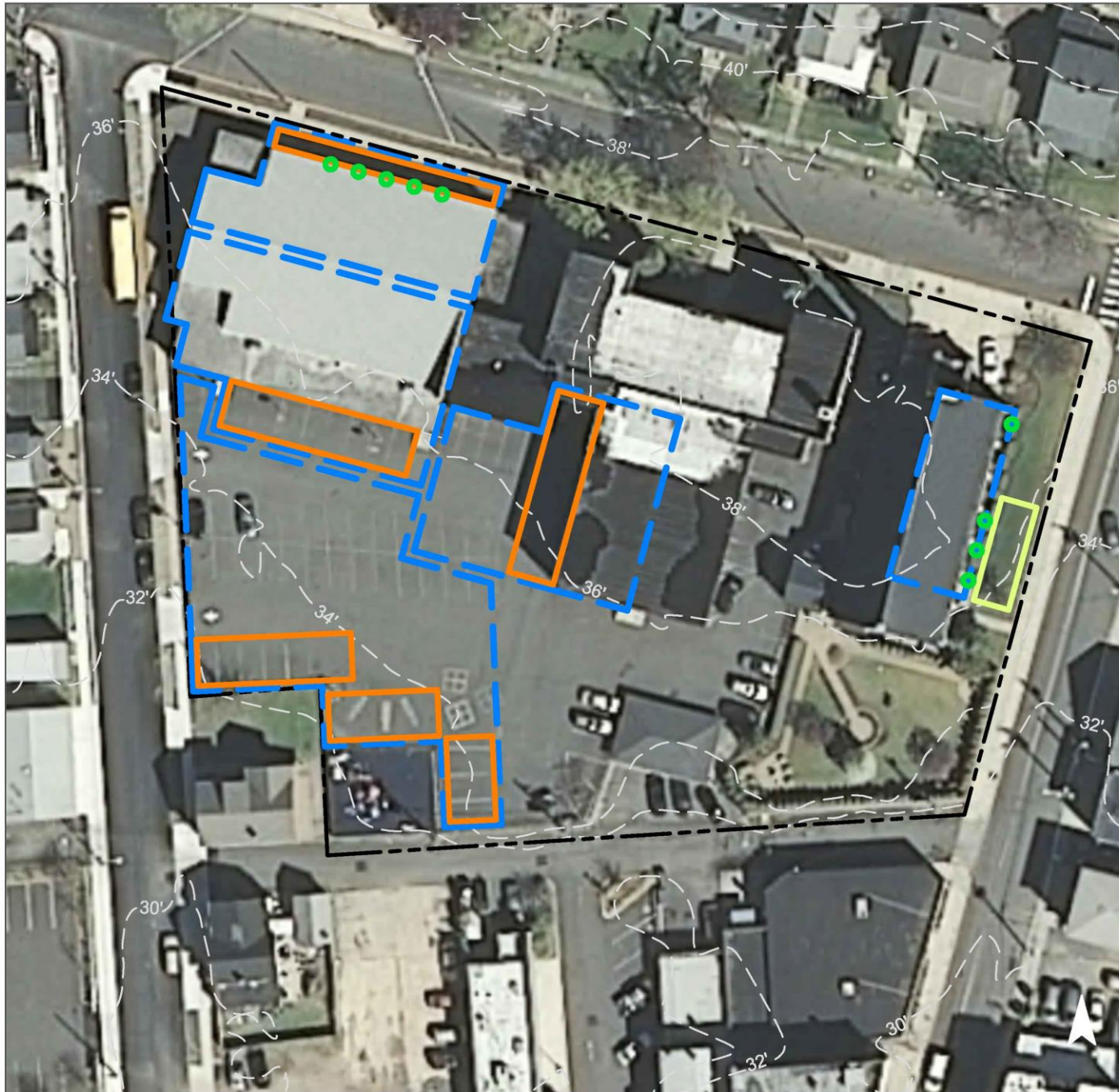


Several areas can be replaced with pervious pavement to infiltrate runoff. A rain garden can be installed to capture, treat, and infiltrate roof runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.







Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
95	73,231	3.5	37.0	336.2	0.057	2.01

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	0.077	13	5,617	0.21	574	\$2,870
Pervious pavements	0.784	131	57,559	2.16	5,770	\$144,250

GREEN INFRASTRUCTURE RECOMMENDATIONS



Holy Family Academy and Parish

-  disconnected downspouts
-  pervious pavements
-  bioretention / rain gardens
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



LAMONTE SCHOOL



Subwatershed: Lower Raritan River

Site Area: 49,038 sq. ft.

Address: 337 West 2nd Street
Bound Brook, NJ 08805

Block and Lot: Block 19, Lot 3

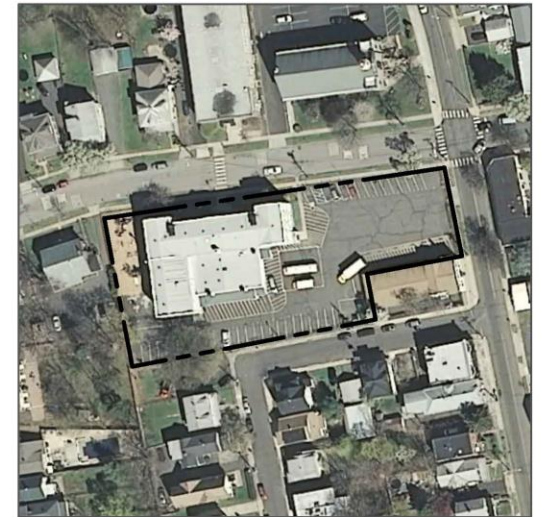
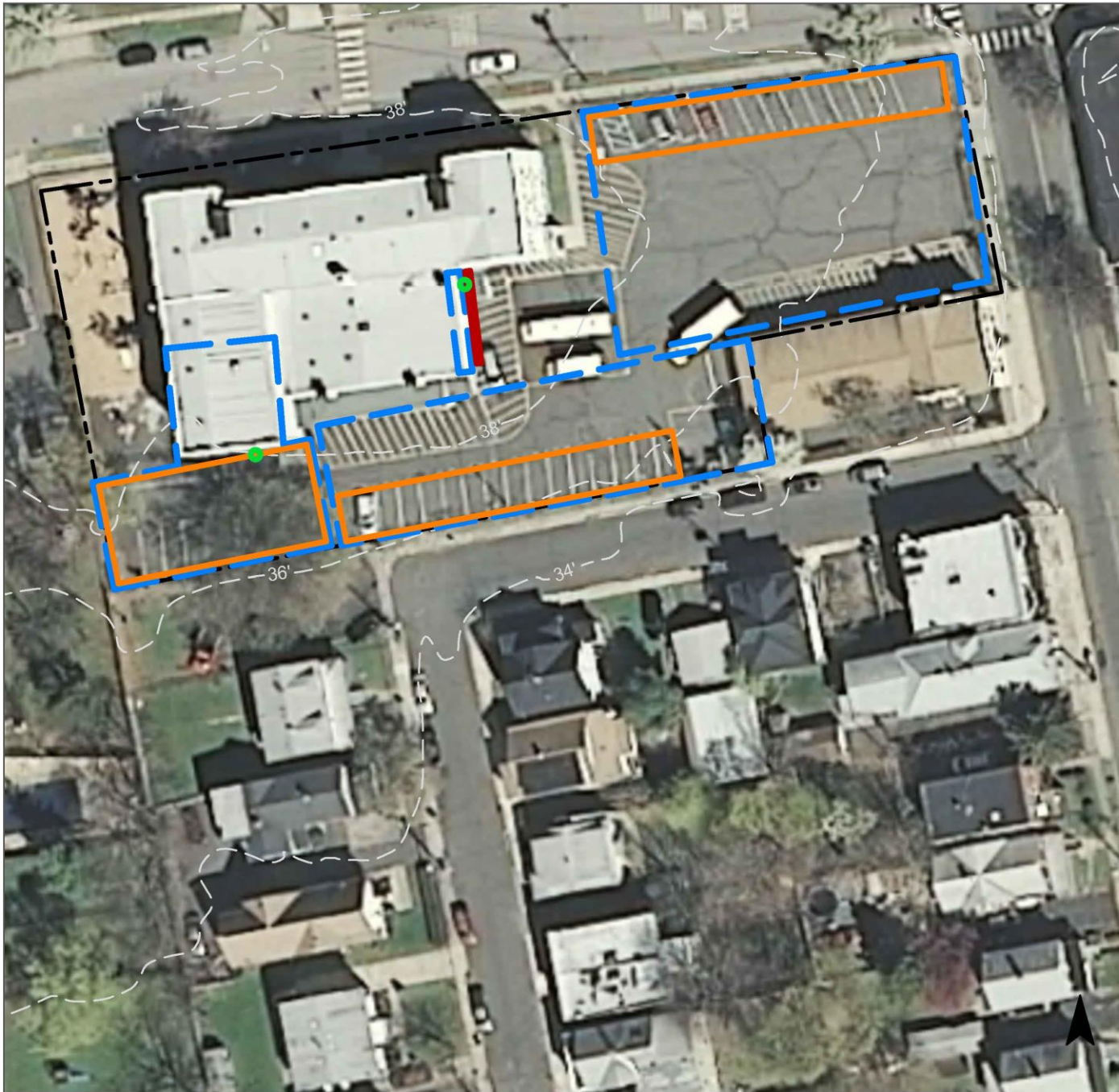


Runoff currently flows into street-side catch basins. Three areas can be replaced with pervious pavement to infiltrate this runoff. A downspout can also be disconnected into a planter box to allow roof runoff to be reused. A preliminary soil assessment suggests that the soils have suitable drainage characteristics 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"
94	46,202	2.2	23.3	212.1	0.036	1.27

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Downspout planter boxes	0.011	2	n/a	n/a	24	\$2,000
Pervious pavements	0.714	120	52,420	1.97	8,358	\$208,950

GREEN INFRASTRUCTURE RECOMMENDATIONS



Lamonte School

-  disconnected downspouts
-  pervious pavements
-  downspout planter boxes
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



MADELINE'S ON VOSELLER



Subwatershed: Lower Raritan River

Site Area: 69,048 sq. ft.

Address: 518 Vosseller Avenue
Bound Brook, NJ 08805

Block and Lot: Block 81, Lot 17

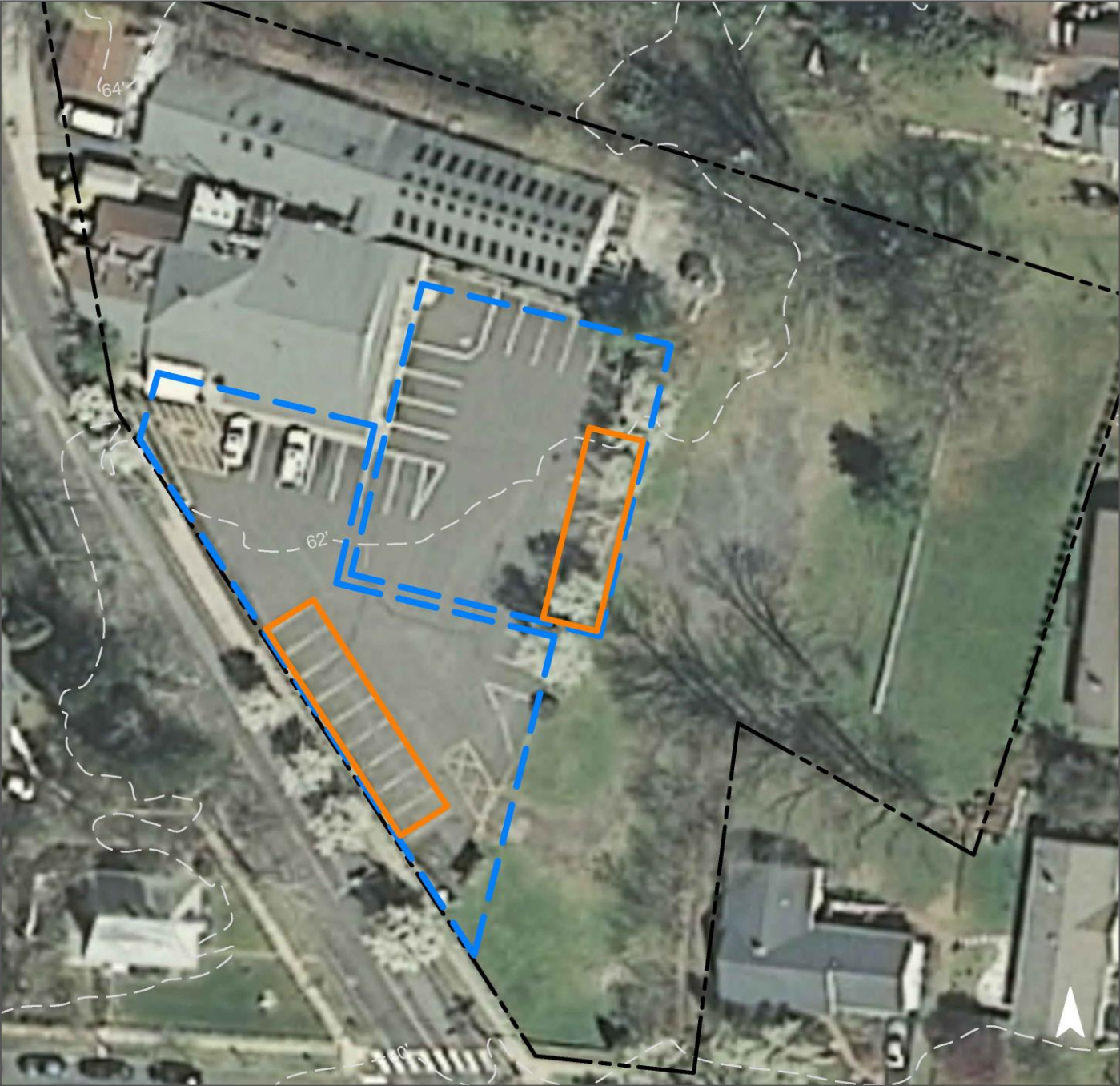


Two catch basins are currently in fair condition. Two rows of parking spaces can be replaced with pervious pavement to infiltrate runoff before it reaches the catch basins. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.





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"
81	56,169	2.7	28.4	257.9	0.044	1.54

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
Pervious pavements	0.457	77	33,533	1.26	2,540	\$63,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



Madeline's On Vosellar

-  pervious pavements
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



ST. MARY OF CZESTOCHOWA



Subwatershed: Lower Raritan River

Site Area: 63,446 sq. ft.

Address: 201 Vosseller Avenue
Bound Brook, NJ 08805

Block and Lot: Block 29, Lot 17

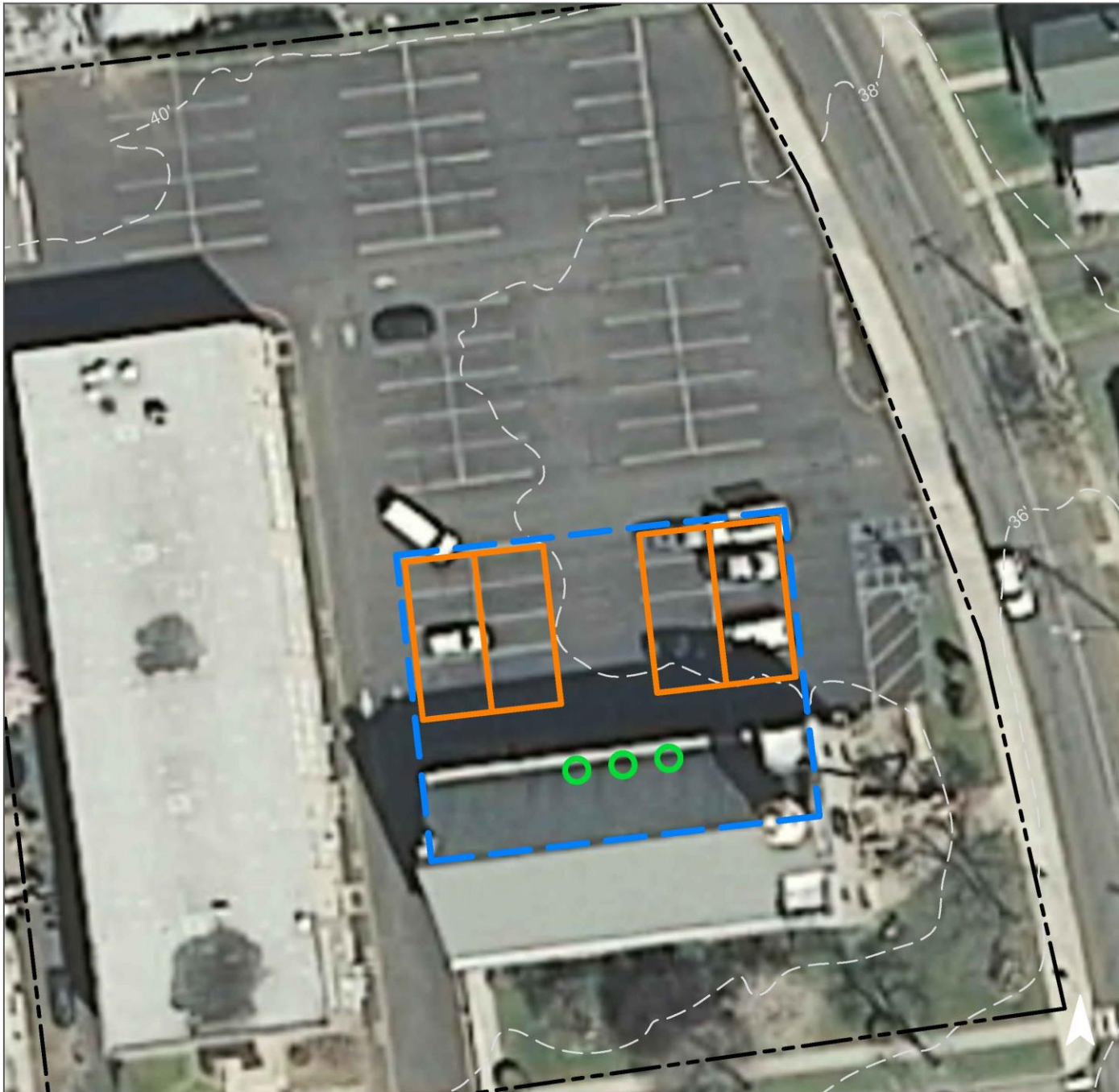


Three downspouts can be disconnected and redirected into pervious pavement to be infiltrated into the ground. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.




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"
95	60,274	2.9	30.4	276.7	0.047	1.65

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavements	0.201	34	14,758	0.55	2,952	\$73,800

GREEN INFRASTRUCTURE RECOMMENDATIONS



St. Mary of Czestochowa

-  disconnected downspouts
-  pervious pavements
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



SHOPRITE SUPERMARKET



Subwatershed: Lower Raritan River

Site Area: 546,079 sq. ft.

Address: 611 W Union Avenue
Bound Brook, NJ 08805

Block and Lot: Block 68, Lot 1.01

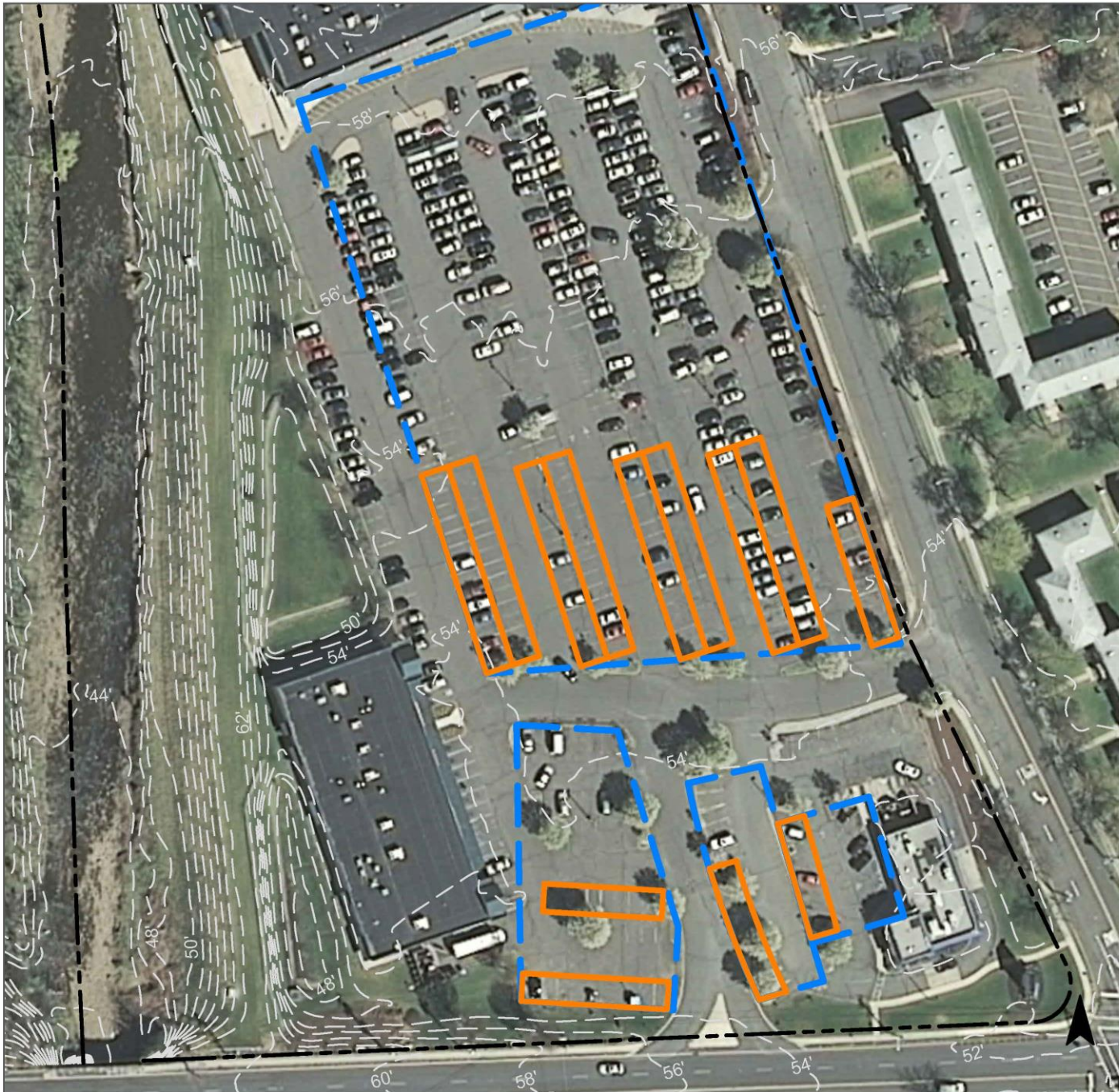


Pervious pavement can be installed in several parking rows to capture and infiltrate runoff. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.





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"
64	347,473	16.8	175.5	1,595.4	0.271	9.53

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 pavements	3.634	608	266,669	10.02	27,177	\$679,425

GREEN INFRASTRUCTURE RECOMMENDATIONS



Shoprite Supermarket

-  pervious pavements
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



SOMERSET COUNTY CULTURAL ARTS



Subwatershed: Lower Raritan River

Site Area: 30,230 sq. ft.

Address: 22 Hamilton Street
Bound Brook, NJ 08805

Block and Lot: Block 12, Lot 10.02



Two rows of parking spaces can be replaced with pervious pavement to infiltrate runoff and curb cuts can allow additional stormwater to be infiltrated. 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"
95	28,718	1.4	14.5	131.9	0.022	0.79

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 pavements	0.454	76	33,301	1.25	3,707	\$92,675

GREEN INFRASTRUCTURE RECOMMENDATIONS



Somerset County Cultural Arts

-  disconnected downspouts
-  pervious pavements
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



UNION AVENUE PHARMACY



Subwatershed: Lower Raritan River

Site Area: 10,636 sq. ft.

Address: 433 West Union Avenue
Bound Brook, NJ 08805

Block and Lot: Block 72, Lot 11

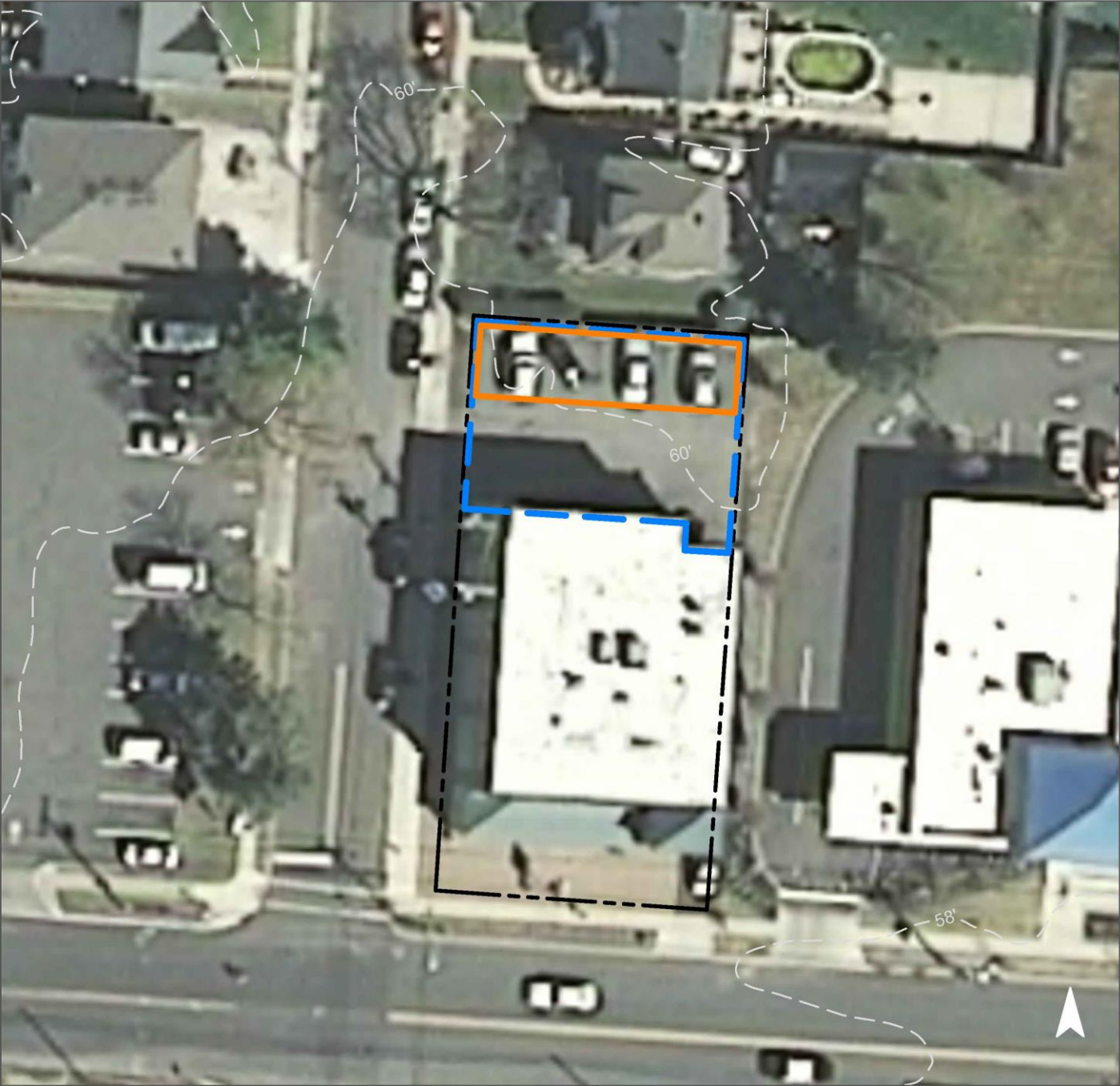


Stormwater is currently directed into street-side catch basins. Parking spaces can be replaced with pervious pavement to capture and infiltrate runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.





Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
95	10,104	0.5	5.1	46.4	0.008	0.28

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 pavements	0.091	15	6,672	0.25	1,270	\$31,750

GREEN INFRASTRUCTURE RECOMMENDATIONS



Union Avenue Pharmacy

-  pervious pavements
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



VAN KEUREN AVENUE RESIDENTIAL PARKING LOT



Subwatershed: Lower Raritan River

Site Area: 21,612 sq. ft.

Address: Van Keuren Avenue
Bound Brook, NJ 08805

Block and Lot: Block 23, Lot 41

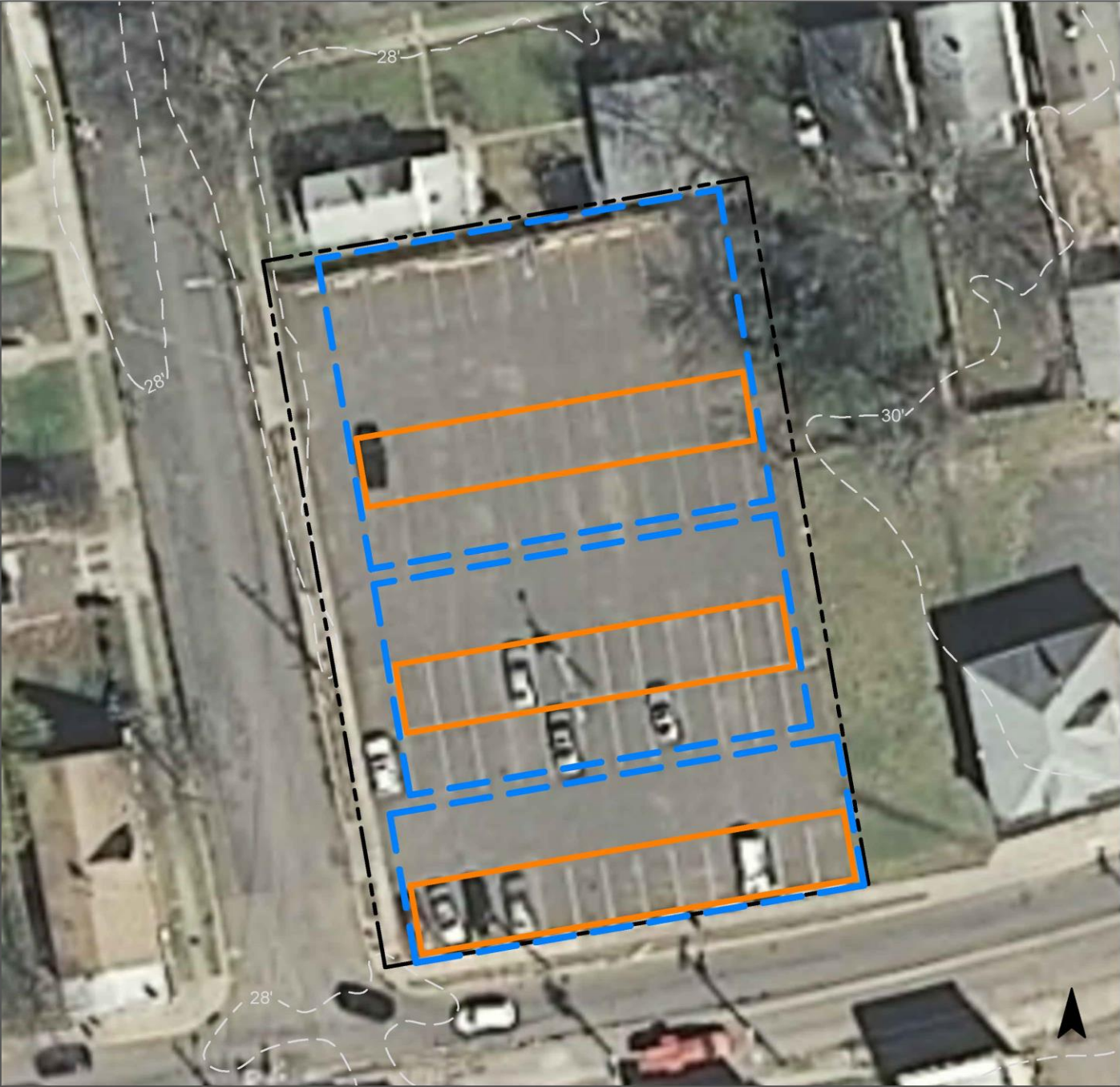


Three rows of parking spaces can be replaced with pervious pavement to infiltrate runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.





Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
100	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
Pervious pavements	0.501	84	36,779	1.38	5,722	\$143,050

GREEN INFRASTRUCTURE RECOMMENDATIONS



Van Keuren Residential Parking Lot

-  pervious pavements
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



WATCHUNG FIRE COMPANY No. 3



Subwatershed: Lower Raritan River

Site Area: 19,019 sq. ft.

Address: 616 Vosseller Avenue
Bound Brook, NJ 08805

Block and Lot: Block 103, Lot 12

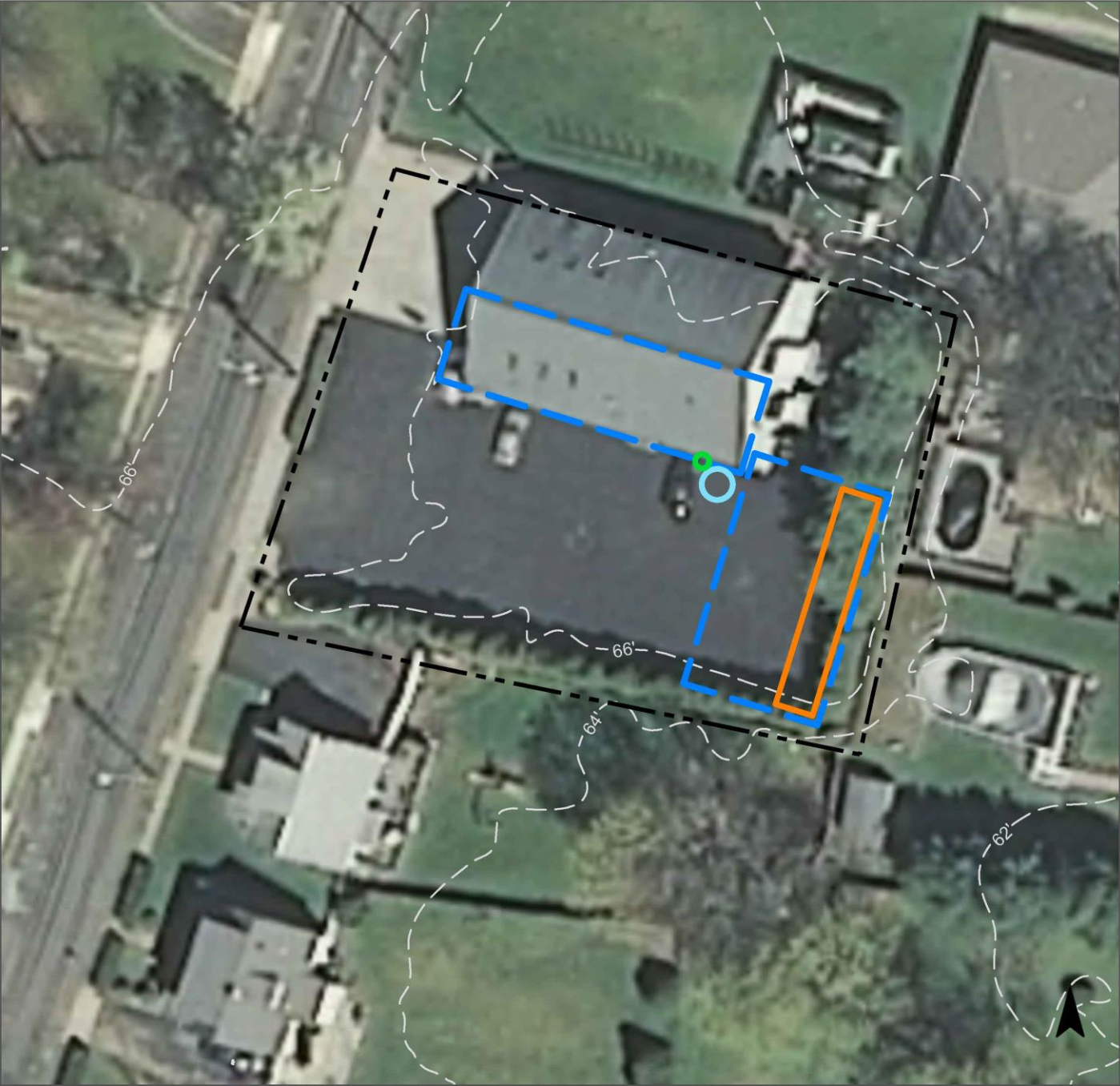


Downspouts can be redirected into a cistern to harvest rainwater to use for washing vehicles. A row of parking spaces can be converted into pervious pavement to infiltrate runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.







Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
35	6,657	0.3	3.4	30.6	0.005	0.18

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 pavements	0.057	9.50	4,166	0.16	590	\$14,750
Rainwater harvesting systems	0.033	5.58	2,000	0.15	2,000 gal.	\$4,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Watchung Fire Company No. 3

-  disconnected downspouts
-  pervious pavements
-  rainwater harvesting
-  drainage areas
-  property line
-  2012 Aerial: NJOIT, OGIS



d. Summary of Existing Conditions

Summary of Existing Site Conditions

Subwatershed/Site Name/Total Site Info/GI Practice	Area (ac)	Area (SF)	Block	Lot	Existing Annual Loads			I.C. %	I.C. Area (ac)	I.C. Area (SF)	Runoff Volumes from I.C.	
					TP (lb/yr)	TN (lb/yr)	TSS (lb/yr)				Water Quality Storm (1.25" over 2-hours) (Mgal)	Annual (Mgal)
GREEN BROOK SUBWATERSHED	15.17	660,836			18.0	189.0	1,718.2		8.59	374,216	0.292	10.26
Bound Brook High School												
Total Site Info	3.26	142,026	76	7	5.8	60.9	554.1	85	2.77	120,680	0.094	3.31
Bound Brook Memorial Library												
Total Site Info	0.36	15,754	12	14	0.7	7.6	68.7	95	0.34	14,966	0.012	0.41
Bound Brook Police Department												
Total Site Info	0.80	34,633	52	1	1.6	16.5	150.3	94	0.75	32,727	0.025	0.90
Gastromed Health Care, P.A.												
Total Site Info	0.84	36,658	87	9	1.5	15.2	138.5	82	0.69	30,163	0.024	0.83
Presbyterian Church												
Total Site Info	1.51	65,904	78	9	2.2	23.2	210.9	70	1.05	45,925	0.036	1.26
Smalley Middle School												
Total Site Info	8.40	365,862	102	31	6.3	65.5	595.8	35	2.98	129,756	0.101	3.56
LOWER RARITAN RIVER SUBWATERSHED	36.43	1,586,969			48.1	504.1	4,582.7		22.91	998,117	0.778	27.38
20-22 Maiden Lane												
Total Site Info	0.23	10,026	11	9	0.5	4.8	43.7	95	0.22	9,524	0.007	0.26
Bound Brook Football Field												
Total Site Info	8.00	348,333	103	13	4.1	42.6	387.7	24	1.94	84,439	0.066	2.32
Bound Brook Hose Compnay No. 1												
Total Site Info	0.06	2,418	1	67	0.1	1.2	10.5	95	0.05	2,297	0.002	0.06
Codrington Park												
Total Site Info	3.85	167,678	44	1	4.3	45.0	409.2	53	2.05	89,129	0.069	2.44

Summary of Existing Site Conditions

Subwatershed/Site Name/Total Site Info/GI Practice	Area (ac)	Area (SF)	Block	Lot	Existing Annual Loads			I.C. %	I.C. Area (ac)	I.C. Area (SF)	Runoff Volumes from I.C.	
					TP (lb/yr)	TN (lb/yr)	TSS (lb/yr)				Water Quality Storm (1.25" over 2-hours) (Mgal)	Annual (Mgal)
Douglas Parking Total Site Info	0.16	7,095	11	5	0.3	3.4	30.9	95	0.15	6,740	0.005	0.18
East High Street Apartment Parking Total Site Info	0.86	37,598	12	2.01	1.7	17.7	160.7	93	0.80	34,999	0.027	0.96
Efinger Sporting Goods Total Site Info	2.93	127,628	69	6	5.8	60.9	553.5	94	2.77	120,561	0.094	3.31
Holy Family Academy and Parish Total Site Info	1.77	77,086	9	3	3.5	37.0	336.2	95	1.68	73,231	0.057	2.01
Lamonte School Total Site Info	1.13	49,038	19	3	2.2	23.3	212.1	94	1.06	46,202	0.036	1.27
Madeline's On Vosellar Total Site Info	1.59	69,048	81	17	2.7	28.4	257.9	81	1.29	56,169	0.044	1.54
St. Mary of Czestochowa Total Site Info	1.46	63,446	29	17	2.9	30.4	276.7	95	1.38	60,274	0.047	1.65
ShopRite Supermarket Total Site Info	12.54	546,079	68	1.01	16.8	175.5	1,595.4	64	7.98	347,473	0.271	9.53
Somerset County Cultural Arts Total Site Info	0.69	30,230	12	10.02	1.4	14.5	131.9	95	0.66	28,718	0.022	0.79
Union Avenue Pharmacy Total Site Info	0.24	10,636	72	11	0.5	5.1	46.4	95	0.23	10,104	0.008	0.28
Van Keuren Avenue Residential Parking Lot Total Site Info	0.50	21,612	23	41	1.0	10.9	99.2	100	0.50	21,600	0.017	0.59
Watchung Fire Company No. 3 Total Site Info	0.44	19,019	103	12	0.3	3.4	30.6	35	0.15	6,657	0.005	0.18

e. Summary of Proposed Green Infrastructure Practices

Summary of Proposed Green Infrastructure Practices

Subwatershed/Site Name/Total Site Info/GI Practice	Potential Management Area		Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Max Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cfs)	Size of BMP (SF)	Unit Cost (\$)	Unit	Total Cost (\$)	I.C. Treated %
	Area (SF)	Area (ac)									
GREEN BROOK SUBWATERSHED	96,497	2.25	2.557	428	176,678	6.64	28,488			\$697,115	25.8%
1 Bound Brook High School											
Bioretention systems/rain gardens	4,687	0.11	0.122	20	8,961	0.34	1,165	5	SF	\$5,825	3.9%
Downspout planter boxes	860	0.02	0.022	4	n/a	n/a	48	1000	SF	\$4,000	0.7%
Pervious pavements	14,699	0.34	0.383	64	28,102	1.06	4,212	25	SF	\$105,300	12.2%
Stormwater planters	2,706	0.06	0.07	12	5,176	0.19	237	100	SF	\$23,700	2.2%
Total Site Info	22,952	0.53	0.60	100	42,240	1.59	5,662			\$138,825	19.0%
2 Bound Brook Memorial Library											
Bioretention systems/rain gardens	1,872	0.04	0.049	8	3,575	0.13	582	5	SF	\$2,910	12.5%
Pervious pavements	3,434	0.08	0.089	15	6,567	0.25	1,809	25	SF	\$45,225	22.9%
Total Site Info	5,306	0.12	0.138	23	10,143	0.38	2,391			\$48,135	35.5%
3 Bound Brook Police Department											
Downspout planter boxes	1,935	0.08	0.093	16	n/a	n/a	108	1000	box	\$9,000	5.9%
Pervious pavements	4,215	0.10	0.110	18	8,056	0.30	1,098	25	SF	\$27,450	12.9%
Total Site Info	6,150	0.18	0.20	34	8,056	0.30	1,206			\$36,450	18.8%
4 Gastromed Health Care, P.A.											
Pervious pavements	15,039	0.35	0.392	66	28,753	1.08	3,034	25	SF	\$75,850	49.9%
Total Site Info	15,039	0.35	0.392	66	28,753	1.08	3,034			\$75,850	49.9%
5 Presbyterian Church											
Bioretention systems/rain gardens	6,158	0.14	0.160	27	11,774	0.44	561	5	SF	\$2,805	13.4%
Downspout planter boxes	1,290	0.03	0.034	6	n/a	n/a	72	1000	box	\$6,000	2.8%
Pervious pavements	5,140	0.12	0.134	22	9,829	0.37	997	25	SF	\$24,925	11.2%
Total Site Info	12,588	0.29	0.328	55	21,602	0.81	1,630			\$33,730	27.4%
6 Smalley Middle School											
Pervious pavements	34,462	0.79	0.898	150	65,884	2.48	14,565	25	SF	\$364,125	26.6%
Total Site Info	34,462	0.79	0.898	150	65,884	2.48	14,565			\$364,125	26.6%

Summary of Proposed Green Infrastructure Practices

Subwatershed/Site Name/Total Site Info/GI Practice	Potential Management Area		Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Max Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cfs)	Size of BMP (SF)	Unit Cost (\$)	Unit	Total Cost (\$)	I.C. Treated %
	Area (SF)	Area (ac)									
LOWER RARITAN RIVER SUBWATERSHED	395,619	9.06	10.288	1,722	749,216	28.25	110,070			\$2,732,420	39.6%
7 20-22 Maiden Lane											
Downspout planter boxes	860	0.02	0.022	4	n/a	n/a	48	1000	box	\$4,000	9.0%
Pervious pavements	2,826	0.06	0.074	12	5,401	0.20	1,000	25	SF	\$25,000	29.7%
Total Site Info	3,686	0.08	0.096	16	5,401	0.20	1,048			\$29,000	38.7%
8 Bound Brook Football Field											
Bioretention systems/rain gardens	880	0.02	0.023	4	1,683	0.06	580	5	SF	\$2,900	1.0%
Pervious pavements	17,907	0.41	0.467	78	34,236	1.29	3,338	25	SF	\$83,450	21.2%
Total Site Info	18,787	0.43	0.490	82	35,919	1.35	3,918			\$86,350	22.2%
9 Bound Brook Hose Company No. 1											
Pervious pavements	411	0.01	0.011	2	758	0.03	250	25	SF	\$6,250	17.9%
Rainwater harvesting systems	700	0.02	0.018	3	650	0.05	650	2	gal	\$1,300	30.5%
Total Site Info	1,111	0.03	0.029	5	1,408	0.08	900			\$7,550	48.4%
10 Codrington Park											
Downspout planter boxes	1,075	0.02	0.028	5	n/a	n/a	60	1000	box	\$5,000	1.2%
Pervious pavements	29,546	0.68	0.770	129	56,489	2.12	29,546	25	SF	\$738,650	33.1%
Stormwater planters	2,177	0.05	0.057	9	4,159	0.16	760	100	SF	\$76,000	2.4%
Total Site Info	32,798	0.75	0.855	143	60,648	2.28	30,366			\$819,650	36.8%
11 Douglas Parking											
Pervious pavements	6,351	0.15	0.165	28	12,140	0.46	1,053	25	SF	\$26,325	94.2%
Total Site Info	6,351	0.15	0.165	28	12,140	0.46	1,053			\$26,325	94.2%
12 East High Street Apartment Parking											
Pervious pavements	17,197	0.39	0.448	75	32,875	1.24	4,559	25	SF	\$113,975	49.1%
Total Site Info	17,197	0.39	0.448	75	32,875	1.24	4,559			\$113,975	49.1%
13 Efinger Sporting Goods											
Pervious pavements	45,691	1.05	1.190	199	87,351	3.28	7,542	25	SF	\$188,550	37.9%
Total Site Info	45,691	1.05	1.190	199	87,351	3.28	7,542			\$188,550	37.9%

Summary of Proposed Green Infrastructure Practices

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	Area (SF)	Area (ac)									
14 Holy Family Academy and Parish											
Bioretention systems/rain gardens	2,937	0.07	0.077	13	5,617	0.21	574	5	SF	\$2,870	4.0%
Pervious pavements	30,105	0.69	0.784	131	57,559	2.16	5,770	25	SF	\$144,250	41.1%
Total Site Info	33,042	0.76	0.861	144	63,176	2.37	6,344			\$147,120	45.1%
15 Lamonte School											
Downspout planter boxes	430	0.01	0.011	2	n/a	n/a	24	1000	box	\$2,000	0.9%
Pervious pavements	27,418	0.63	0.714	120	52,420	1.97	8,358	25	SF	\$208,950	59.3%
Total Site Info	27,848	0.64	0.726	121	52,420	1.97	8,382			\$210,950	60.3%
16 Madeline's On Vosellar											
Pervious pavements	17,541	0.40	0.457	77	33,533	1.26	2,540	25	SF	\$63,500	31.2%
Total Site Info	17,541	0.40	0.457	77	33,533	1.26	2,540			\$63,500	31.2%
17 St. Mary of Czestochowa											
Pervious pavements	7,719	0.18	0.201	34	14,758	0.55	2,952	25	SF	\$73,800	12.8%
Total Site Info	7,719	0.18	0.201	34	14,758	0.55	2,952			\$73,800	12.8%
18 ShopRite Supermarket											
Pervious pavements	139,484	3.20	3.634	608	266,669	10.02	27,177	25	SF	\$679,425	40.1%
Total Site Info	139,484	3.20	3.634	608	266,669	10.02	27,177			\$679,425	40.1%
19 Somerset County Cultural Arts											
Pervious pavements	17,417	0.40	0.454	76	33,301	1.25	3,707	25	SF	\$92,675	60.6%
Total Site Info	17,417	0.40	0.454	76	33,301	1.25	3,707			\$92,675	60.6%
20 Union Avenue Pharmacy											
Pervious pavements	3,489	0.08	0.091	15	6,672	0.25	1,270	25	SF	\$31,750	34.5%
Total Site Info	3,489	0.08	0.091	15	6,672	0.25	1,270			\$31,750	34.5%
21 Van Keuren Avenue Residential Parking Lot											
Pervious pavements	19,238	0.44	0.501	84	36,779	1.38	5,722	25	SF	\$143,050	89.1%
Total Site Info	19,238	0.44	0.501	84	36,779	1.38	5,722			\$143,050	89.1%

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	Area (SF)	Area (ac)									
22 Watchung Fire Company No. 3											
Pervious pavements	2,178	0.05	0.057	9.50	4,166	0.16	590	25	SF	\$14,750	32.7%
Rainwater harvesting systems	2,042	0.03	0.033	5.58	2,000	0.15	2,000	2	gal	\$4,000	30.7%
Total Site Info	4,220	0.08	0.090	15.08	6,166	0.31	2,590			\$18,750	63.4%