RUTGERS
New Jersey Agricultural
Experiment Station

Draft

Impervious Cover Reduction Action Plan for North Plainfield Borough, Somerset County, New Jersey

Prepared for North Plainfield Borough by the
Rutgers Cooperative Extension Water Resources Program

October 9, 2015

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Introduction

Located in Somerset County in central New Jersey, North Plainfield Borough covers approximately 2.82 square miles north of Plainfield Township. Figures 1 and 2 illustrate that North Plainfield Borough is dominated by urban land uses. A total of 69.8% of the municipality's land use is classified as urban. Of the urban land in North Plainfield 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 North Plainfield 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 North Plainfield Borough. Based upon the 2007 NJDEP land use/land cover data, approximately 33.2% of North Plainfield Borough has impervious cover. This level of impervious cover suggests that the streams in North Plainfield Borough are likely non-supporting streams.[1]

Methodology

North Plainfield Borough contains portions of two subwatersheds (Figure 4). 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.

[1] Caraco, D., R. Claytor, P. Hinkle, H. Kwon, T. Schueler, C. Swann, S. Vysotsky, and J. Zielinski. 1998. Rapid Watershed Planning Handbook. A Comprehensive Guide for Managing Urbanizing Watersheds. Prepared by Center For Watershed Protection, Ellicott City, MD. Prepared for U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds and Region V. October 1998

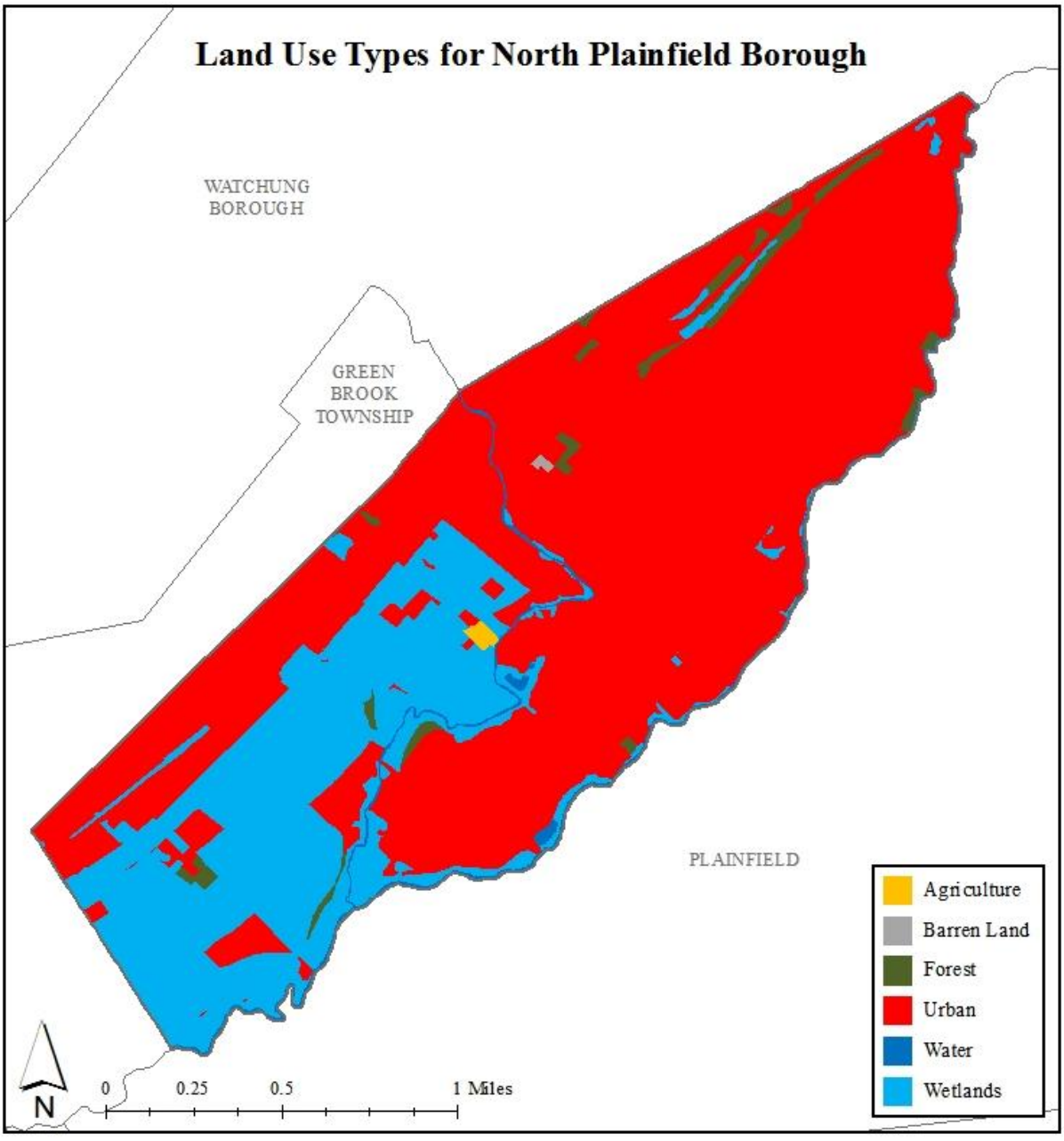


Figure 1: Map illustrating the land use in North Plainfield Borough

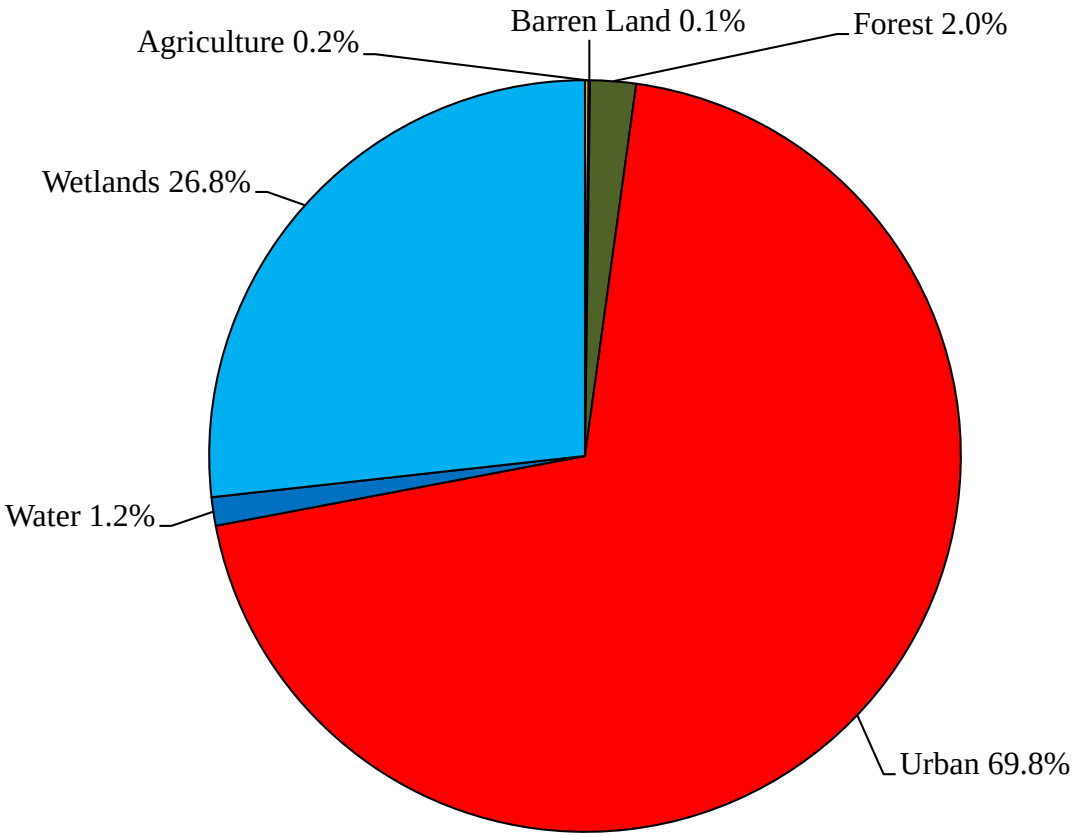


Figure 2: Pie chart illustrating the land use in North Plainfield Borough

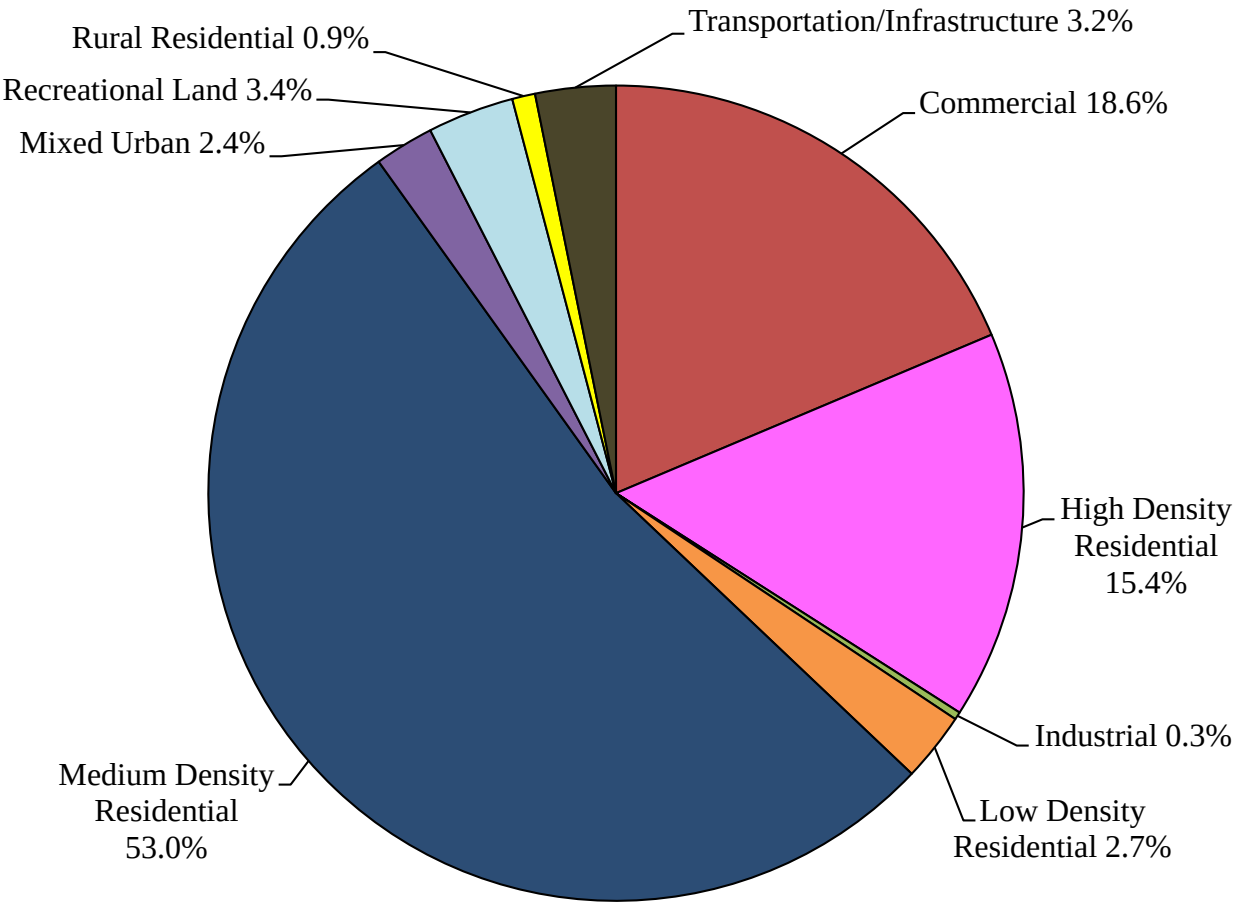


Figure 3: Pie chart illustrating the various types of urban land use in North Plainfield Borough

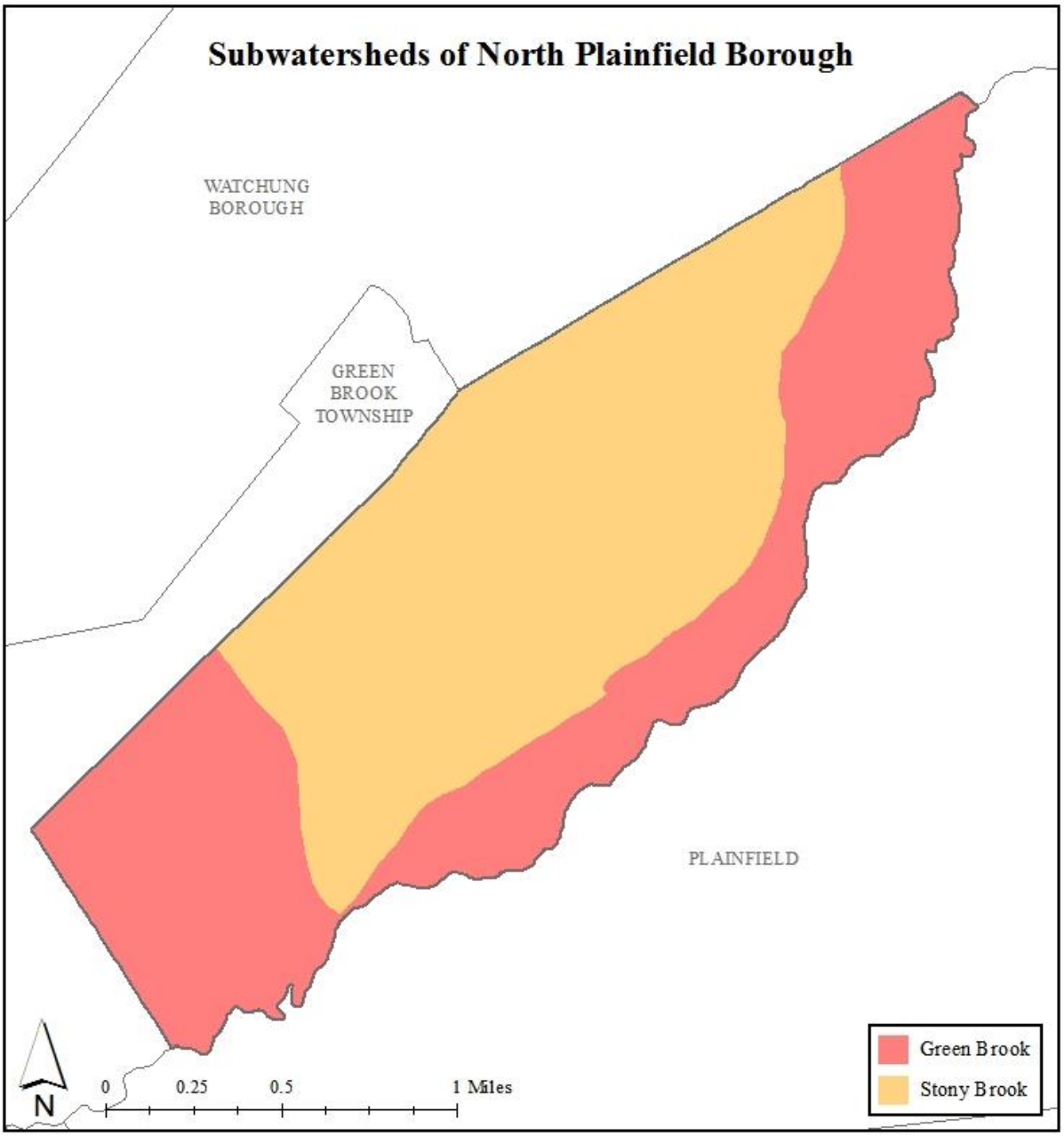


Figure 4: Map of the subwatersheds in North Plainfield Borough

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 North Plainfield 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 Coefficients[2]

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

[2] 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 benefits[3]. A wide range of green infrastructure practices have been evaluated for the potential project sites in North Plainfield 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.




[3] 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

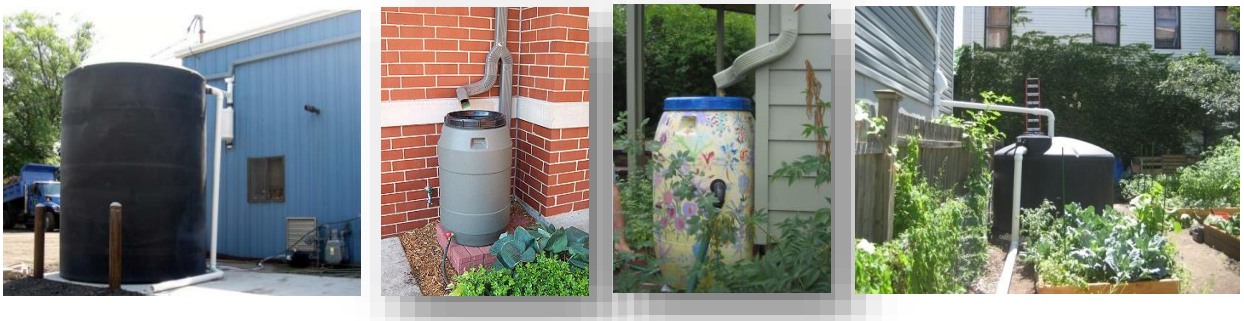
These are landscaped features that are designed to capture, treat, and infiltrate stormwater runoff. These systems can easily be incorporated into existing landscapes, improving aesthetics and creating a wildlife habitat while managing stormwater runoff. Bioretention systems also can be used in soils 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. [4]

[4] 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*.

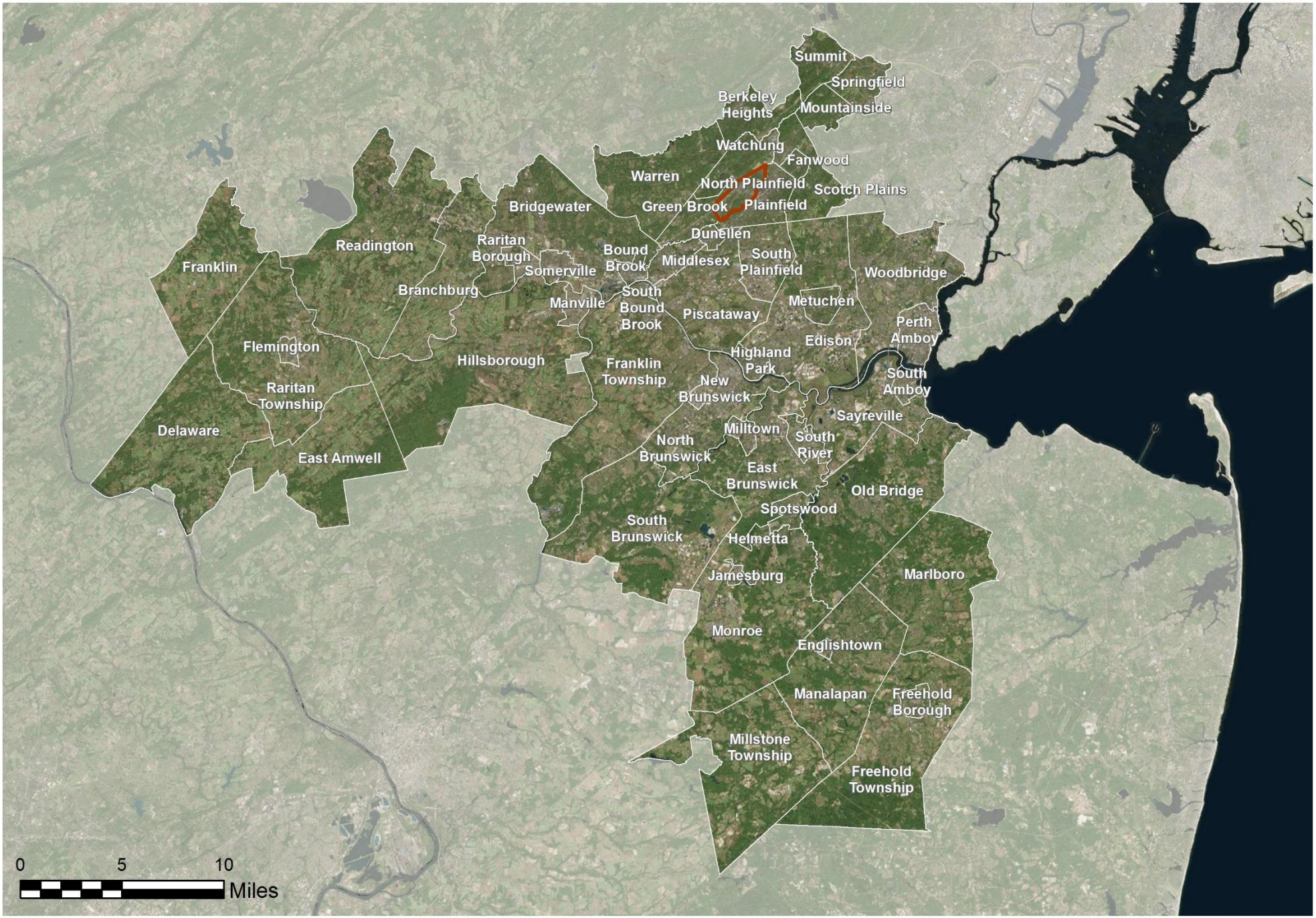
Conclusion

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.

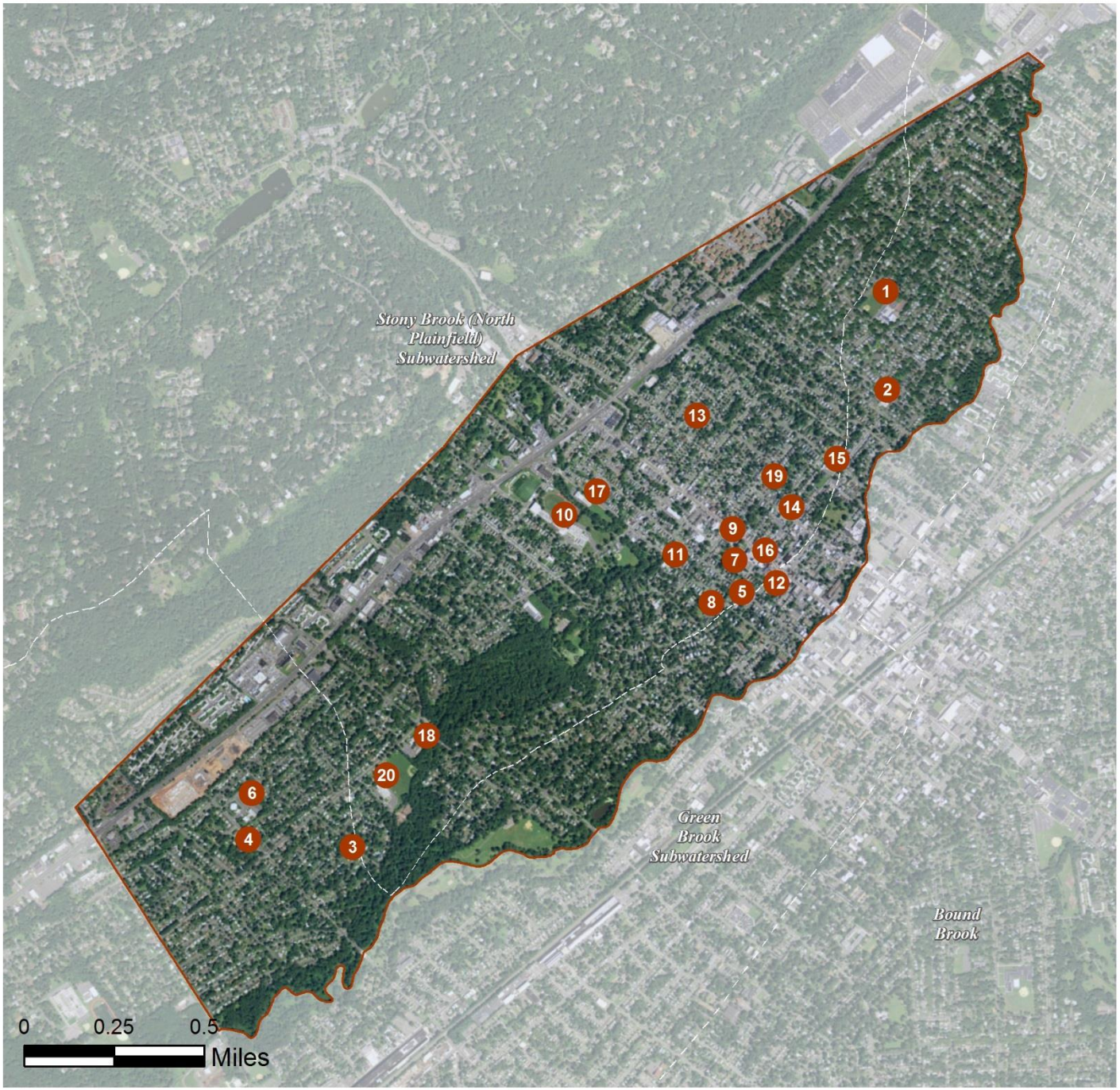
a. Overview Map of the Project

NORTH PLAINFIELD: CLIMATE RESILIENT GREEN INFRASTRUCTURE FOR THE RARITAN BASIN



b. Green Infrastructure Sites

NORTH PLAINFIELD: GREEN INFRASTRUCTURE SITES



SITES WITHIN THE GREEN BROOK SUBWATERSHED:

1. East End Elementary School
2. Hydewood Park Baptist Church
3. North Plainfield Baptist Church
4. North Plainfield Recreation
5. Saints Basilios-Gregorios Orthodox Church
6. Saint Luke Roman Catholic Church

SITES WITHIN THE STONY BROOK SUBWATERSHED:

7. Church of God of Prophecy
8. Church of the Holy Cross
9. North Plainfield High School
10. North Plainfield Library
11. North Plainfield Municipal Building
12. North Plainfield Rescue Squad
13. North Plainfield School District
14. Saint Joseph Church and Parish Center
15. Somerset Hills School
16. Somerset Intermediate School
17. Stony Brook Elementary School
18. The Sundance School
19. Watchung Avenue Presbyterian Church
20. West End Elementary School

c. Proposed Green Infrastructure Concepts

EAST END ELEMENTARY SCHOOL

Subwatershed: Green Brook

Site Area: 291,539 sq. ft.

Address: 170 Oneida Avenue
North Plainfield, NJ 07060

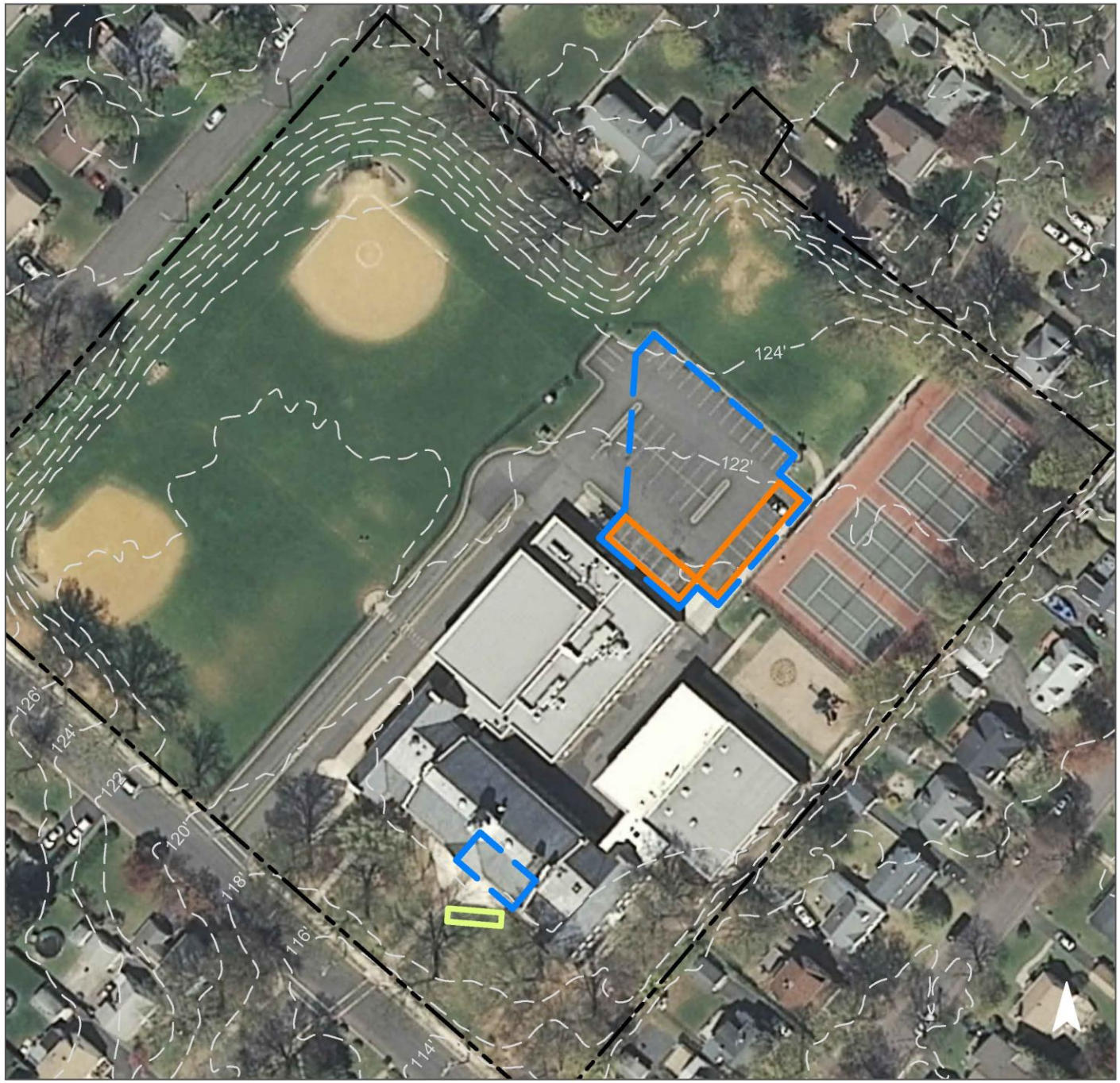
Block and Lot: Block 15.01, Lot 1

A rain garden can be to capture, treat, and infiltrate roof runoff from two downspouts by disconnecting and redirecting them. Parking spaces can also be replaced with pervious pavement to infiltrate parking lot 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"
49	142,637	6.9	72.0	654.9	0.111	3.91

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	0.030	5	2,222	0.08	363	$1,816
Pervious pavements	0.357	60	26,180	0.98	2,601	$65,025

GREEN INFRASTRUCTURE RECOMMENDATIONS



East End Elementary School

- bioretention / rain gardens
- pervious pavements
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 50' 100'

HYDEWOOD PARK BAPTIST CHURCH

Subwatershed: Green Brook

Site Area: 49,789 sq. ft.

Address: 100 Norwood Avenue
North Plainfield, NJ 07060

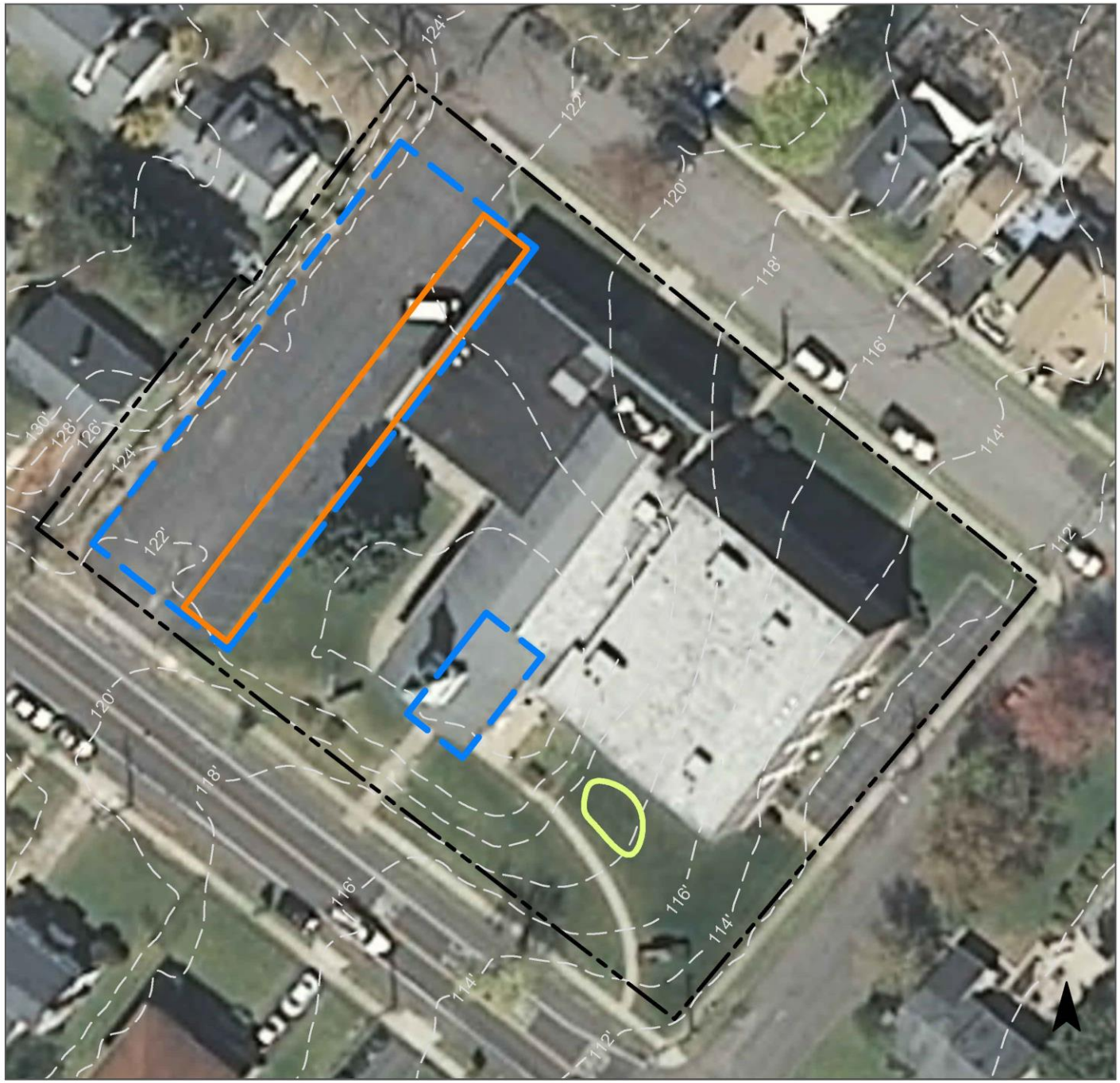
Block and Lot: Block 21.02, Lot 14.01;14.02

Parking spaces can be replaced with porous asphalt to capture and infiltrate stormwater runoff from the parking lot. A rain garden can also be installed in front of the church to capture, treat, and infiltrate roof runoff from a downspout. 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"
59	29,470	1.4	14.9	135.3	0.023	0.81

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	0.025	4	1,870	0.07	306	$1,528
Pervious pavements	0.244	41	17,870	0.67	2,915	$72,877

GREEN INFRASTRUCTURE RECOMMENDATIONS



Hydewood Park Baptist Church

- pervious pavements
- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 25' 50'

NORTH PLAINFIELD BAPTIST CHURCH

Subwatershed: Green Brook

Site Area: 14,544 sq. ft.

Address: 543 Rockview Avenue
North Plainfield, NJ 07063

Block and Lot: Block 177, Lot 11

Rain gardens can be installed on the northeast and on the southwest sides of the church to capture, treat, and infiltrate runoff from the roof. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
33	4,740	0.2	2.4	21.8	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 systems	0.047	8	3,478	0.13	569	$2,846

GREEN INFRASTRUCTURE RECOMMENDATIONS

North Plainfield Baptist Church

- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 20' 40'

NORTH PLAINFIELD RECREATION

Subwatershed: Green Brook

Site Area: 186,041 sq. ft.

Address: 614 Greenbrook Road
North Plainfield, NJ 07063

Block and Lot: Block 199.01, Lot 1

Gutters and downspouts can be installed on the west building, so that roof runoff can be directed into rain gardens. A third rain garden can be installed to capture, treat, and infiltrate runoff from the parking lot on the east side of the property. 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"
29	54,120	2.6	27.3	248.5	0.042	1.48

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.102	17	7,495	0.28	1,000	$5,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

North Plainfield Recreation

- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 25' 50'

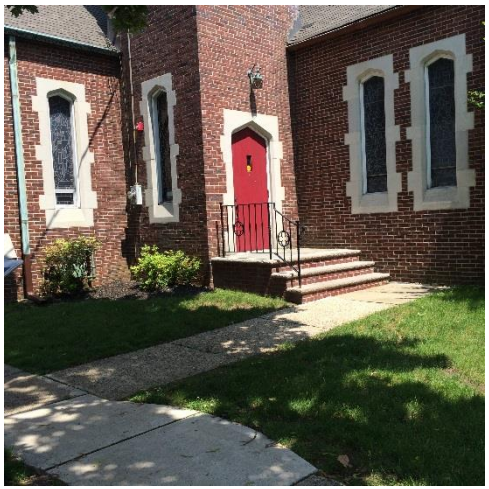
SAINTS BASILIOS-GREGORIOS ORTHODOX CHURCH

Subwatershed: Green Brook

Site Area: 12,693 sq. ft.

Address: 9 Mercer Avenue
North Plainfield, NJ 07060

Block and Lot: Block 95, Lot 1.01

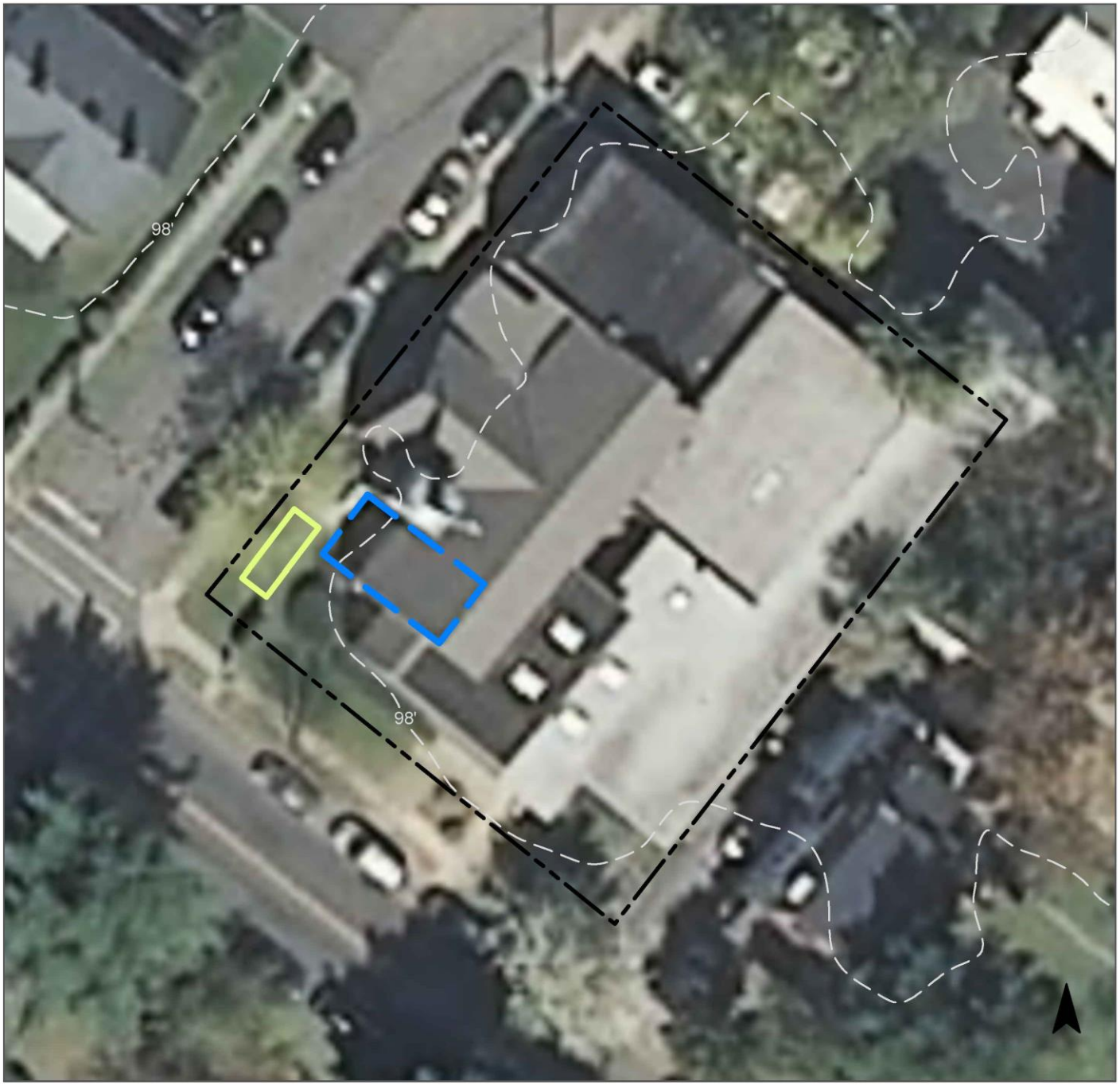


A bioretention system can be installed in front of the church in the southwest corner to capture, treat, and infiltrate stormwater runoff. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

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"
58	7,384	0.4	3.7	33.9	0.006	0.20

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	0.011	2	800	0.03	102	$510

GREEN INFRASTRUCTURE RECOMMENDATIONS



Saints Basilios-Gregorios Orthodox Church

- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 15' 30'

SAINT LUKE ROMAN CATHOLIC CHURCH

Subwatershed: Green Brook

Site Area: 231,715 sq. ft.

Address: 300 Clinton Avenue
North Plainfield, NJ 07063

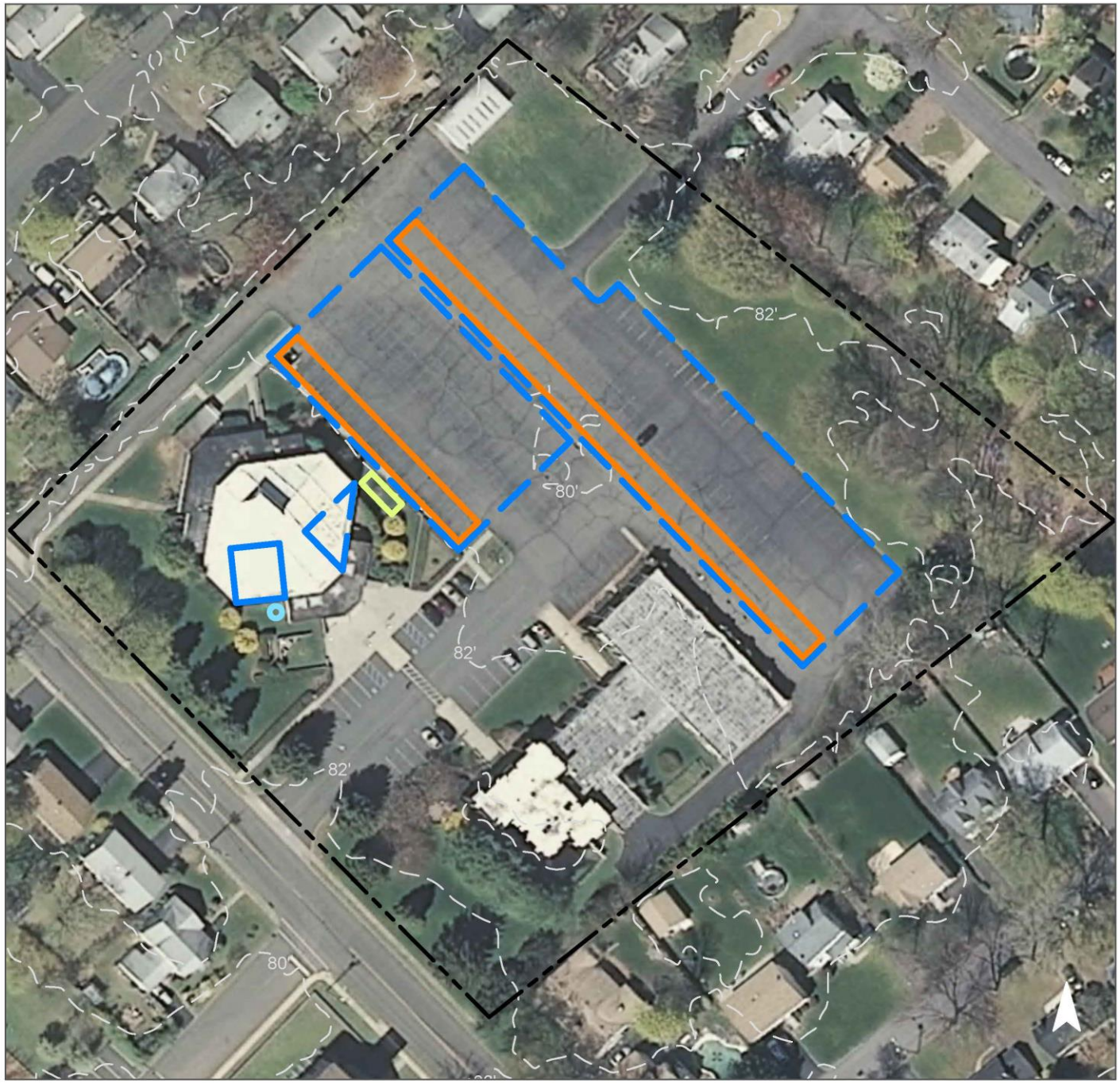
Block and Lot: Block 203, Lot 12

Parking spaces can be converted into pervious pavement to infiltrate parking lot runoff. A rain garden can also capture, treat and infiltrate roof runoff, and rain water can be harvested from an additional downspout. 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"
62	144,620	7.0	73.0	664.0	0.113	3.97

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	0.021	4	1,556	0.06	255	$1,274
Pervious pavements	1.310	219	96,148	3.61	9,924	$248,100
Rainwater harvesting systems	0.029	5	1,000	0.08	1,000 (gal)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Saint Luke Roman Catholic Church

- rainwater harvesting
- pervious pavements
- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 50' 100'

CHURCH OF GOD OF PROPHECY

Subwatershed: Stony Brook

Site Area: 29,092 sq. ft.

Address: 18 Park Place
North Plainfield, NJ 07060

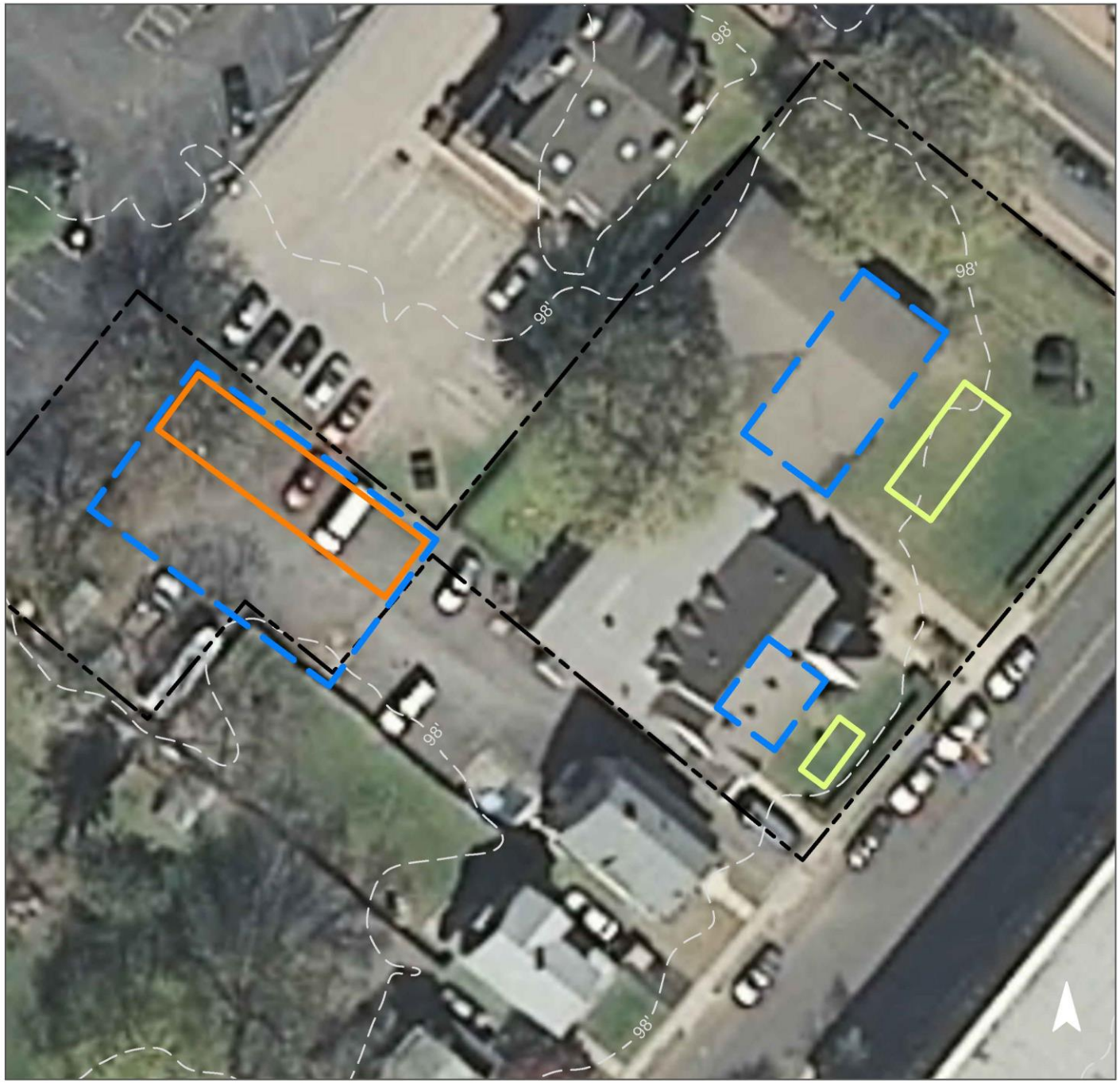
Block and Lot: Block 97, Lot 12

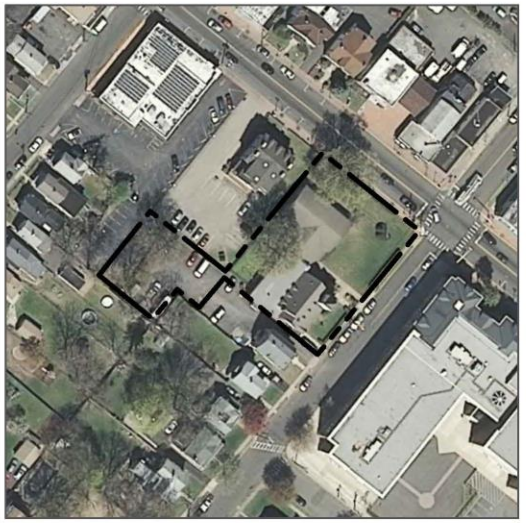
Parking spaces can be replaced with pervious pavement to capture and infiltrate stormwater. Two rain gardens can also be built in front of the church to capture, treat, and infiltrate runoff from the roof. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
84	24,352	1.2	12.3	111.8	0.019	0.67

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	0.048	8	3,553	0.13	619	$3,095
Pervious pavements	0.096	16	7,076	0.27	1,332	$33,293

GREEN INFRASTRUCTURE RECOMMENDATIONS





Church of God of Prophecy

- drainage areas
- pervious pavements
- bioretention / rain gardens
- 2012 Aerial: NJOIT, OGIS

0 20' 40'

CHURCH OF THE HOLY CROSS

Subwatershed: **Stony Brook**

Site Area: **114,712 sq. ft.**

Address: **40 Mercer Avenue**
North Plainfield, NJ 07063

Block and Lot: **Block 138, Lot 1;3**

This property has many disconnected downspouts that release runoff onto the turf grass. Rain gardens can be installed in the back and front of the church to capture, treat, and infiltrate this 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"
43	48,858	2.4	24.7	224.3	0.038	1.34

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	0.053	9	3,875	0.15	619	$3,095

GREEN INFRASTRUCTURE RECOMMENDATIONS

Church of the Holy Cross

- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 25' 50'

NORTH PLAINFIELD HIGH SCHOOL

Subwatershed: Stony Brook

Site Area: 654,835 sq. ft.

Address: 34 Wilson Avenue
North Plainfield, NJ 07063

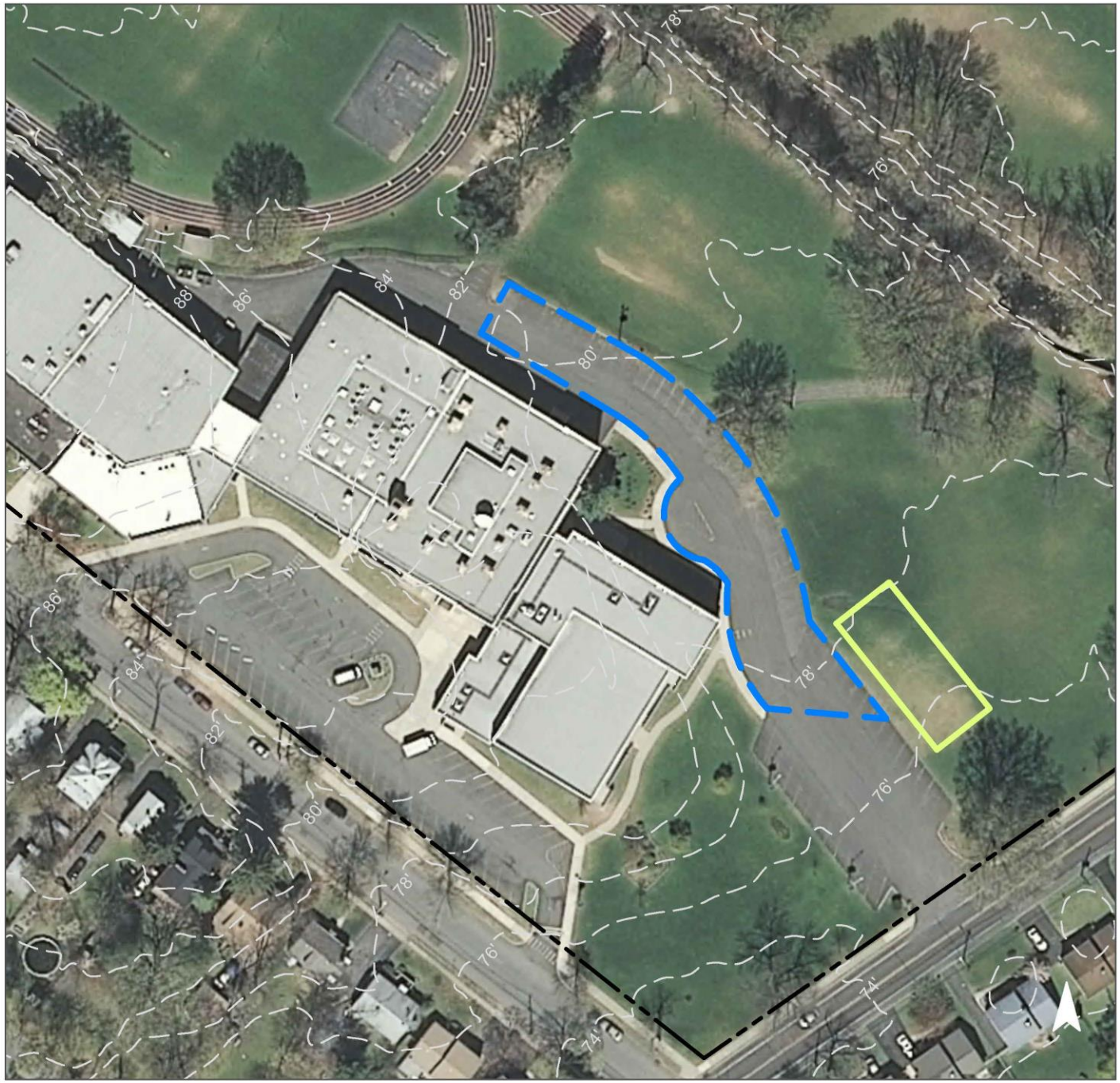
Block and Lot: Block 130, Lot 1.01

A rain garden can be installed to capture, treat, 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"
35	227,656	11.0	115.0	1,045.3	0.177	6.24

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	0.453	76	33,211	1.25	4,642	$23,210

GREEN INFRASTRUCTURE RECOMMENDATIONS



North Plainfield High School

- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 50' 100'

NORTH PLAINFIELD LIBRARY

Subwatershed: Stony Brook

Site Area: 37,276 sq. ft.

Address: 6 Rockview Avenue
North Plainfield, NJ 07060

Block and Lot: Block 131, Lot 25

Parking spaces can be converted into pervious pavement to capture and infiltrate runoff before it flows into the stream behind the library. Stormwater planters can also be installed in front of the library to intercept stormwater from the roadway. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
78	29,083	1.4	14.7	133.5	0.023	0.80

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavements	0.198	33	14,556	0.55	1,854	$46,350
Stormwater planters	0.039	7	2,865	0.11	580	$58,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

North Plainfield Library

- pervious pavements
- stormwater planters
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 25' 50'

NORTH PLAINFIELD MUNICIPAL BUILDING

Subwatershed: Stony Brook

Site Area: 30,451 sq. ft.

Address: 263 Somerset Street
North Plainfield, NJ 07060

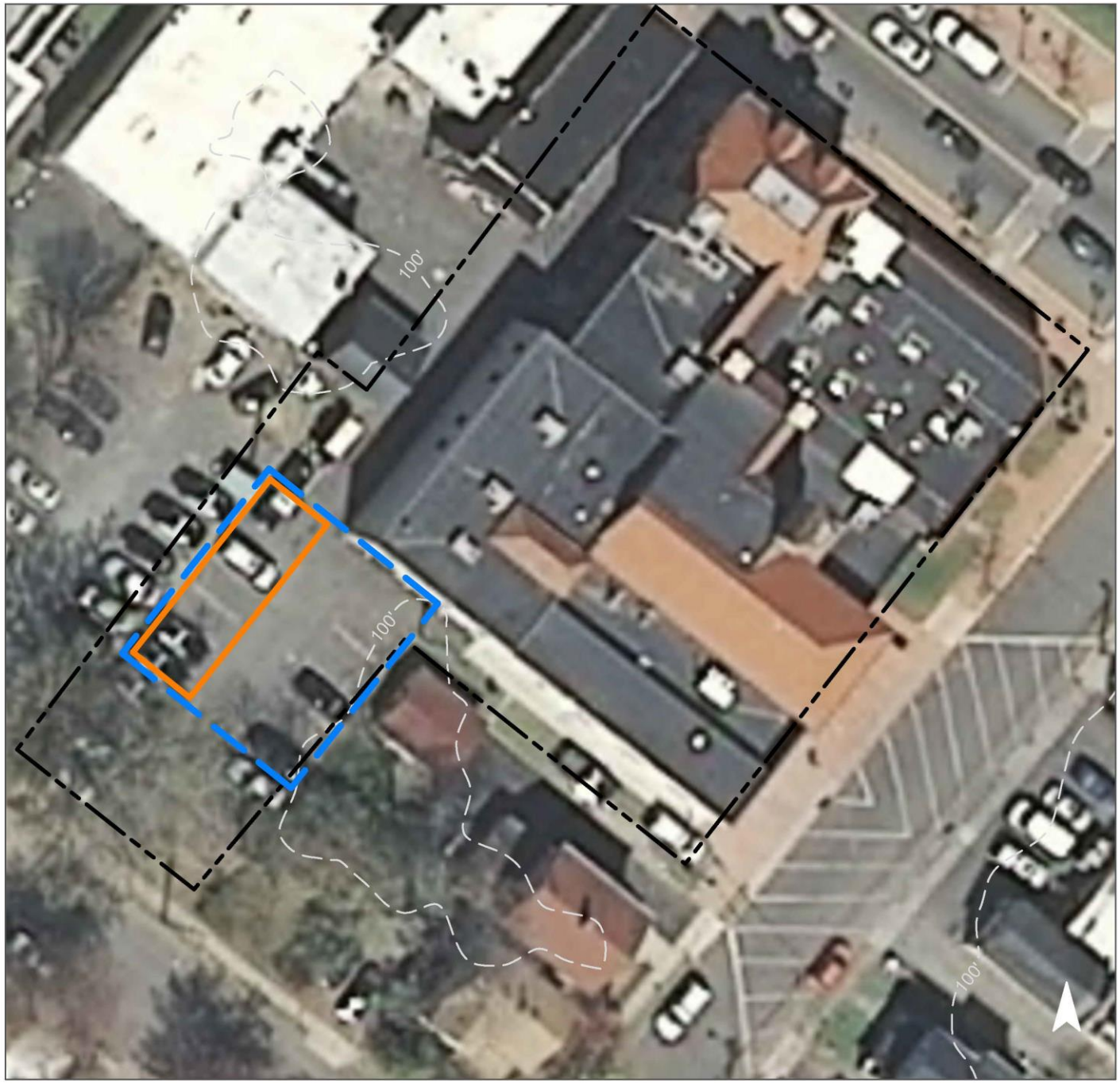
Block and Lot: Block 93, Lot 6

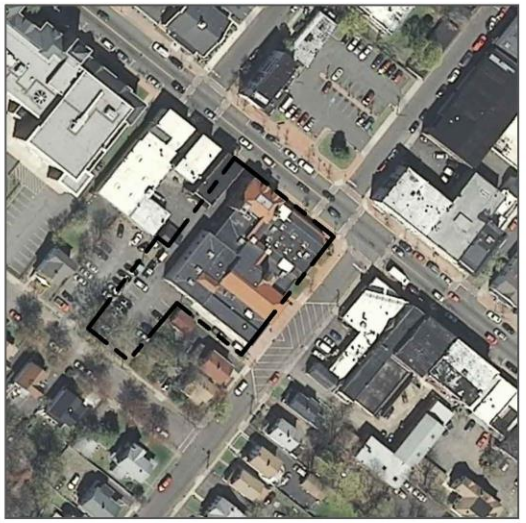
Parking spaces can be converted into pervious pavements to store stormwater runoff and allow it to slowly seep into the ground. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

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"
85	25,884	1.2	13.1	118.8	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
Pervious pavements	0.091	15	6,695	0.25	1,103	$27,575

GREEN INFRASTRUCTURE RECOMMENDATIONS





North Plainfield Municipal Building

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

0 20' 40'

NORTH PLAINFIELD RESCUE SQUAD

Subwatershed: Stony Brook

Site Area: 10,677 sq. ft.

Address: 334 Somerset Street
North Plainfield, NJ 07060

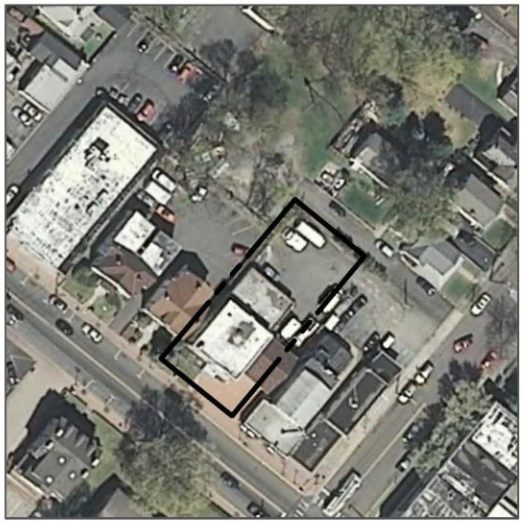
Block and Lot: Block 80, Lot 26

A cistern can be installed to harvest rainwater from the roof, and harvested water can be used to wash rescue vehicles. The downspout in front of the rescue squad can also be redirected into a rain garden to capture, treat, and infiltrate runoff from the roof. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
87	9,327	0.4	4.7	42.8	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
Bioretention systems	0.011	2	830	0.03	39	$195
Rainwater harvesting systems	0.010	2	350	0.03	350 (gal)	$700

GREEN INFRASTRUCTURE RECOMMENDATIONS



North Plainfield Rescue Squad

- bioretention / rain gardens
- rainwater harvesting
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 20' 40'

NORTH PLAINFIELD SCHOOL DISTRICT

Subwatershed: **Stony Brook**

Site Area: **29,661 sq. ft.**

Address: **33 Mountain Avenue**
North Plainfield, NJ 07061

Block and Lot: **Block 55, Lot 3**

Two bioretention systems can be installed to capture, treat, and infiltrate rooftop runoff by disconnecting and directing downspouts. 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"
50	14,699	0.7	7.4	67.5	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 systems	0.034	6	2,476	0.09	405	$2,025

GREEN INFRASTRUCTURE RECOMMENDATIONS

North Plainfield School District

- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 20' 40'

SAINT JOSEPH CHURCH AND PARISH CENTER

Subwatershed: Stony Brook

Site Area: 48,432 sq. ft.

Address: Corner of Wachung Avenue & Jackson Avenue North Plainfield, 07060

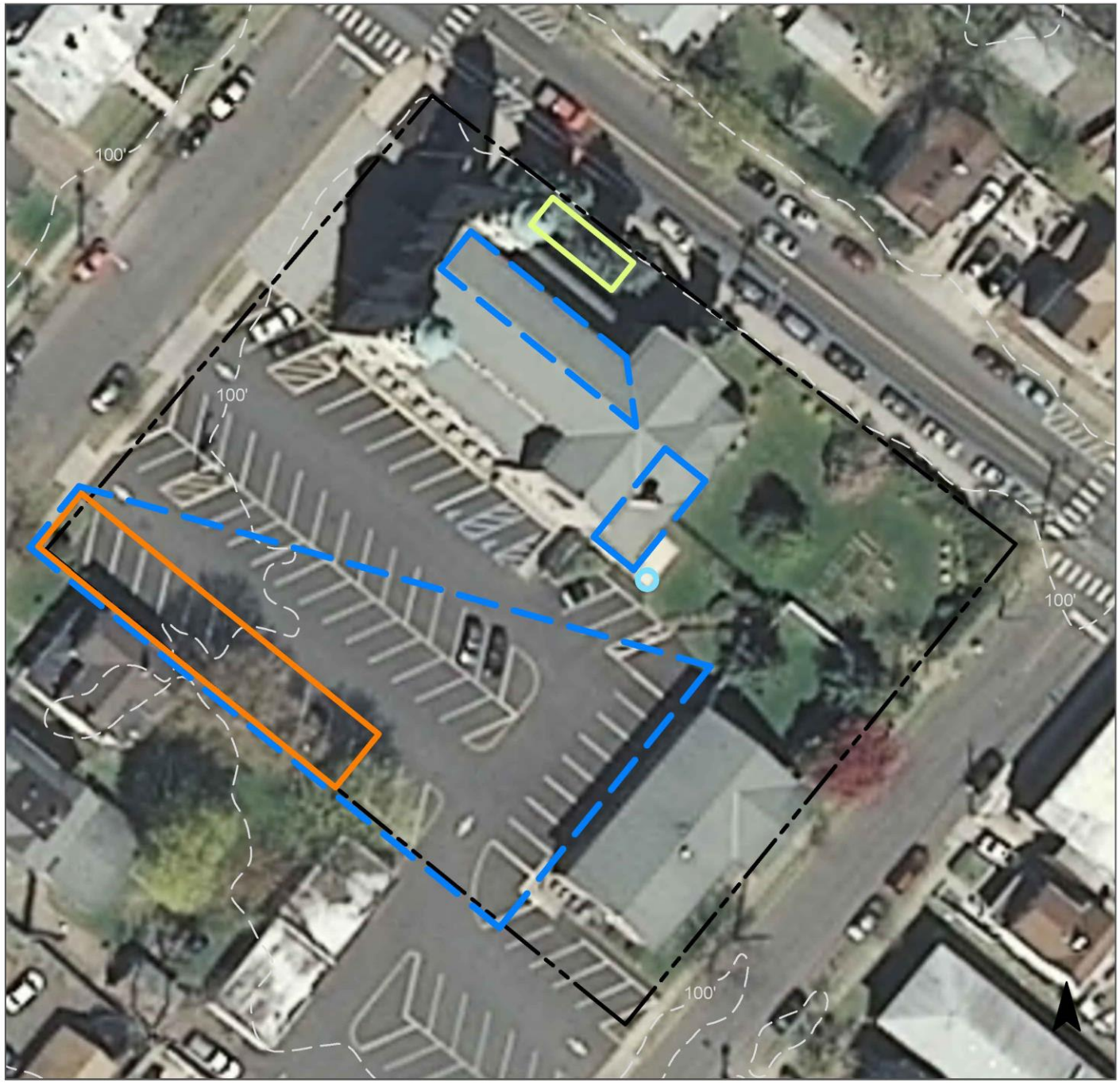
Block and Lot: Block 81, Lot 8; 9; 10

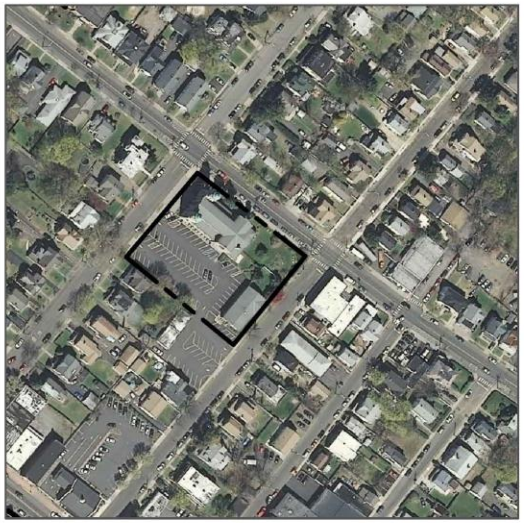
A rain garden can be installed in front of the church to capture, treat, and infiltrate runoff from the roof by disconnecting two downspouts. Parking spaces can also be replaced with porous asphalt to infiltrate parking lot runoff. A cistern can also be installed near the Faith Garden, which would harvest rainwater from the roof to be used in the garden. 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"
89	43,156	2.1	21.8	198.1	0.034	1.18

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
Bioretention systems	0.030	5	2,222	0.85	390	$1,950
Pervious pavements	0.350	59	25,716	0.97	2,813	$70,335
Rainwater harvesting systems	0.016	3	600	0.05	600 (gal)	$1,200

GREEN INFRASTRUCTURE RECOMMENDATIONS





Saint Joseph Church and Parish Center

- rainwater harvesting
- drainage areas
- bioretention / rain gardens
- pervious pavements
- 2012 Aerial: NJOIT, OGIS

0 25' 50'

SOMERSET HILLS SCHOOL

Subwatershed: Stony Brook

Site Area: 73,527 sq. ft.

Address: 107 Westervelt Avenue
North Plainfield, NJ 07060

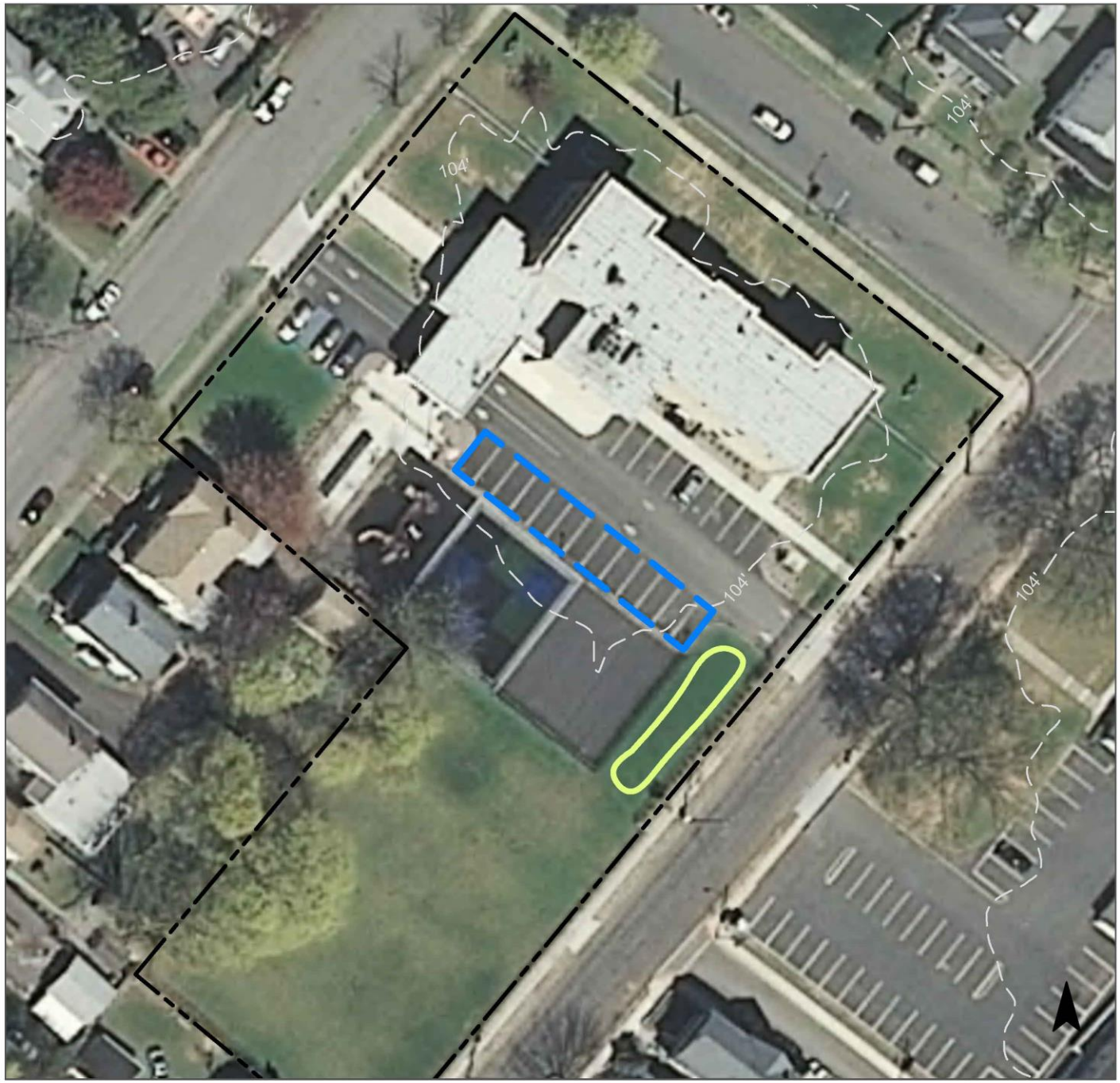
Block and Lot: Block 47, Lot 1

A rain garden can capture, treat, and infiltrate parking lot 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	25,826	1.2	13.0	118.6	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 systems	0.057	10	4,181	0.16	883	$4,415

GREEN INFRASTRUCTURE RECOMMENDATIONS



Somerset Hills School

- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 30' 60'

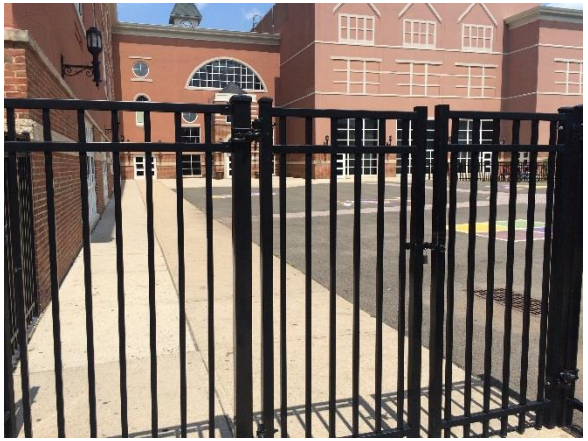
SOMERSET INTERMEDIATE SCHOOL

Subwatershed: Stony Brook

Site Area: 59,900 sq. ft.

Address: 303 Somerset Street
North Plainfield, NJ 07060

Block and Lot: Block 93, Lot 1;2;3

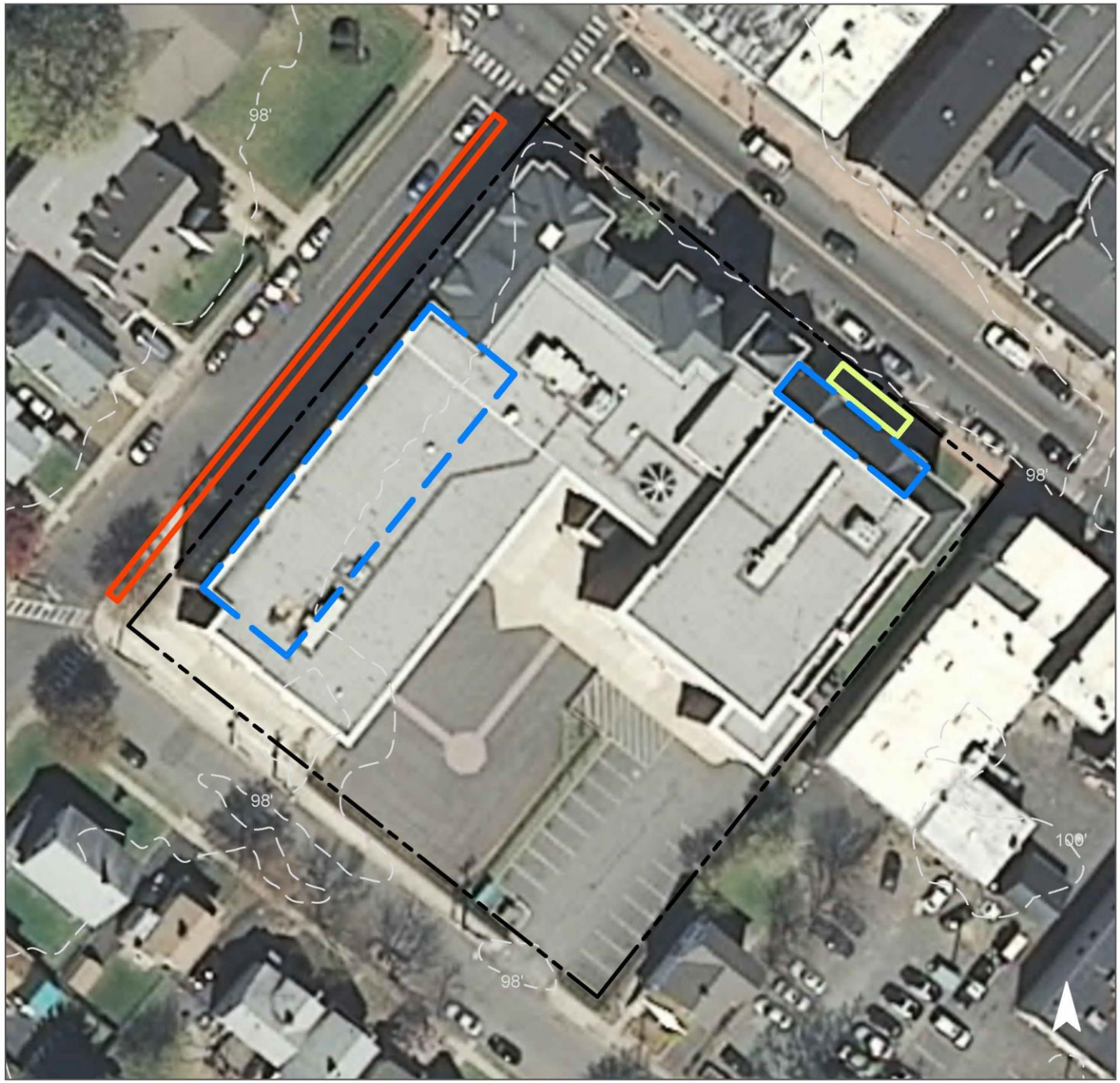


A rain garden can be installed in front of the school to capture, treat, and infiltrate runoff from the roof by disconnecting and redirecting the two nearby connected downspouts. Stormwater planters can also be installed next to the road to manage additional runoff from the roof. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
85	50,915	2.5	25.7	233.8	0.040	1.40

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 systems	0.024	4	1,788	0.07	292	$1,461
Stormwater planters	0.158	26	11,594	0.44	1,210	$121,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Somerset Intermediate School

- bioretention / rain gardens
- stormwater planters
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 30' 60'

STONY BROOK ELEMENTARY SCHOOL

Subwatershed: Stony Brook

Site Area: 207,822 sq. ft.

Address: 269 Grove Street
North Plainfield, NJ 07063

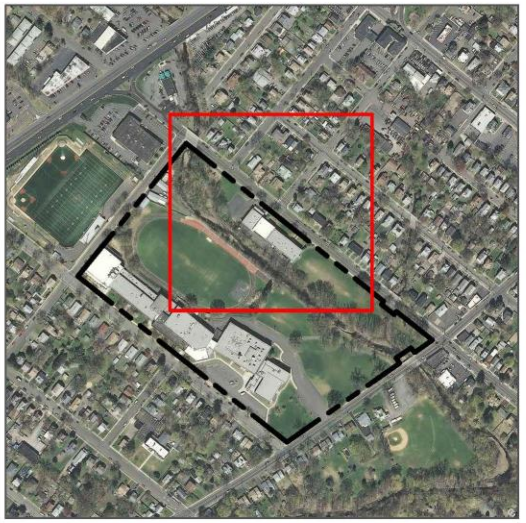
Block and Lot: Block 130, Lot 1.01

Rain gardens can be installed to capture, treat and infiltrate 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"
35	71,892	3.5	36.3	330.1	0.056	1.97

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	0.132	22	9,702	0.36	1,613	$8,065

GREEN INFRASTRUCTURE RECOMMENDATIONS



Stony Brook Elementary School

- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 50' 100'

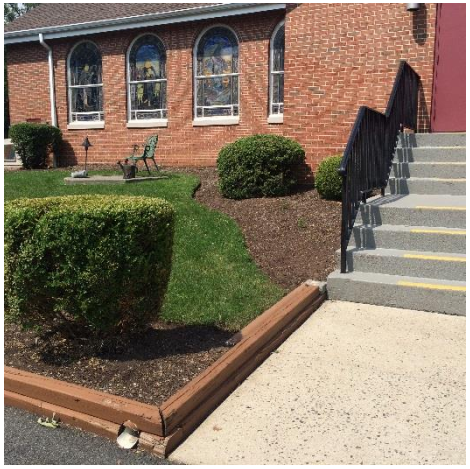
THE SUNDANCE SCHOOL

Subwatershed: **Stony Brook**

Site Area: **214,926 sq. ft.**

Address: **401 Greenbrook Road**
North Plainfield, NJ 07060

Block and Lot: **Block 165.01, Lot 2**

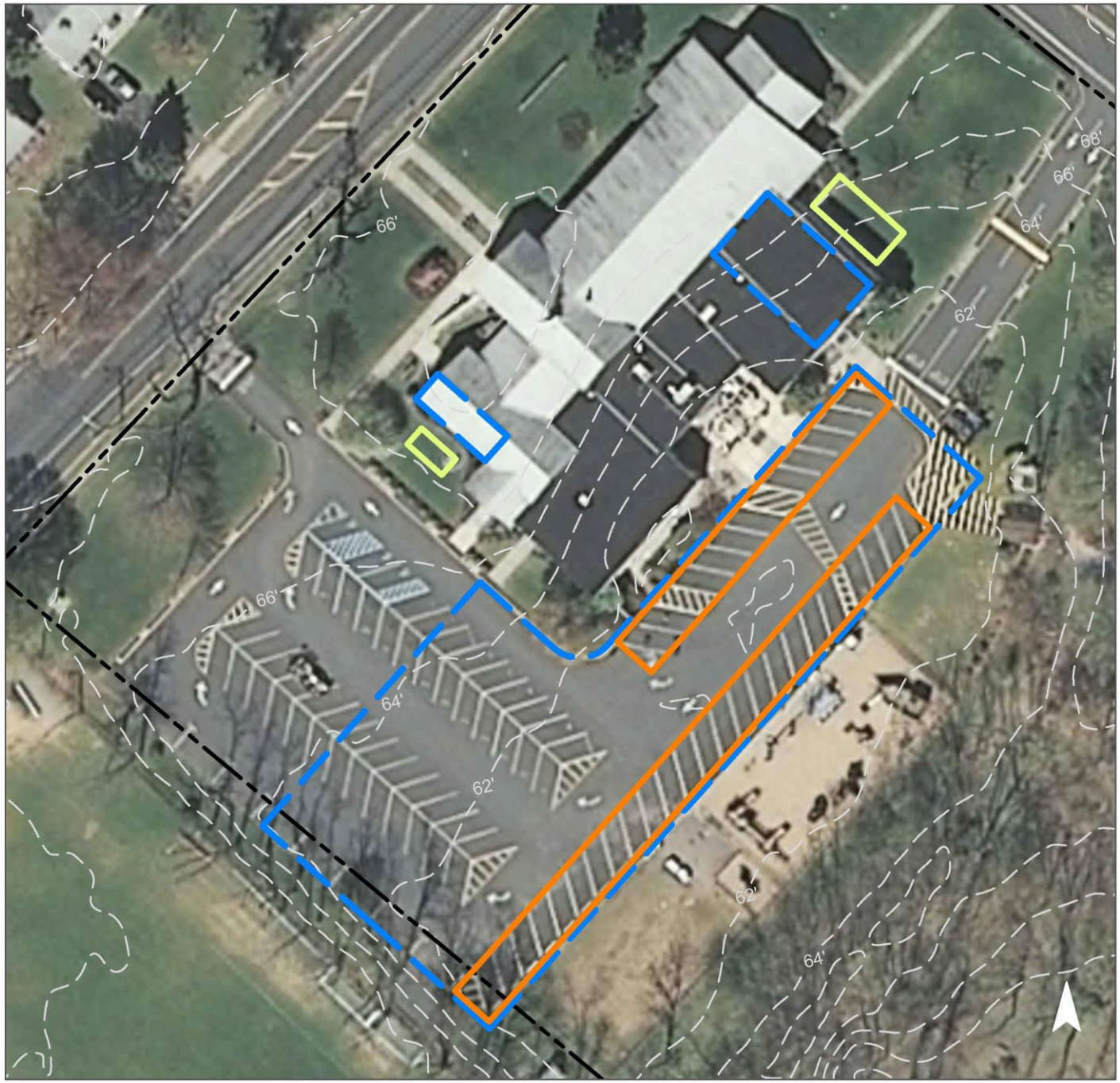


Parking spaces can be converted into pervious pavement to capture and infiltrate stormwater runoff. Rain gardens can also be built on either side of the school to capture, treat and infiltrate roof runoff by disconnecting and redirecting nearby downspouts. A preliminary soil assessment suggests that 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	81,793	3.9	41.3	375.5	0.064	2.24

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	0.058	10	4,264	0.16	695	$3,475
Pervious pavements	0.680	114	49,862	1.87	7,227	$180,675

GREEN INFRASTRUCTURE RECOMMENDATIONS



The Sundance School

- pervious pavements
- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 30' 60'

WATCHUNG AVENUE PRESBYTERIAN CHURCH

Subwatershed: Stony Brook

Site Area: 21,041 sq. ft.

Address: 170 Watchung Avenue
North Plainfield, NJ 07060

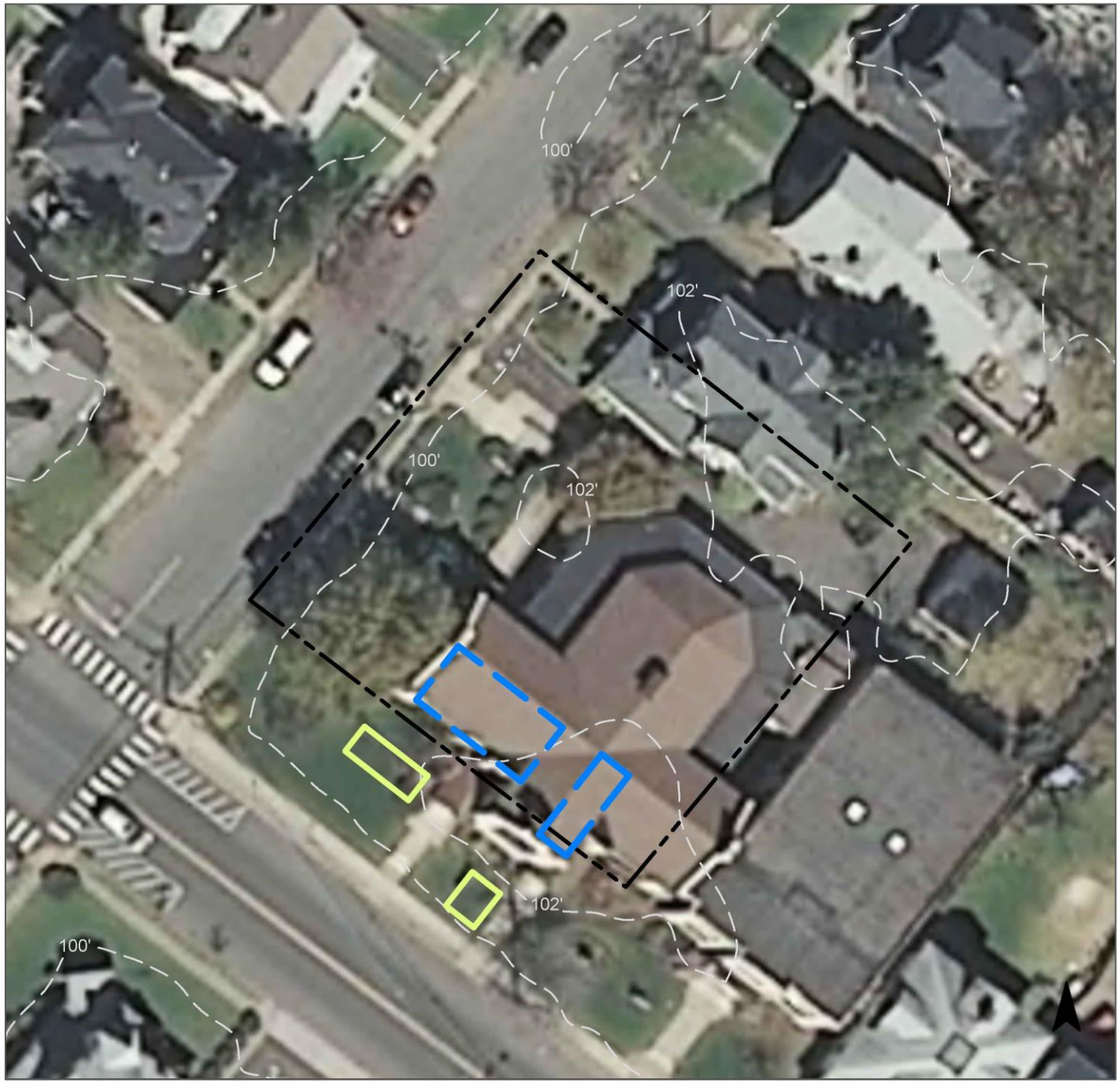
Block and Lot: Block 48, Lot 17

Rain gardens can capture, treat, and infiltrate stormwater from the roof. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
35	7,364	0.4	3.7	33.8	0.006	0.20

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	1,698	0.06	278	$1,390

GREEN INFRASTRUCTURE RECOMMENDATIONS



Watchung Avenue Presbyterian Church

- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 20' 40'

WEST END ELEMENTARY SCHOOL

Subwatershed: Stony Brook

Site Area: 556,094 sq. ft.

Address: 447 Greenbrook Road
North Plainfield, NJ 07063

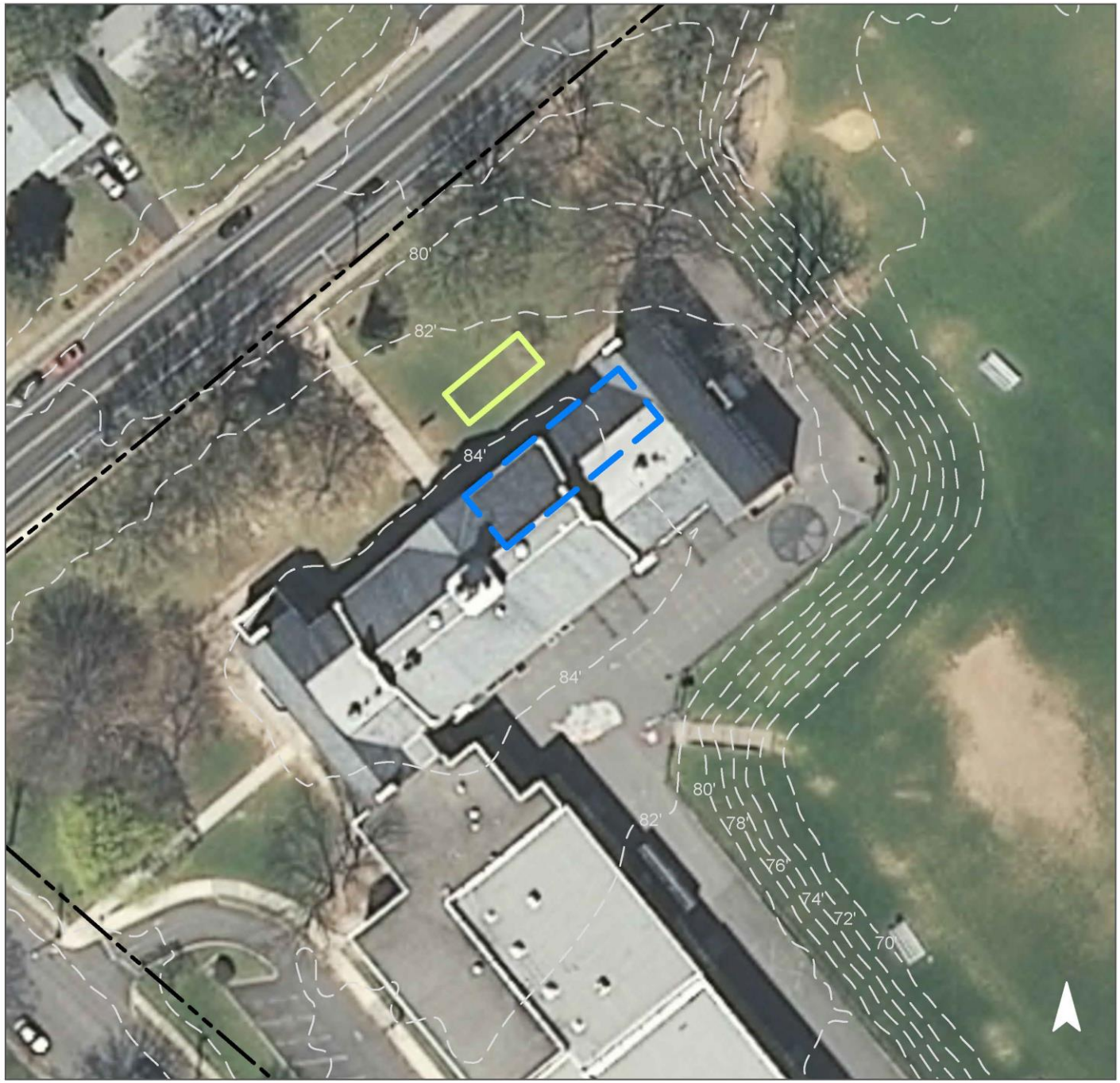
Block and Lot: Block 165.01;172 , Lot 1;1

A rain garden can be built in front of the school to capture, treat, and infiltrate runoff from the roof by disconnecting and redirecting the downspouts nearby. 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"
18	99,261	4.8	50.1	455.7	0.077	2.72

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	0.053	9	3,912	0.15	556	$2,780

GREEN INFRASTRUCTURE RECOMMENDATIONS



West End Elementary School

- bioretention / rain gardens
- drainage areas
- 2012 Aerial: NJOIT, OGIS

0 30' 60'

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 TP (lb/yr)	Existing Annual Loads TN (lb/yr)	Existing Annual Loads TSS (lb/yr)	I.C. %	I.C. Area (ac)	I.C. Area (SF)	Runoff Volumes from I.C. Water Quality Storm (1.25" over 2-hours) (Mgal)	Runoff Volumes from I.C. Annual (Mgal)
GREEN BROOK SUBWATERSHED	**18.05**	**786,321**			**18.5**	**193.4**	**1,758.4**		**8.79**	**382,972**	**0.298**	**10.50**
East End Elementary School												
Total Site Info	6.69	291,539	15.01	1	6.9	72.0	654.9	49	3.27	142,637	0.111	3.91
Hydewood Park Baptist Church												
Total Site Info	1.14	49,789	21.02	14.01;14.02	1.4	14.9	135.3	59	0.68	29,470	0.023	0.81
North Plainfield Baptist Church												
Total Site Info	0.33	14,544	177	11	0.2	2.4	21.8	33	0.11	4,740	0.004	0.13
North Plainfield Recreation												
Total Site Info	4.27	186,041	199.01	1	2.6	27.3	248.5	29	1.24	54,120	0.042	1.48
Saint Basilios-Gregorious Orthodox Church												
Total Site Info	0.29	12,693	95	1.01	0.4	3.7	33.9	58	0.17	7,384	0.006	0.20
Saint Luke Roman Catholic Church												
Total Site Info	5.32	231,715	203	12	7.0	73.0	664.0	62	3.32	144,620	0.113	3.97
STONY BROOK SUBWATERSHED	**47.94**	**2,088,446**			**36.6**	**383.9**	**3,489.7**		**17.45**	**760,066**	**0.592**	**20.85**
Church of God of Prophecy												
Total Site Info	0.67	29,092	97	12	1.2	12.3	111.8	84	0.56	24,352	0.019	0.67
Church of the Holy Cross												
Total Site Info	2.63	114,712	138	1;3	2.4	24.7	224.3	43	1.12	48,858	0.038	1.34
North Plainfield High School												
Total Site Info	15.03	654,835	130	1.01	11.0	115.0	1,045.3	35	5.23	227,656	0.177	6.24
North Plainfield Library												
Total Site Info	0.86	37,276	131	25	1.4	14.7	133.5	78	0.67	29,083	0.023	0.80
North Plainfield Municipal Building												
Total Site Info	0.70	30,451	93	6	1.2	13.1	118.8	85	0.59	25,884	0.020	0.71

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)
North Plainfield Rescue Squad												
Total Site Info	0.25	10,677	80	26	0.4	4.7	42.8	87	0.21	9,327	0.007	0.26
North Plainfield School District												
Total Site Info	0.68	29,661	55	3	0.7	7.4	67.5	50	0.34	14,699	0.011	0.40
Saint Joseph Church and Parish Center												
Total Site Info	1.11	48,432	81	8;9;10	2.1	21.8	198.1	89	0.99	43,156	0.034	1.18
Somerset Hills School												
Total Site Info	1.69	73,527	47	1	1.2	13.0	118.6	35	0.59	25,826	0.020	0.71
Somerset Intermediate School												
Total Site Info	1.38	59,900	93	1;2;3	2.5	25.7	233.8	85	1.17	50,915	0.040	1.40
Stony Brook Elementary School												
Total Site Info	4.77	207,822	130	1.01	3.5	36.3	330.1	35	1.65	71,892	0.056	1.97
The Sundance School												
Total Site Info	4.93	214,926	165.01	2	3.9	41.3	375.5	38	1.88	81,793	0.064	2.24
Watchung Avenue Presbyterian Church												
Total Site Info	0.48	21,041	48	17	0.4	3.7	33.8	35	0.17	7,364	0.006	0.20
West End Elementary School												
Total Site Info	12.77	556,094	165.01;172	1	4.8	50.1	455.7	18	2.28	99,261	0.077	2.72

e. Summary of Proposed Green Infrastructure Practices

Summary of Proposed Green Infrastructure Practices

	Subwatershed/Site Name/Total Site Info/GI Practice	Potential Management Area: Area (SF)	Potential Management Area: Area (ac)	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 %
	GREEN BROOK SUBWATERSHED	**83,577**	**1.92**	**2.178**	**365**	**158,619**	**5.99**	**19,035**			**$400,976**	**21.8%**
1	**East End Elementary School**											
	Bioretention systems/rain gardens	1,162	0.03	0.030	5	2,222	0.08	363	5	SF	$1,816	0.8%
	Pervious pavements	13,693	0.31	0.357	60	26,180	0.98	2,601	25	SF	$65,025	9.6%
	Total Site Info	**14,855**	**0.34**	**0.387**	**65**	**28,402**	**1.06**	**2,964**			**$66,841**	**10.4%**
2	**Hydewood Park Baptist Church**											
	Bioretention systems/rain gardens	978	0.02	0.025	4	1,870	0.07	306	5	SF	$1,528	3.3%
	Pervious pavements	9,347	0.21	0.244	41	17,870	0.67	2,915	25	SF	$72,877	31.7%
	Total Site Info	**10,325**	**0.24**	**0.269**	**45**	**19,740**	**0.74**	**3,221**			**$74,405**	**35.0%**
3	**North Plainfield Baptist Church**											
	Bioretention systems/rain gardens	1,821	0.04	0.047	8	3,478	0.13	569	5	SF	$2,846	38.4%
	Total Site Info	**1,821**	**0.04**	**0.047**	**8**	**3,478**	**0.13**	**569**			**$2,846**	**38.4%**
4	**North Plainfield Recreation**											
	Bioretention systems/rain gardens	3,921	0.09	0.102	17	7,495	0.28	1,000	5	SF	$5,000	7.2%
	Total Site Info	**3,921**	**0.09**	**0.102**	**17**	**7,495**	**0.28**	**1,000**			**$5,000**	**7.2%**
5	**Saint Basilios-Gregorious Orthodox Church**											
	Bioretention systems/rain gardens	419	0.01	0.011	2	800	0.03	102	5	SF	$510	5.7%
	Total Site Info	**419**	**0.01**	**0.011**	**2**	**800**	**0.03**	**102**			**$510**	**5.7%**
6	**Saint Luke Roman Catholic Church**											
	Bioretention systems/rain gardens	815	0.02	0.021	4	1,556	0.06	255	5	SF	$1,274	0.6%
	Pervious pavements	50,290	1.15	1.310	219	96,148	3.61	9,924	25	SF	$248,100	34.8%
	Rainwater harvesting systems	1,130	0.03	0.029	5	1,000	0.08	1,000	2	gal	$2,000	0.8%
	Total Site Info	**52,235**	**1.20**	**1.361**	**228**	**98,704**	**3.75**	**11,179**			**$251,374**	**36.1%**
	STONY BROOK SUBWATERSHED	**100,436**	**2.31**	**2.617**	**438**	**191,026**	**8.00**	**28,100**			**$594,284**	**14.8%**
7	**Church of God of Prophecy**											
	Bioretention systems/rain gardens	1,859	0.04	0.048	8	3,553	0.13	619	5	SF	$3,095	7.6%
	Pervious pavements	3,702	0.08	0.096	16	7,076	0.27	1,332	25	SF	$33,293	15.2%
	Total Site Info	**5,561**	**0.13**	**0.145**	**24**	**10,629**	**0.40**	**1,951**			**$36,388**	**22.8%**

Summary of Proposed Green Infrastructure Practices

	Subwatershed/Site Name/Total Site Info/GI Practice	Potential Management Area Area (SF)	Potential Management Area Area (ac)	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 %
8	**Church of the Holy Cross**											
	Bioretention systems/rain gardens	2,028	0.05	0.053	9	3,875	0.15	619	5	SF	$3,095	4.2%
	Total Site Info	**2,028**	**0.05**	**0.053**	**9**	**3,875**	**0.15**	**619**			**$3,095**	**4.2%**
9	**North Plainfield High School**											
	Bioretention systems/rain gardens	17,372	0.40	0.453	76	33,211	1.25	4,642	5	SF	$23,210	7.6%
	Total Site Info	**17,372**	**0.40**	**0.453**	**76**	**33,211**	**1.25**	**4,642**			**$23,210**	**7.6%**
10	**North Plainfield Library**											
	Pervious pavements	7,613	0.17	0.198	33	14,556	0.55	1,854	25	SF	$46,350	26.2%
	Stormwater planters	1,500	0.03	0.039	7	2,865	0.11	580	100	SF	$58,000	5.2%
	Total Site Info	**9,113**	**0.21**	**0.237**	**40**	**17,421**	**0.66**	**2,434**			**$104,350**	**31.3%**
11	**North Plainfield Municipal Building**											
	Pervious pavements	3,500	0.08	0.091	15	6,695	0.25	1,103	25	SF	$27,575	13.5%
	Total Site Info	**3,500**	**0.08**	**0.091**	**15**	**6,695**	**0.25**	**1,103**			**$27,575**	**13.5%**
12	**North Plainfield Rescue Squad**											
	Bioretention systems/rain gardens	436	0.01	0.011	2	830	0.03	39	5	SF	$195	4.7%
	Rainwater harvesting systems	376	0.01	0.010	2	350	0.03	350	2	gal	$700	4.0%
	Total Site Info	**813**	**0.02**	**0.021**	**4**	**1,180**	**0.06**	**389**			**$895**	**8.7%**
13	**North Plainfield School District**											
	Bioretention systems/rain gardens	1,296	0.03	0.034	6	2,476	0.09	405	5	SF	$2,026	8.8%
	Total Site Info	**1,296**	**0.03**	**0.034**	**6**	**2,476**	**0.09**	**405**			**$2,026**	**8.8%**
14	**Saint Joseph Church and Parish Center**											
	Bioretention systems/rain gardens	1,161	0.03	0.030	5	2,222	0.85	390	5	SF	$1,950	2.7%
	Pervious pavements	13,452	0.31	0.350	59	25,716	0.97	2,813	25	SF	$70,335	31.2%
	Rainwater harvesting systems	633	0.01	0.016	3	600	0.05	600	2	gal	$1,200	1.5%
	Total Site Info	**15,246**	**0.35**	**0.397**	**66**	**28,538**	**1.87**	**3,803**			**$73,485**	**35.3%**
15	**Somerset Hills School**											
	Bioretention systems/rain gardens	2,186	0.05	0.057	10	4,181	0.16	883	5	SF	$4,415	8.5%
	Total Site Info	**2,186**	**0.05**	**0.057**	**10**	**4,181**	**0.16**	**883**			**$4,415**	**8.5%**

Summary of Proposed Green Infrastructure Practices

	Subwatershed/Site Name/Total Site Info/GI Practice	Potential Management Area Area (SF)	Potential Management Area Area (ac)	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 %
16	**Somerset Intermediate School**											
	Bioretention systems/rain gardens	935	0.02	0.024	4	1,788	0.07	292	5	SF	$1,461	1.8%
	Stormwater planters	6,065	0.14	0.158	26	11,594	0.44	1,210	100	SF	$121,000	11.9%
	Total Site Info	**7,000**	**0.16**	**0.182**	**31**	**13,382**	**0.51**	**1,502**			**$122,461**	**13.7%**
17	**Stony Brook Elementary School**											
	Bioretention systems/rain gardens	5,073	0.12	0.132	22	9,702	0.36	1,613	5	SF	$8,065	7.1%
	Total Site Info	**5,073**	**0.12**	**0.132**	**22**	**9,702**	**0.36**	**1,613**			**$8,065**	**7.1%**
18	**The Sundance School**											
	Bioretention systems/rain gardens	2,229	0.05	0.058	10	4,264	0.16	695	5	SF	$3,475	2.7%
	Pervious pavements	26,081	0.60	0.680	114	49,862	1.87	7,227	25	SF	$180,675	31.9%
	Total Site Info	**28,310**	**0.65**	**0.738**	**123**	**54,126**	**2.03**	**7,922**			**$184,150**	**34.6%**
19	**Watchung Avenue Presbyterian Church**											
	Bioretention systems/rain gardens	890	0.02	0.023	4	1,698	0.06	278	5	SF	$1,390	12.1%
	Total Site Info	**890**	**0.02**	**0.023**	**4**	**1,698**	**0.06**	**278**			**$1,390**	**12.1%**
20	**West End Elementary School**											
	Bioretention systems/rain gardens	2,048	0.05	0.053	9	3,912	0.15	556	5	SF	$2,780	2.1%
	Total Site Info	**2,048**	**0.05**	**0.053**	**9**	**3,912**	**0.15**	**556**			**$2,780**	**2.1%**