RUTGERS
New Jersey Agricultural
Experiment Station

Draft

Impervious Cover Reduction Action Plan
for
Bridgewater Township, Somerset County, New Jersey

Prepared for Bridgewater Township by the
Rutgers Cooperative Extension Water Resources Program

November 10, 2015

Table of Contents

Attachment: Climate Resilient Green Infrastructure

a. Overview Map of the Project

b. Green Infrastructure Sites

c. Proposed Green Infrastructure Concepts

d. Summary of Existing Conditions

e. Summary of Proposed Green Infrastructure Practices

Introduction

Located in Somerset County in central New Jersey, Bridgewater Township covers approximately 32.4 square miles. Figures 1 and 2 illustrate that Bridgewater Township is dominated by urban land uses. A total of 61.6% of the municipality's land use is classified as urban. Of the urban land in Bridgewater Township, low 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 Bridgewater Township 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 Bridgewater Township. Based upon the 2007 NJDEP land use/land cover data, approximately 19.1% of Bridgewater Township has impervious cover. This level of impervious cover suggests that the streams in Bridgewater Township are likely impacted.[1]

Methodology

Bridgewater Township contains portions of eight 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

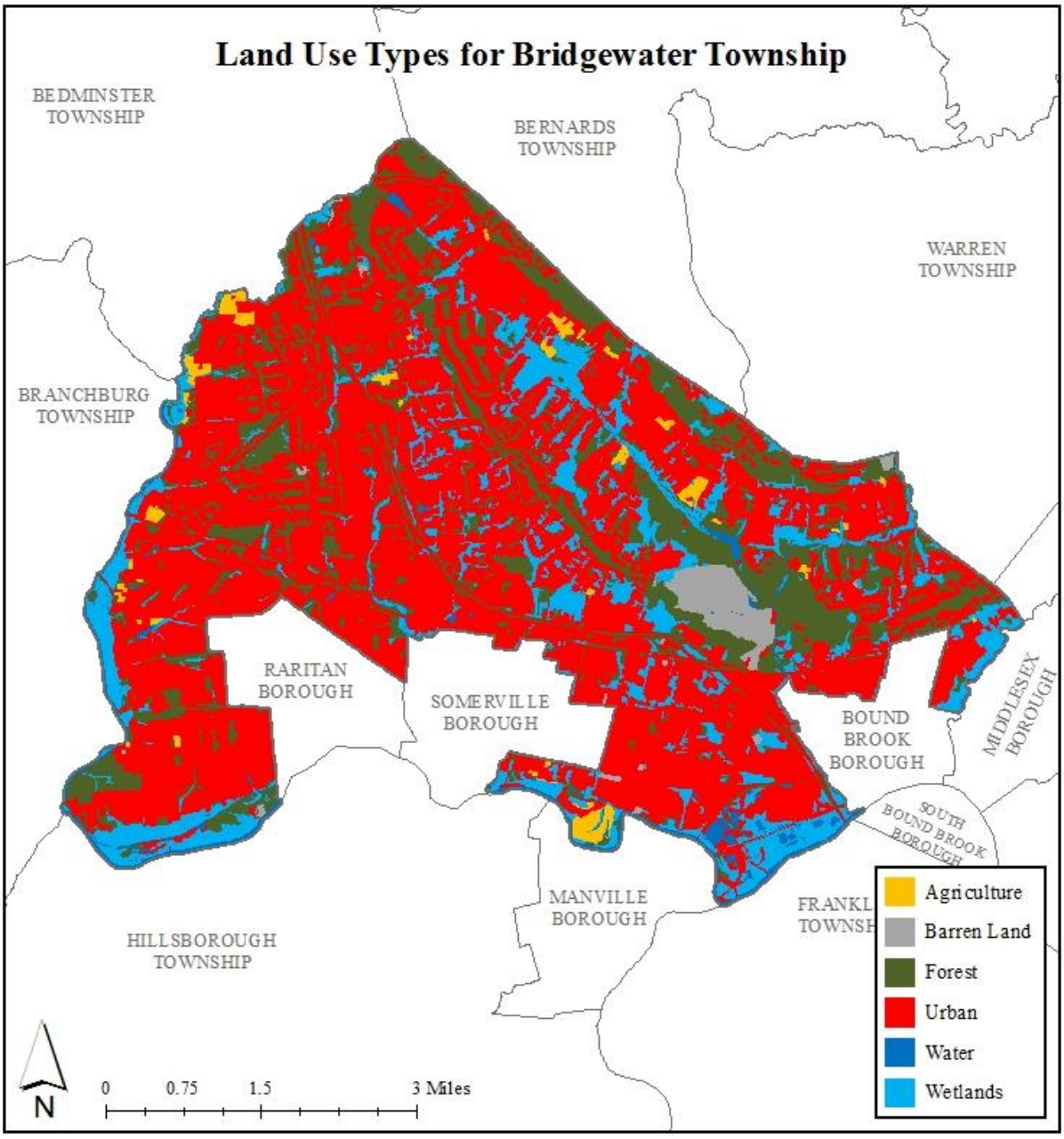


Figure 1: Map illustrating the land use in Bridgewater Township

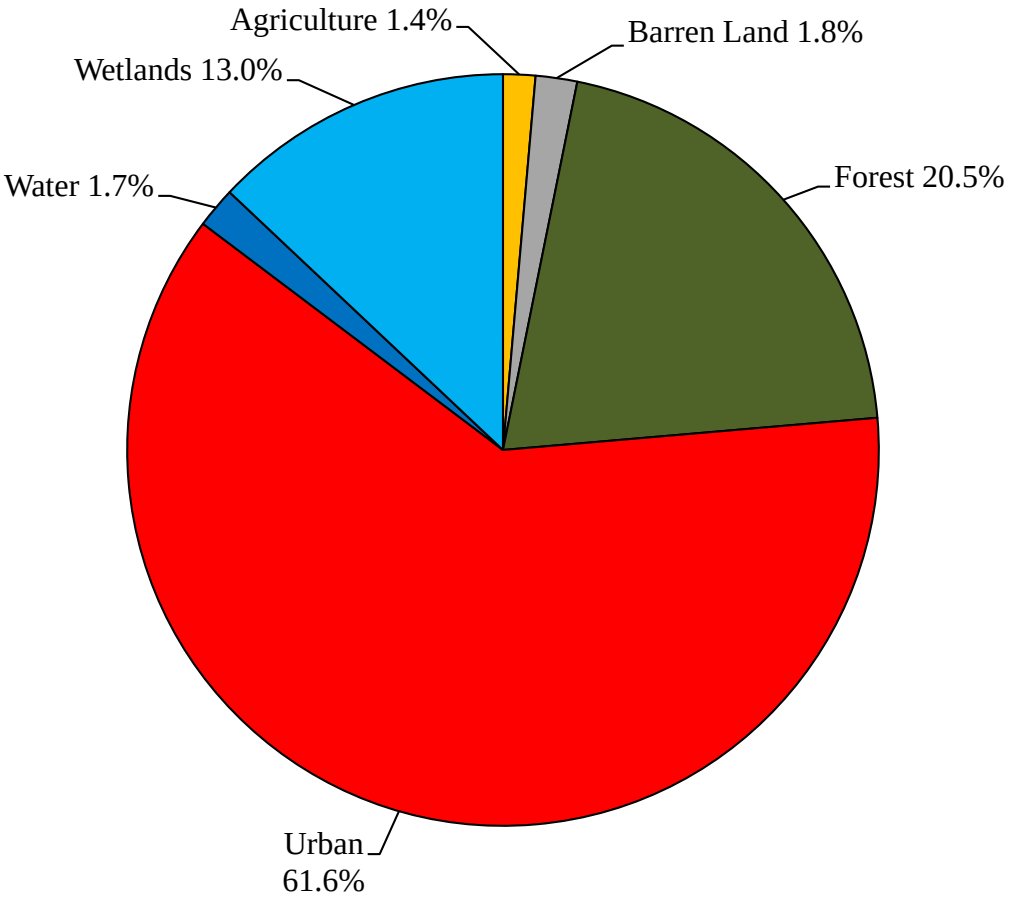


Figure 2: Pie chart illustrating the land use in Bridgewater Township

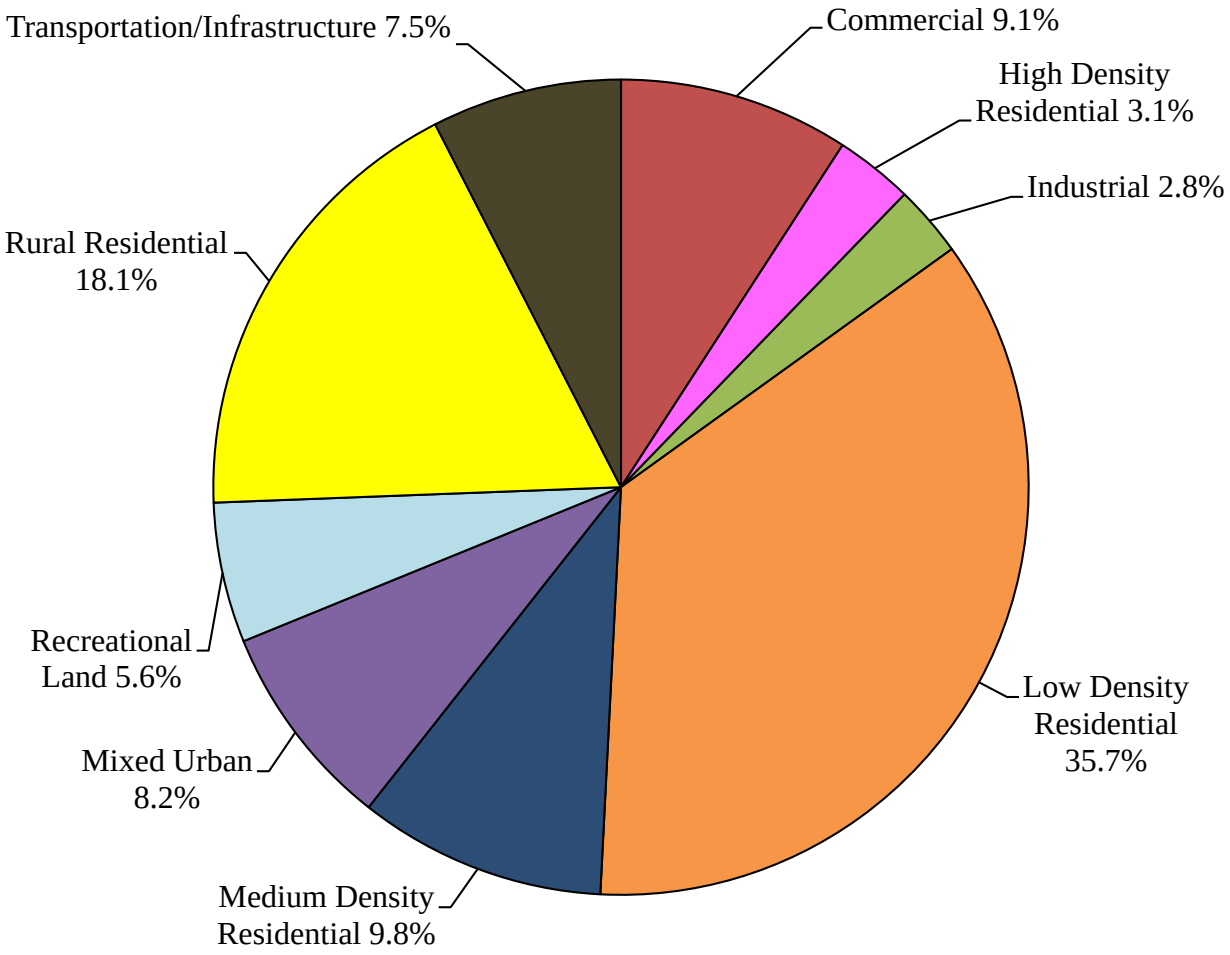


Figure 3: Pie chart illustrating the various types of urban land use in Bridgewater Township

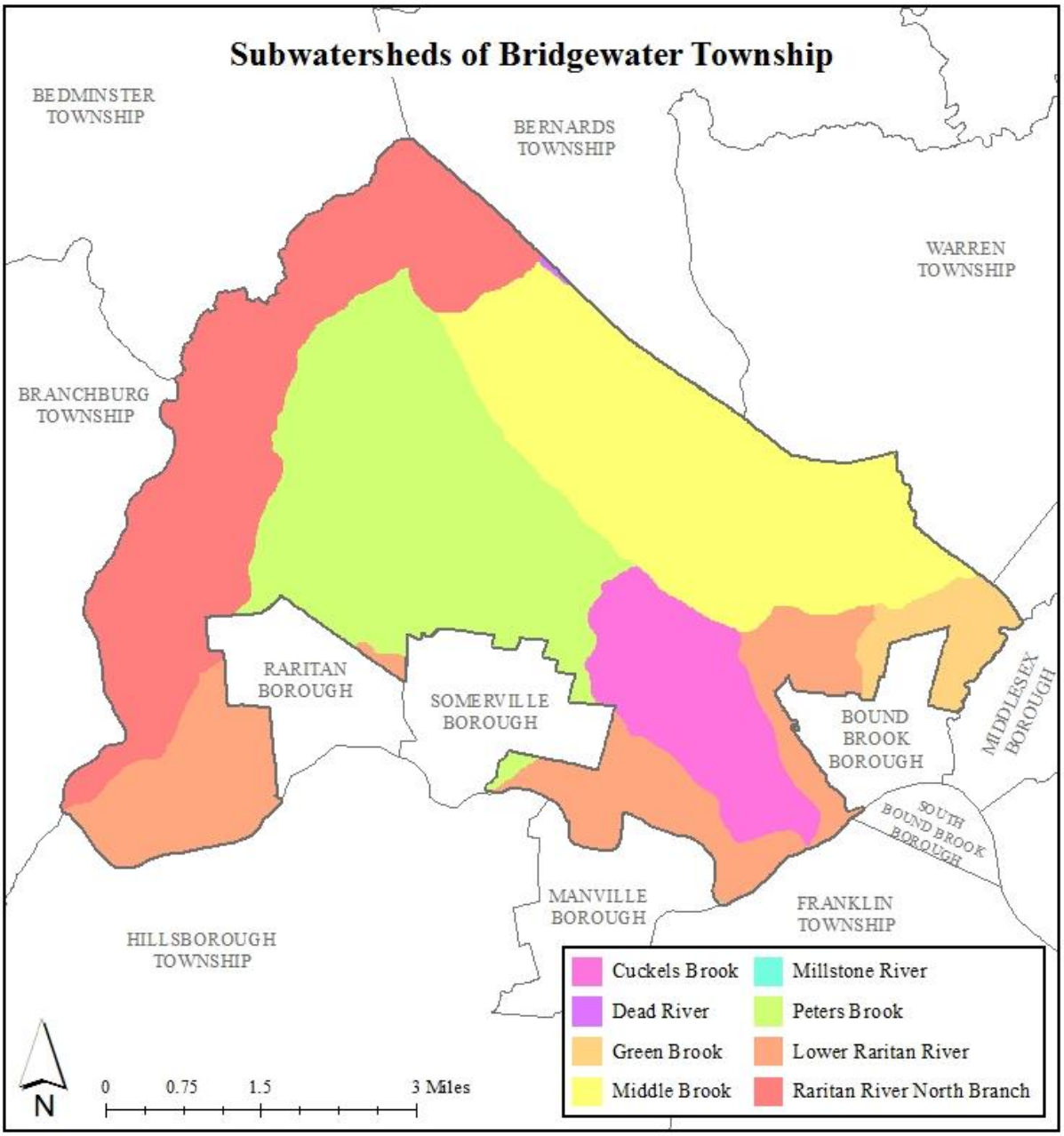


Figure 4: Map of the subwatersheds in Bridgewater Township

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 Bridgewater Township 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 Bridgewater Township. Each practice is discussed below.

Disconnected downspouts

This is often referred to as simple disconnection. A downspout is simply disconnected, and 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

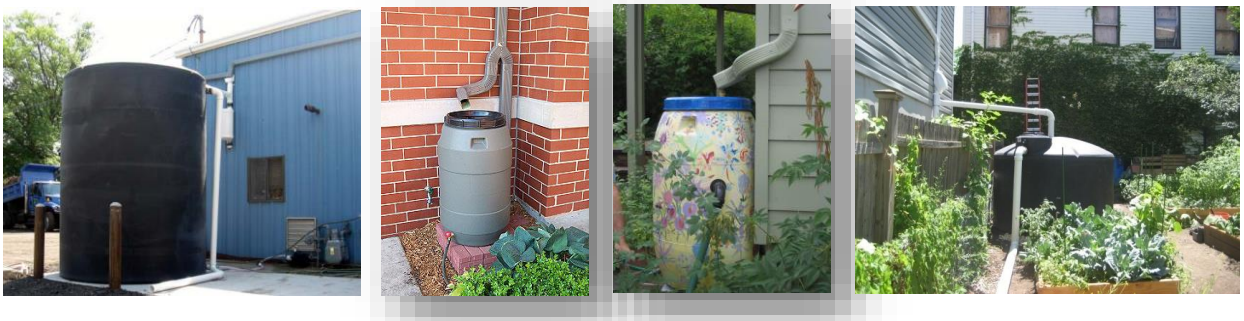
These are landscaped features that are designed to capture, treat, and infiltrate stormwater runoff. These systems can easily be incorporated into existing landscapes, improving aesthetics and creating a wildlife habitat while managing stormwater runoff. Bioretention systems also can be used in soils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

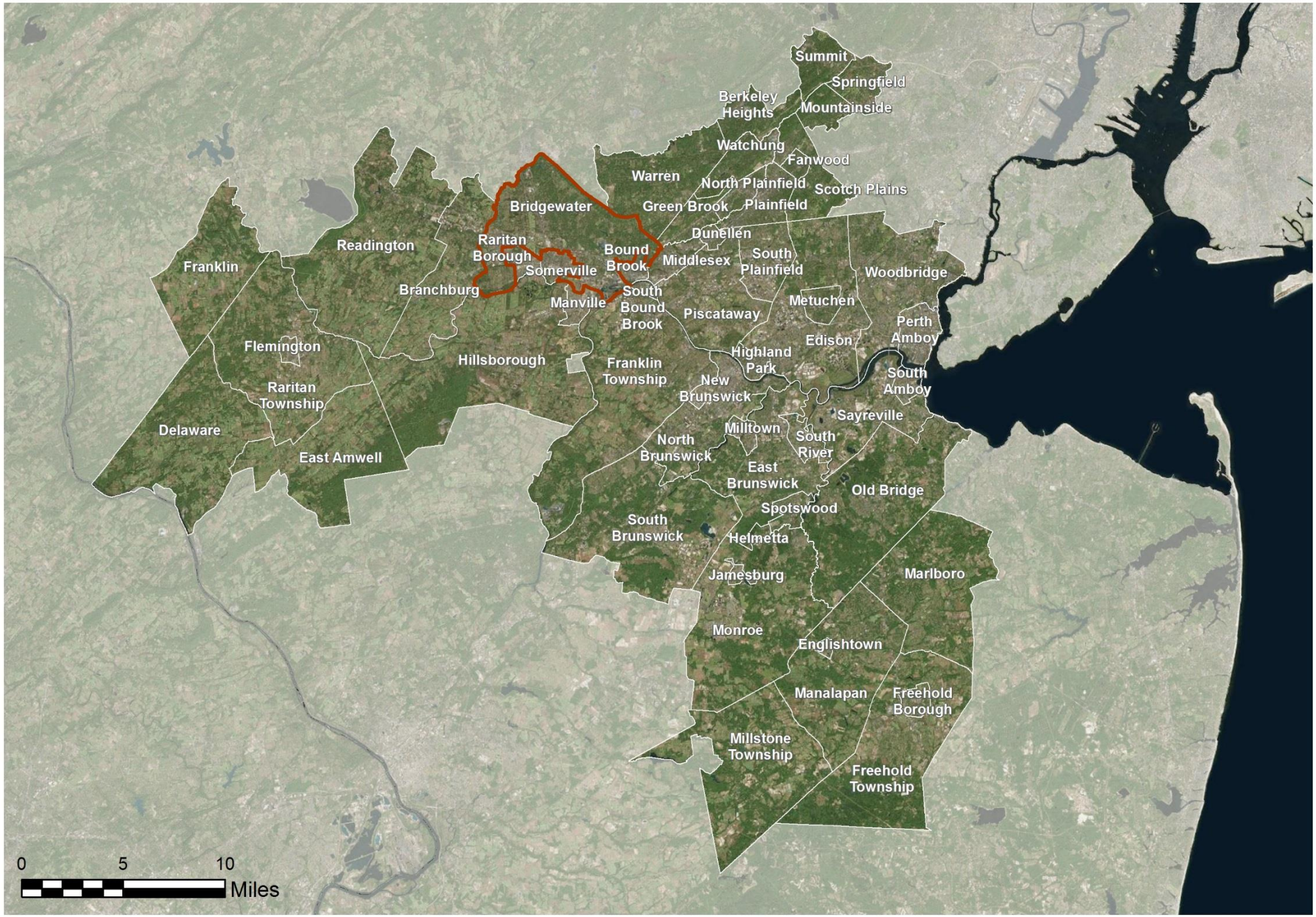
Conclusion

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.

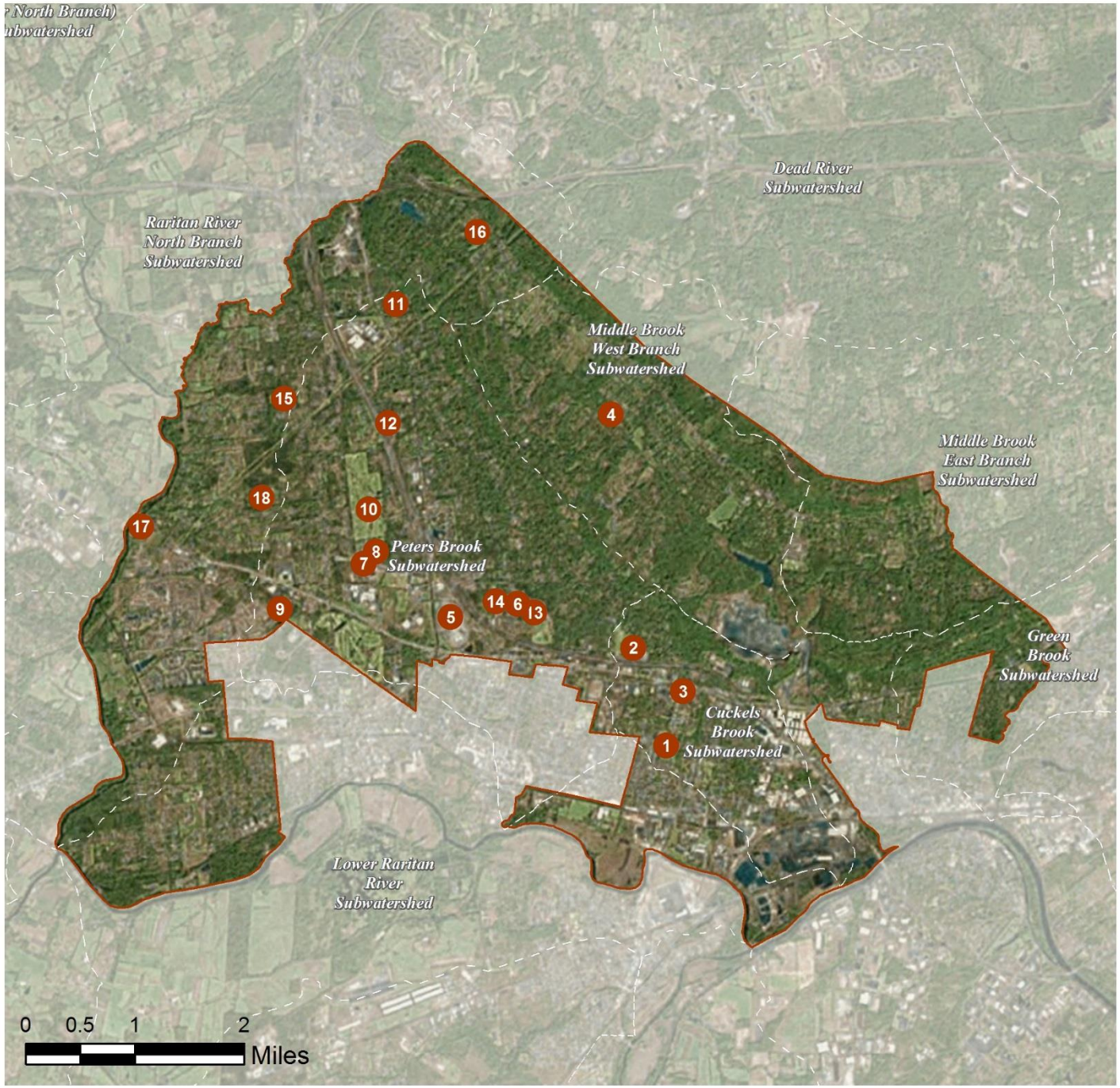
a. Overview Map of the Project

BRIDGEWATER: CLIMATE RESILIENT GREEN INFRASTRUCTURE FOR THE RARITAN BASIN



b. Green Infrastructure Sites

BRIDGEWATER: GREEN INFRASTRUCTURE SITES



SITES WITHIN THE CUCKELS BROOK SUBWATERSHED:

1. Adamsville Primary
2. Bridgewater-Raritan Middle School
3. Houlihan's

SITES WITHIN THE MIDDLE BROOK SUBWATERSHED:

4. Crim Primary

SITES WITHIN THE PETERS BROOK SUBWATERSHED:

5. Bridgewater Commons (Main Mall)
6. Bridgewater Library
7. Bridgewater-Raritan High School
8. Bridgewater YMCA
9. Evangel Chapel
10. Green Knoll Golf Club
11. Hillside Intermediate School
12. Shimon and Sara Jewish Community Center
13. Somerset County Vocational & Technical School
14. The Little Gym of Bridgewater

SITES WITHIN THE RARITAN RIVER NORTH BRANCH SUBWATERSHED:

15. Eisenhower Intermediate School
16. Hamilton Primary
17. Milltown Primary
18. Van Holten Primary

c. Proposed Green Infrastructure Concepts

ADAMSVILLE PRIMARY

Subwatershed: Cuckels Brook

Site Area: 761,941 sq. ft.

Address: 400 Union Avenue
Bridgewater NJ, 08807

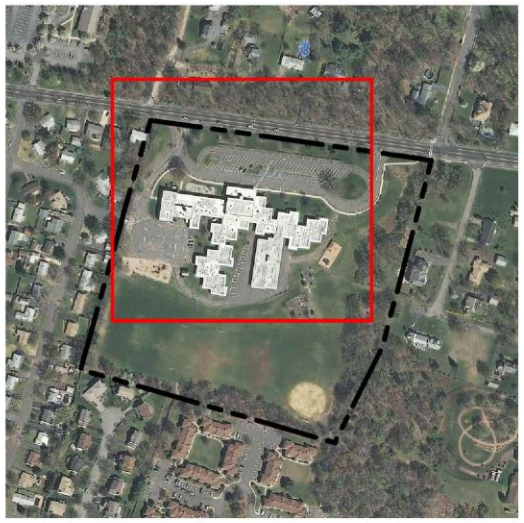
Block and Lot: Block 249, Lot 41

A rain garden can be installed to capture, treat, and, infiltrate runoff from the parking lot. Parking spaces can also be replaced with pervious pavement to capture, and infiltrate stormwater. On the northwest side of the building a cistern can be installed to harvest rainwater to be used to water the existing garden. 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"
40	306,933	14.8	155.0	1,409.2	0.239	8.42

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.178	30	13,097	0.49	1,870	$9,350
Pervious pavements	0.410	69	30,114	1.13	4,000	$100,000
Rainwater harvesting systems	0.058	10	2,000	0.16	2,000 (gal)	$4,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Adamsville Primary

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

0 50' 100'

BRIDGEWATER-RARITAN MIDDLE SCHOOL

Subwatershed: **Cuckels Brook**

Site Area: **2,223,717 sq. ft.**

Address: **128 Meriwood Road**
Bridgewater, NJ 08807

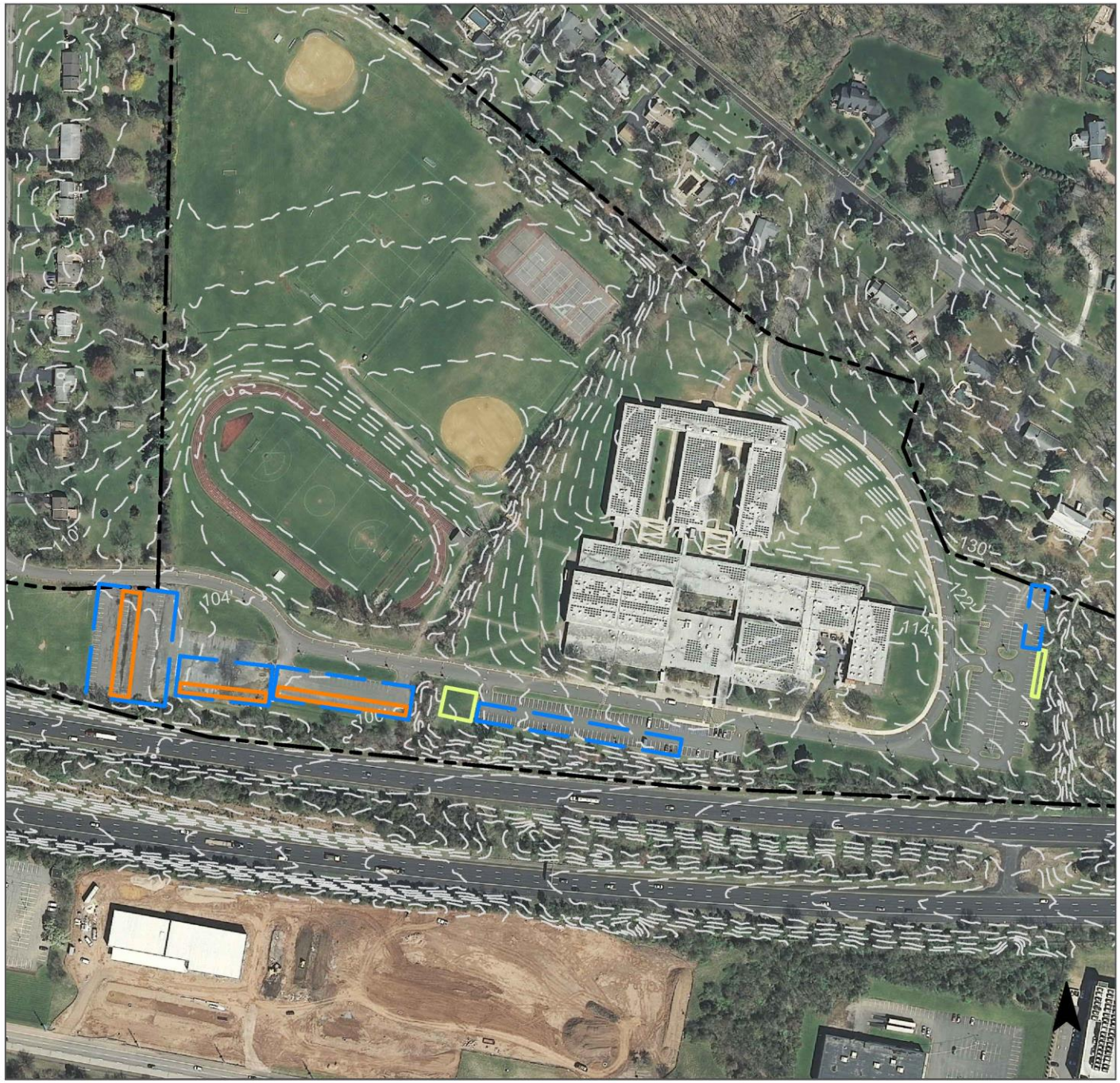
Block and Lot: **Block 565, Lot 19**

The two parking lots on the west are in poor condition. Parking spaces can be replaced with pervious pavement to capture, and infiltrate stormwater. The parking lot in front of the main entrance drains into a grass area on the west side, where a bioretention system can be installed to capture, treat, and infiltrate the runoff generated by the lots. A second bioretention system can be installed to manage runoff from the eastern parking lot. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
25	545,598	26.3	275.6	2,505.0	0.425	14.96

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
Bioretention systems	0.469	79	34,415	1.29	4,700	$23,500
Pervious pavements	1.725	289	126,562	4.76	15,000	$375,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Bridgewater Raritan Middle School

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

0 150' 300'

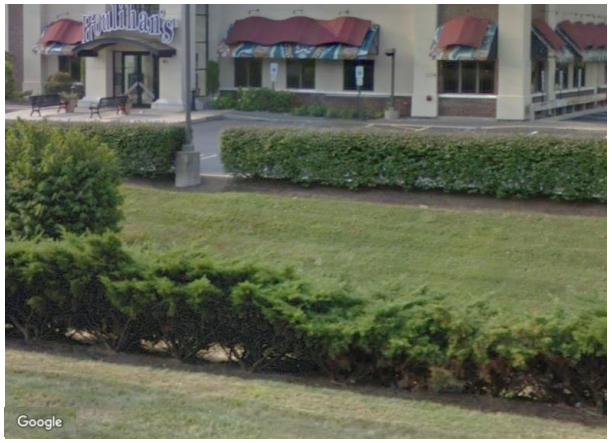
HOULIHAN'S

Subwatershed: Cuckels Brook

Site Area: 225,640 sq. ft.

Address: 1288 U.S. Route 22
Bridgewater, NJ 08807

Block and Lot: Block 222, Lot 6

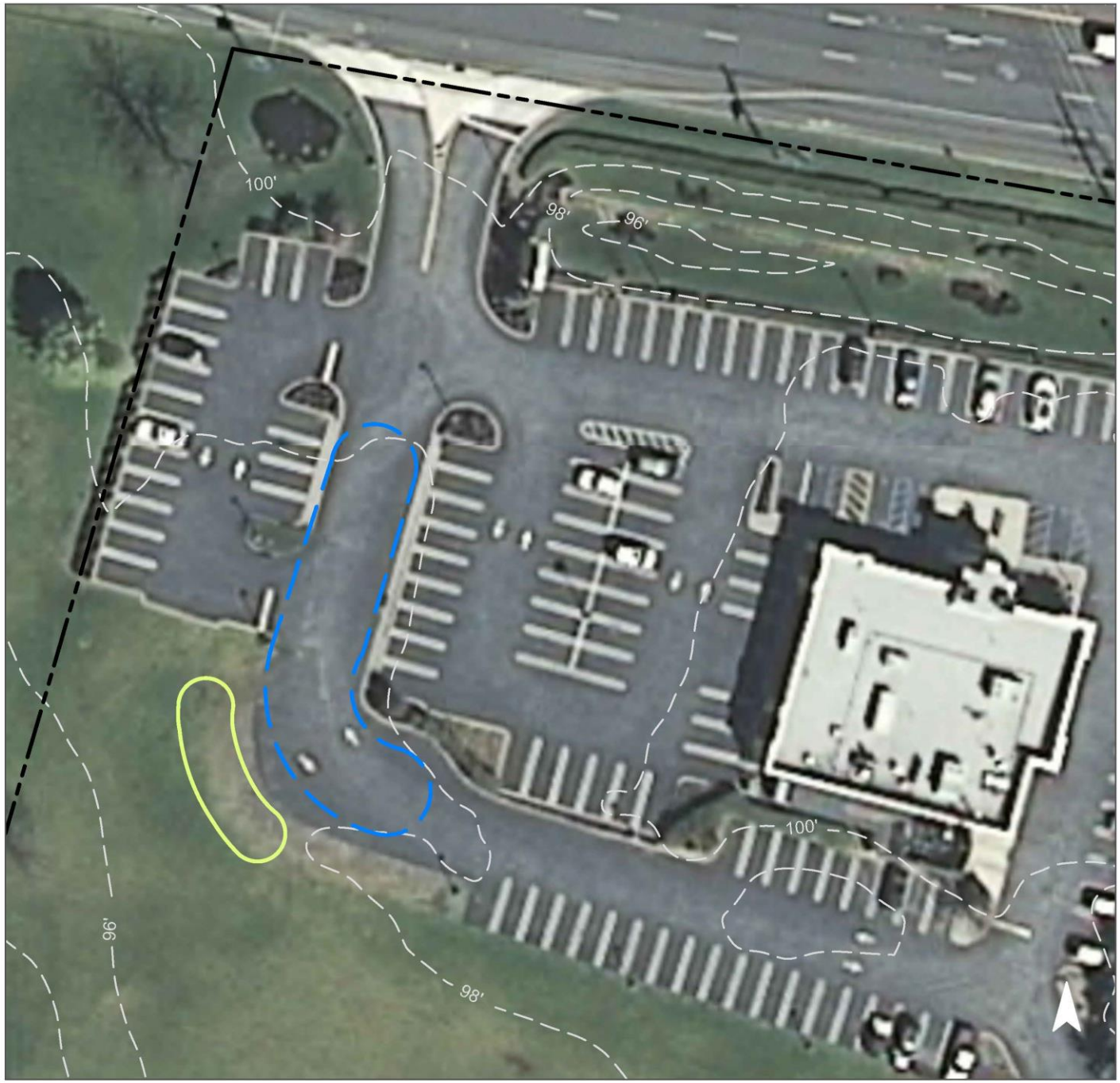


In the back parking lot there is evidence of erosion in the turf grass. A bioretention system can be installed in this area along the curve of the driveway to capture, treat, and infiltrate stormwater runoff. A preliminary soil assessment suggests that more soil testing would be required before determining 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"
46	104,300	5.0	52.7	478.9	0.081	2.86

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.106	18	7,802	0.29	1,080	$5,400

GREEN INFRASTRUCTURE RECOMMENDATIONS



Houlihan's

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

0 25' 50'

CRIM PRIMARY

Subwatershed: Middle Brook

Site Area: 524,171 sq. ft.

Address: 1300 Crim Road
Bridgewater, NJ 08807

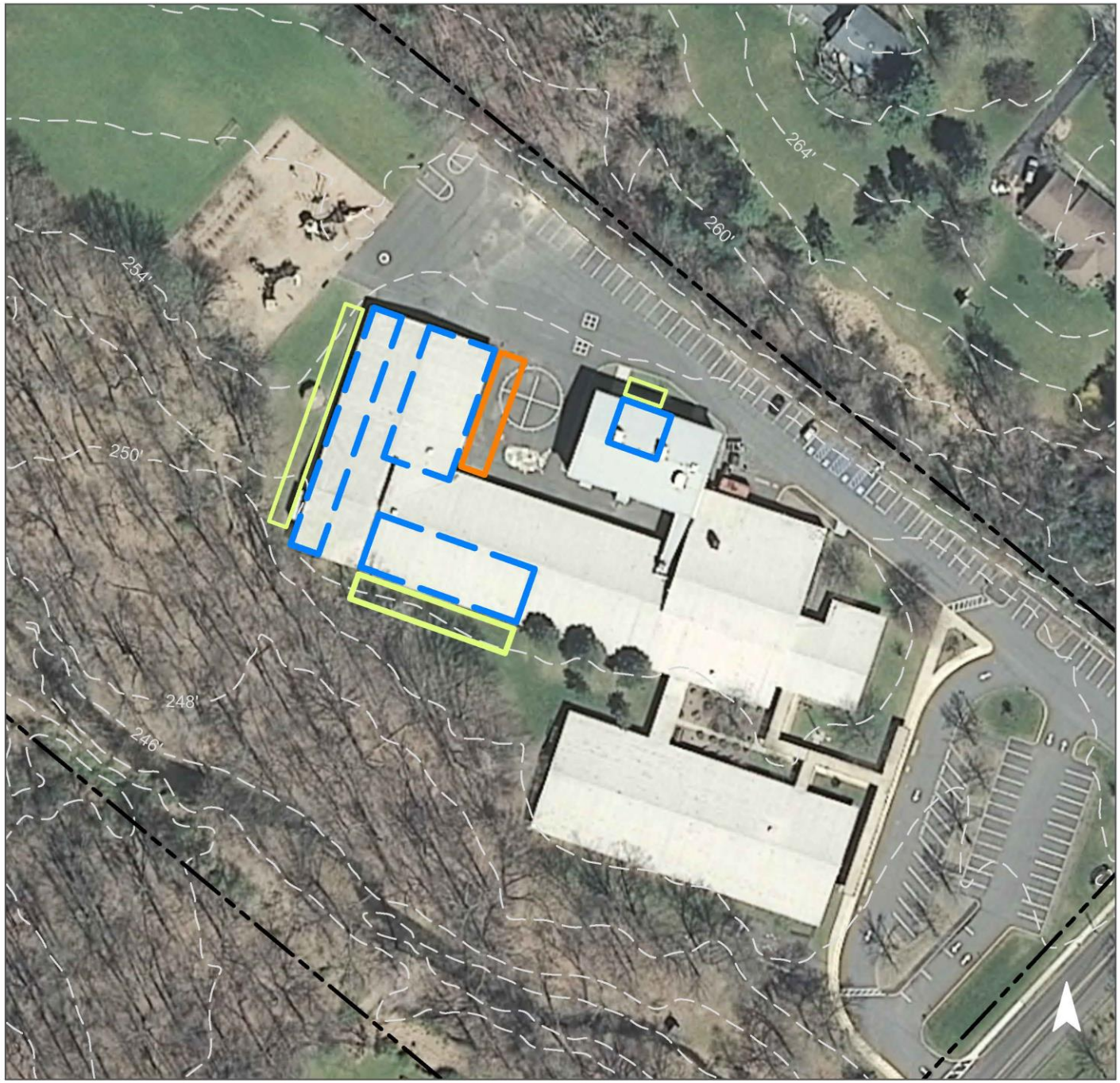
Block and Lot: Block 652, Lot 74

Bioretention systems can be installed to capture, treat, and infiltrate rooftop runoff in three locations around the perimeter of the school. Near the center of the school there is eroded pavement that can be replaced with pervious pavement to allow water to infiltrate through the surface. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
33	172,607	8.3	87.2	792.5	0.134	4.73

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	0.318	53	23,323	0.88	4,000	$20,000
Pervious pavements	0.107	18	7,802	0.29	1,300	$32,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



Crim Primary

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

0 50' 100'

BRIDGEWATER COMMONS (MAIN MALL)

Subwatershed: Peters Brook

Site Area: 1,130,383 sq. ft.

Address: 400 Commons Way
Bridgewater, NJ 08807

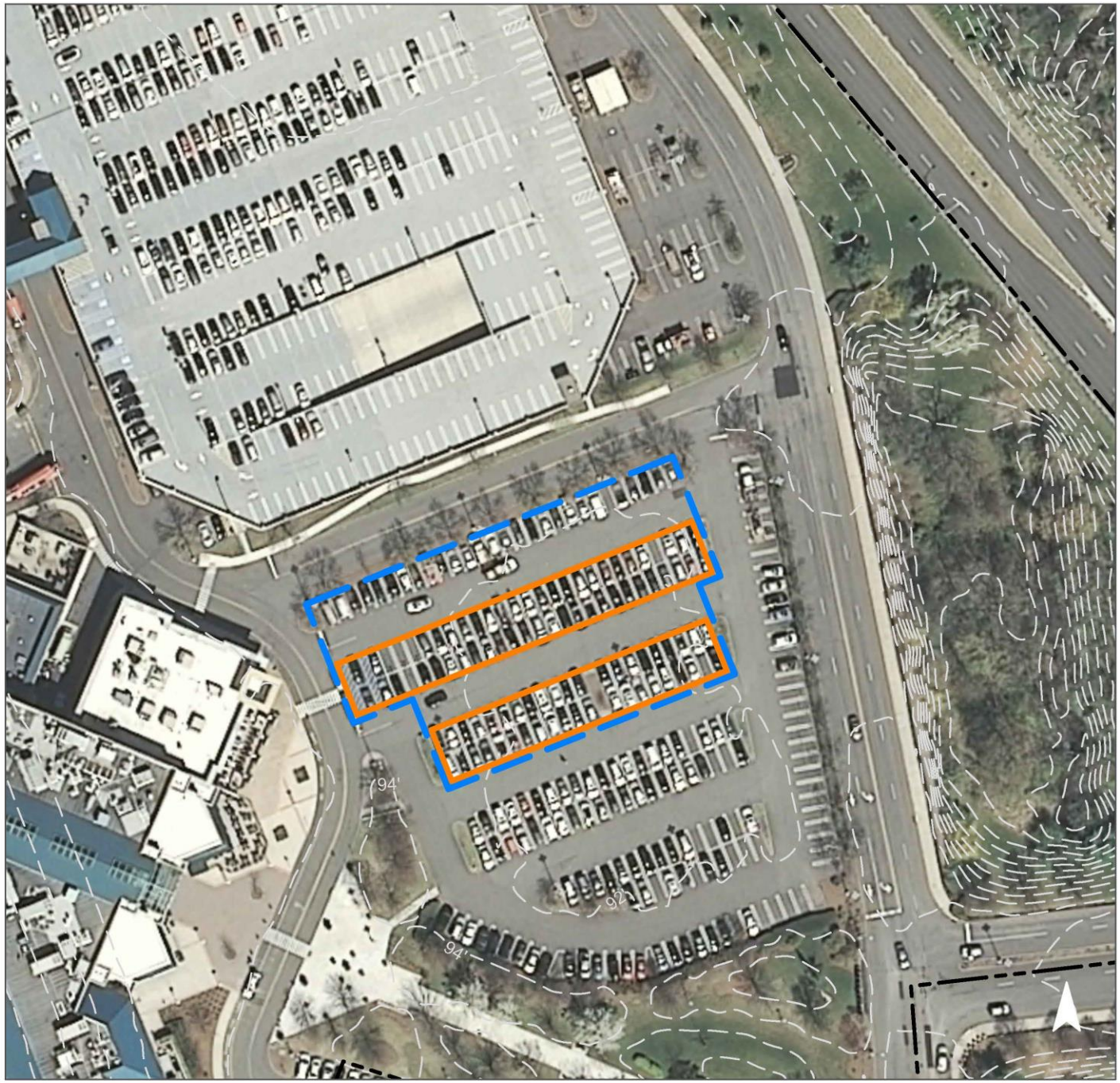
Block and Lot: Block 553, Lot 1

Along the east side of the mall, near the Lord & Taylor department store, pavement is eroded around existing catch basins. Parking spaces can be replaced with pervious pavement collect and infiltrate runoff before it reaches these catch basins. 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"
78	882,996	42.6	446.0	4,054.2	0.688	24.22

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavements	0.899	150	65,959	2.48	16,000	$400,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Bridgewater Commons (Main Mall)

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

0 50' 100'

BRIDGEWATER LIBRARY

Subwatershed: **Peters Brook**

Site Area: **321,681 sq. ft.**

Address: **1 Vogt Drive**
Bridgewater, NJ 08807

Block and Lot: **Block 577, Lot 1**

Rain gardens can be installed to 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"
43	139,676	6.7	70.5	641.3	0.109	3.83

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
Bioretention systems	0.152	25	11,145	0.42	1,480	$7,400

GREEN INFRASTRUCTURE RECOMMENDATIONS

Bridgewater Library

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

0 25' 100'

BRIDGEWATER-RARITAN HIGH SCHOOL

Subwatershed: Peters Brook

Site Area: 3,805,599 sq. ft.

Address: 600 Garretson Road
Bridgewater, NJ 08807

Block and Lot: Block 411, Lot 40

Rain gardens can be installed to capture, treat and infiltrate roof runoff. A rainwater harvesting system can also be installed under one of the downspouts on the north building, where there is an existing garden that can use the rainwater. 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"
30	1,131,828	54.6	571.6	5,196.6	0.882	31.04

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	0.463	78	33,974	1.28	4,540	$22,700
Rainwater harvesting systems	0.007	1	265	0.02	265 (gal)	$530

GREEN INFRASTRUCTURE RECOMMENDATIONS

Bridgewater-Raritan High School

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

0 75' 150'

BRIDGEWATER YMCA

Subwatershed: **Peters Brook**

Site Area: **531,171 sq. ft.**

Address: **601 Garretson Road**
Bridgewater, NJ 08807

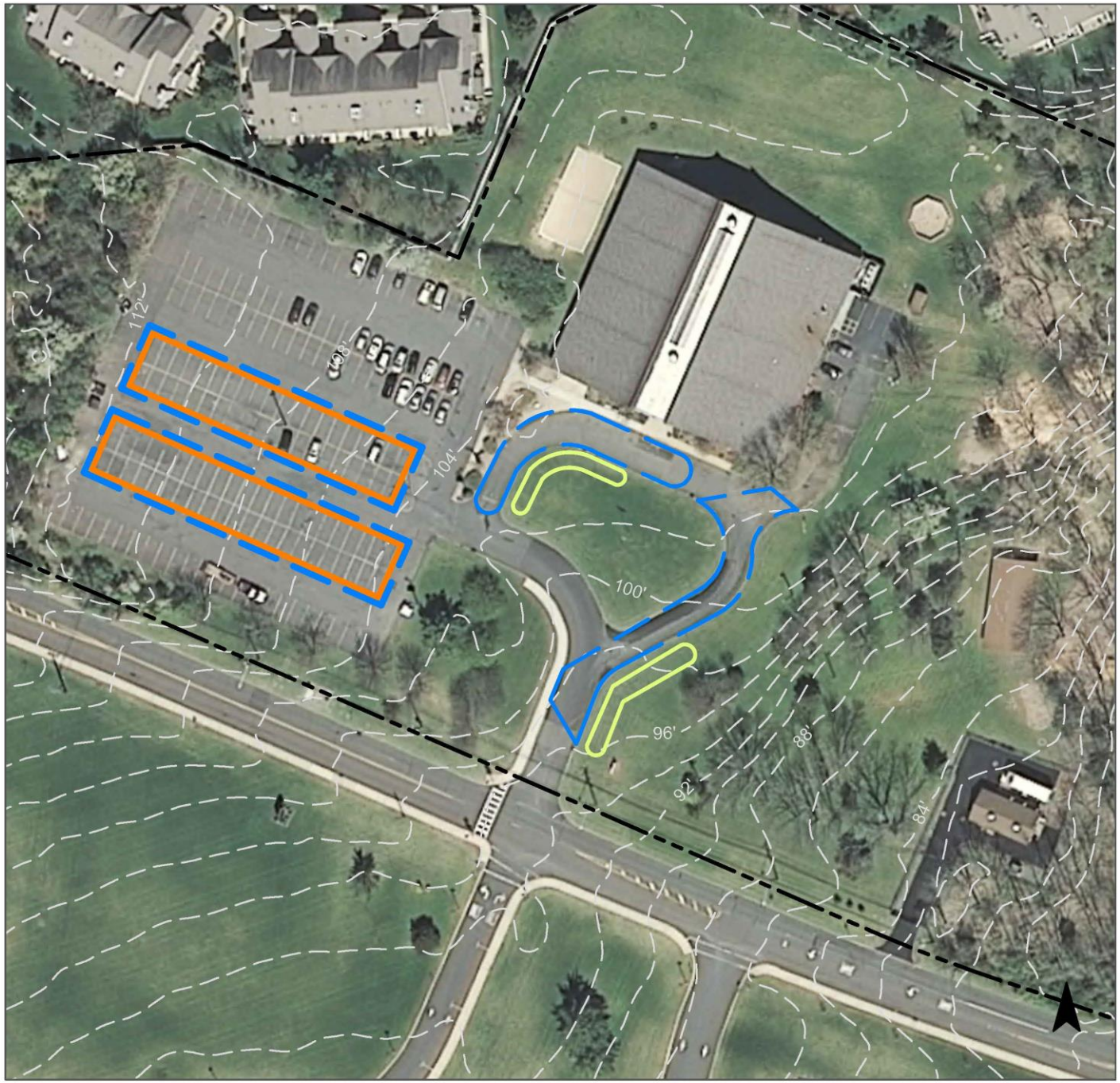
Block and Lot: **Block 472, Lot 74**

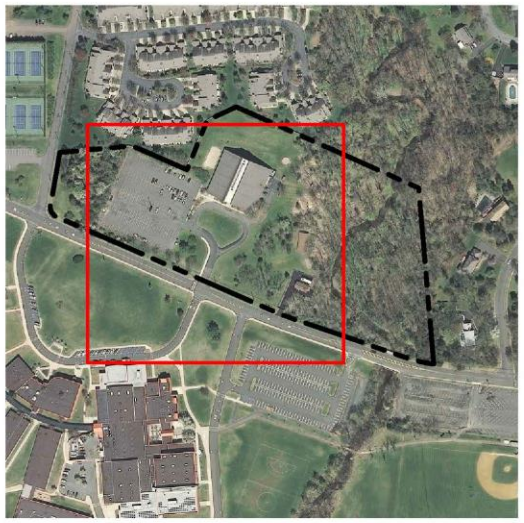
The parking lot is very eroded. Parking spaces can be replaced with pervious pavement to collect and infiltrate runoff. Two rain gardens can also be installed capture, treat, and infiltrate driveway runoff. A preliminary soil assessment suggests that more soil testing would be required before determining 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"
21	114,058	5.5	57.6	523.7	0.089	3.13

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	0.212	36	15,558	0.59	2,050	$10,250
Pervious pavements	0.484	81	35,500	1.33	14,700	$367,500

GREEN INFRASTRUCTURE RECOMMENDATIONS





Bridgewater YMCA

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

0 50' 100'

EVANGEL CHAPEL

Subwatershed: **Peters Brook**

Site Area: **331,326 sq. ft.**

Address: **505 New Jersey 28**
Bridgewater, NJ 08807

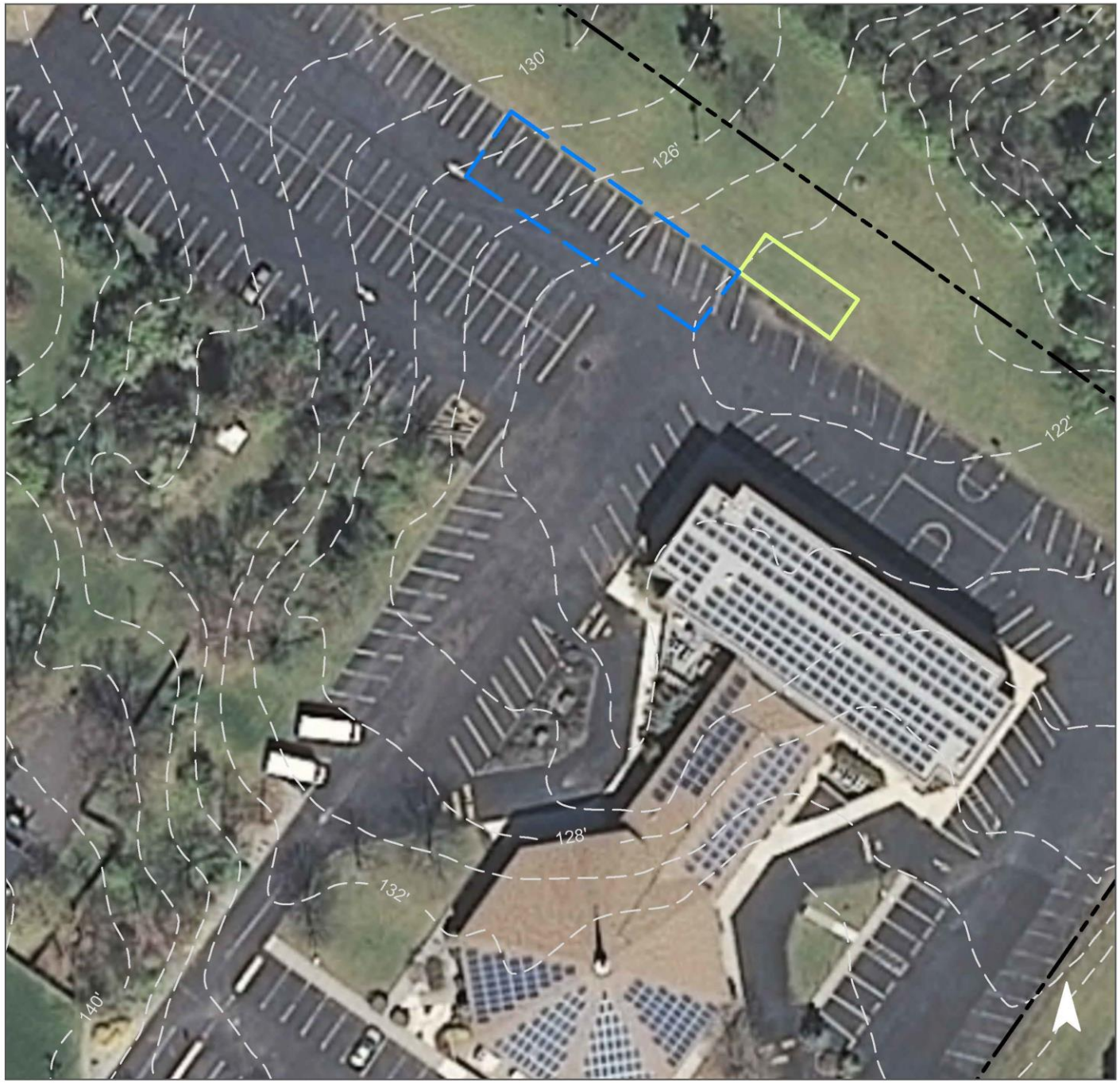
Block and Lot: **Block 400, Lot 28.01**

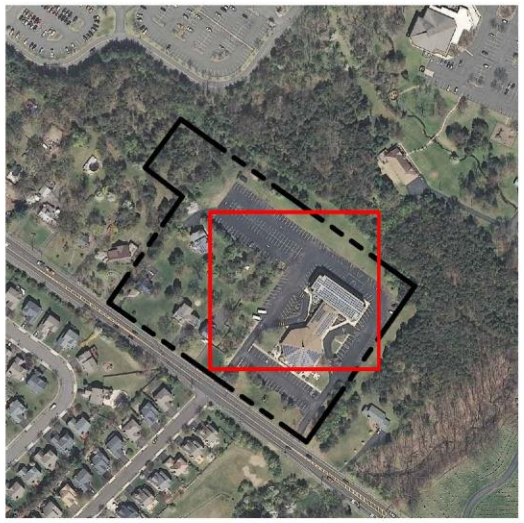
The northern parking lot drains to one catch basin in the northeast area of the site. A rain garden can be installed adjacent to the catch basin to capture, treat, and infiltrate stormwater runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green 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"
48	159,703	7.7	80.7	733.3	0.124	4.38

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	0.085	14	6,253	0.24	820	$4,100

GREEN INFRASTRUCTURE RECOMMENDATIONS





Evangel Chapel

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

0 30' 60'

GREEN KNOLL GOLF CLUB

Subwatershed: Peters Brook

Site Area: 6,653,596 sq. ft.

Address: 587 Garretson Road
Bridgewater, NJ 08807

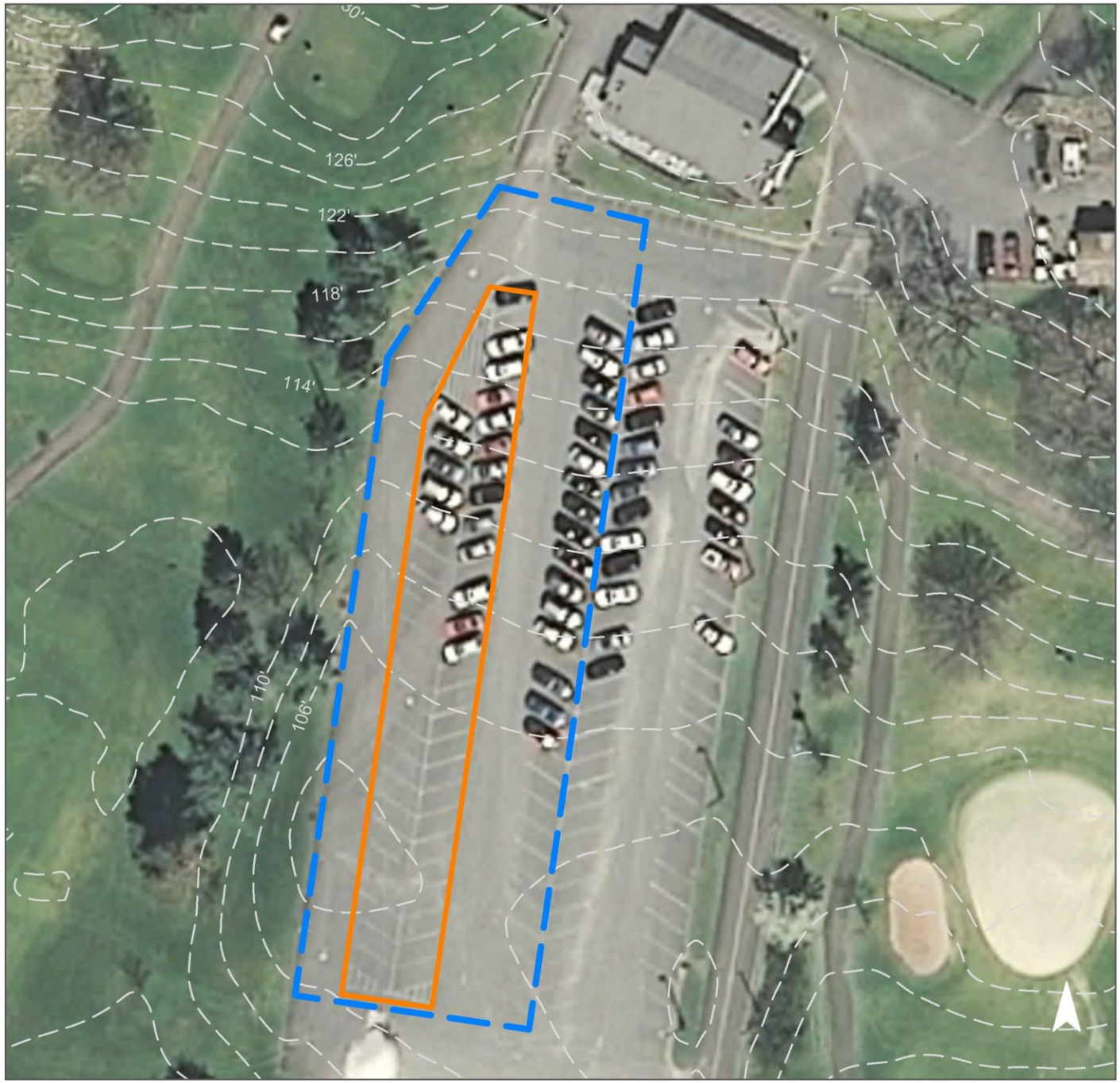
Block and Lot: Block 472, Lot 77

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"
2	150,051	7.2	75.8	688.9	0.117	4.12

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	0.754	126	55,345	2.08	9,700	$242,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



Green Knoll Golf Club

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

0 25' 50'

HILLSIDE INTERMEDIATE SCHOOL

Subwatershed: **Peters Brook**

Site Area: **865,461 sq. ft.**

Address: **844 Brown Road**
Bridgewater, NJ 08807

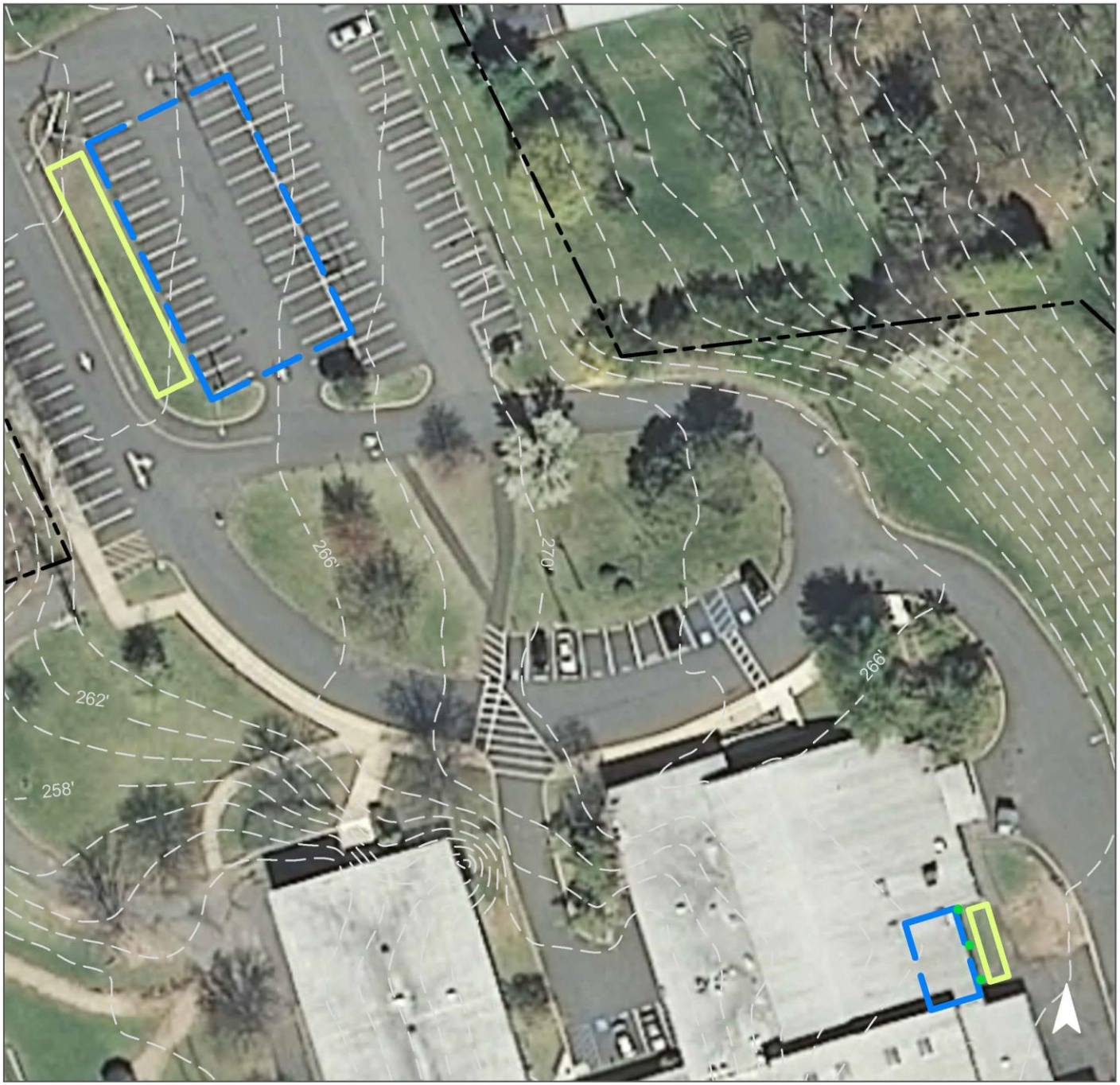
Block and Lot: **Block 624, Lot 6**

Rain gardens can be installed to capture, treat, and infiltrate parking lot and 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"
27	232,416	11.2	117.4	1,067.1	0.181	6.37

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	0.197	33	14,436	0.54	1,680	$8,400

GREEN INFRASTRUCTURE RECOMMENDATIONS



Hillside Intermediate School

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

0 30' 60'

SHIMON AND SARA JEWISH COMMUNITY CENTER

Subwatershed: Peters Brook

Site Area: 558,713 sq. ft.

Address: 775 Talamini Road
Bridgewater, NJ 08807

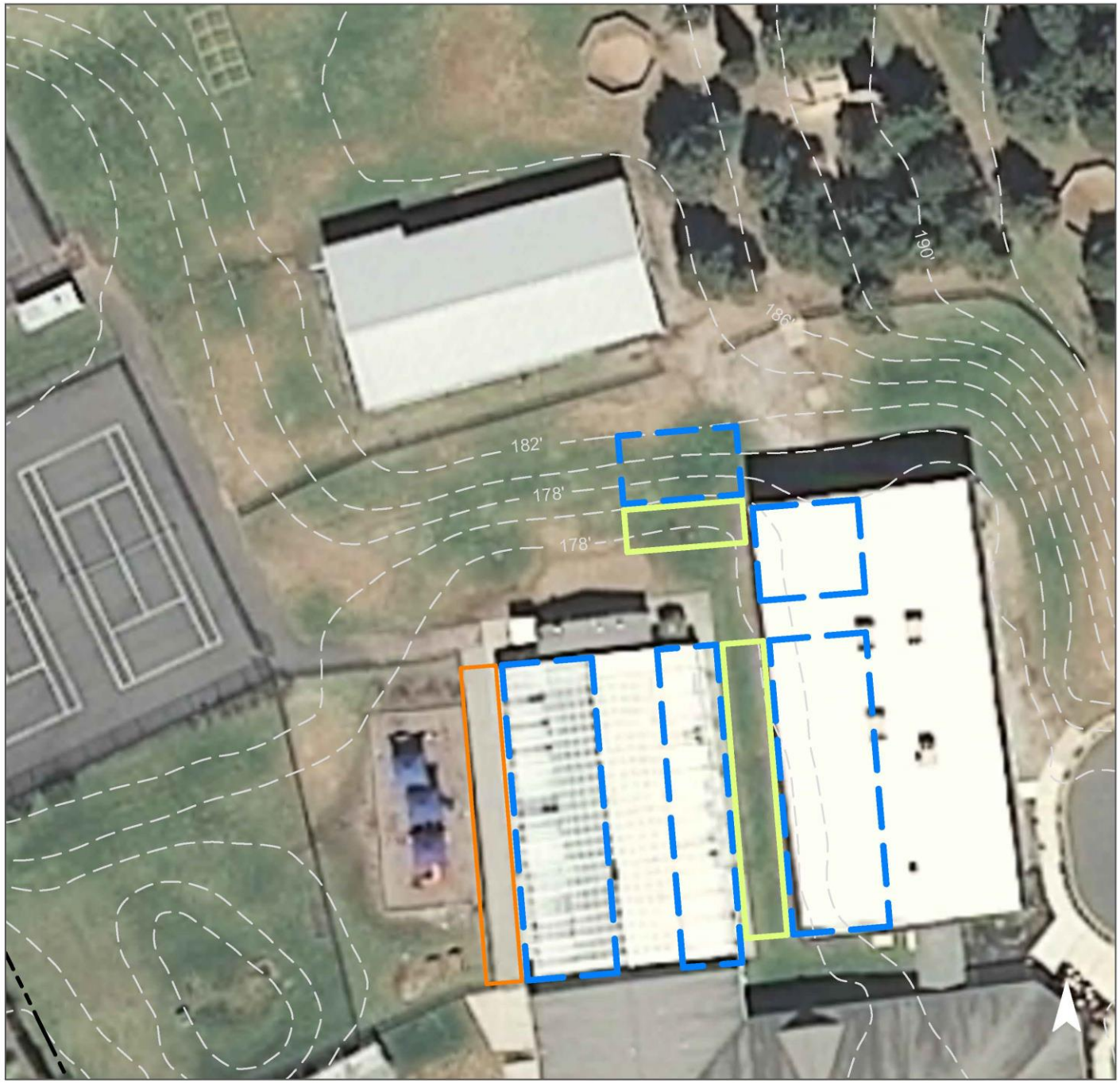
Block and Lot: Block 477, Lot 53

There is a sidewalk along the enclosed pool that is severely eroded, and can be replaced with pervious pavement to allow water to infiltrate. Rain gardens can also 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"
35	197,504	9.5	99.7	906.8	0.154	5.42

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.183	31	13,434	0.50	1,840	$9,200
Pervious pavements	0.080	13	5,872	0.22	1,200	$30,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Shimon and Sara Jewish Community Center

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

0 25' 50'

SOMERSET COUNTY VOCATIONAL & TECHNICAL SCHOOL

Subwatershed: **Peters Brook**

Site Area: **2,646,494 sq. ft.**

Address: **14 Vogt Drive**
Bridgewater, NJ 08807

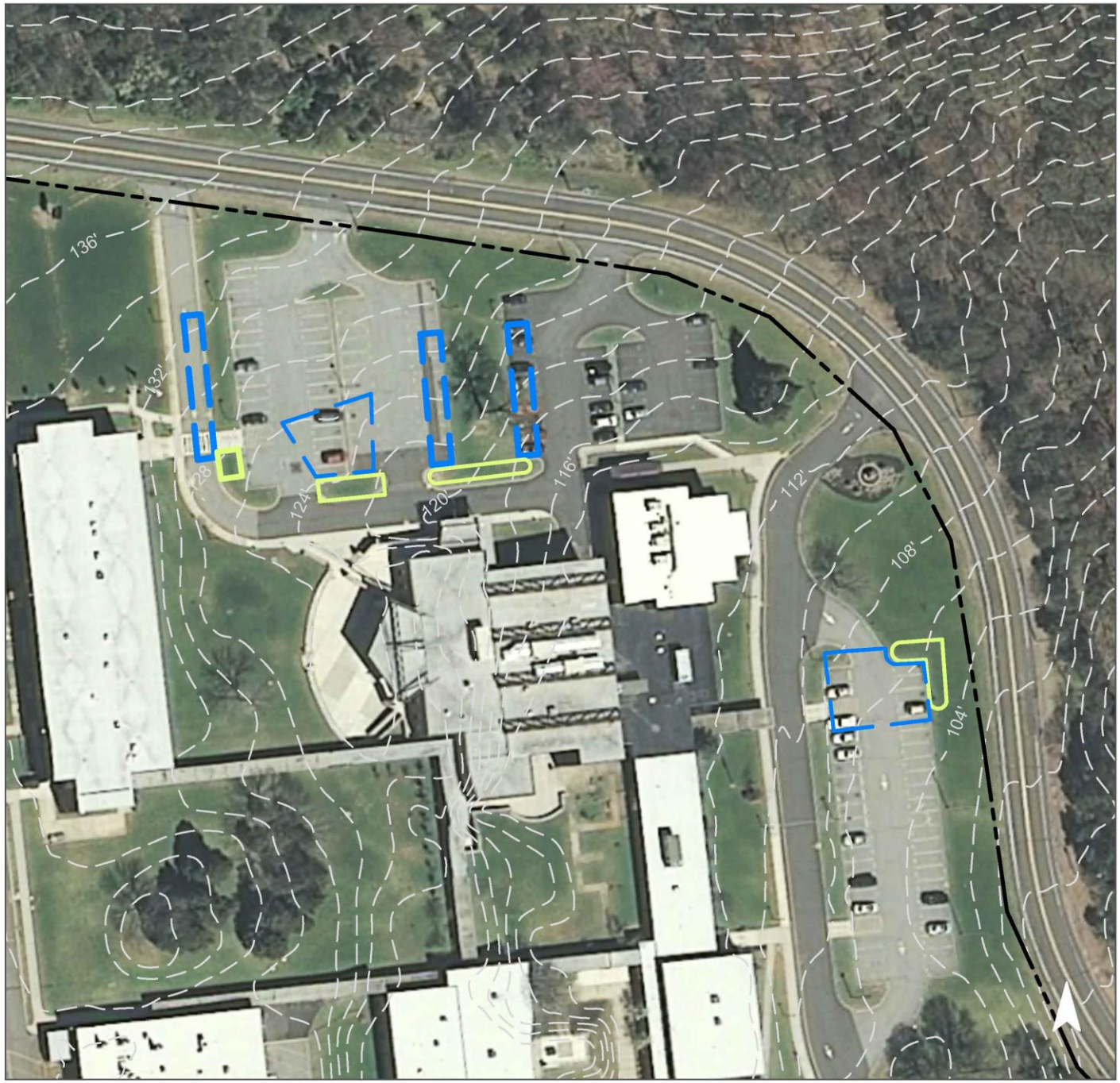
Block and Lot: **Block 557, Lot 3**

The northwest parking area drains towards the school. To capture, treat, and infiltrate this runoff, three curb cuts can be made, and bioretention systems can be installed. Along the eastern parking lot water drains southeast. A bioretention system can be installed along this parking lot to capture and treat 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"
24	648,205	31.2	327.4	2,976.1	0.505	17.78

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	0.220	37	16,157	0.61	2,160	$10,800

GREEN INFRASTRUCTURE RECOMMENDATIONS



Somerset County Vocational & Technical School

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

0 50' 100'

THE LITTLE GYM OF BRIDGEWATER

Subwatershed: Peters Brook

Site Area: 293,877 sq. ft.

Address: 1335 Prince Rogers Avenue
Bridgewater, NJ 08807

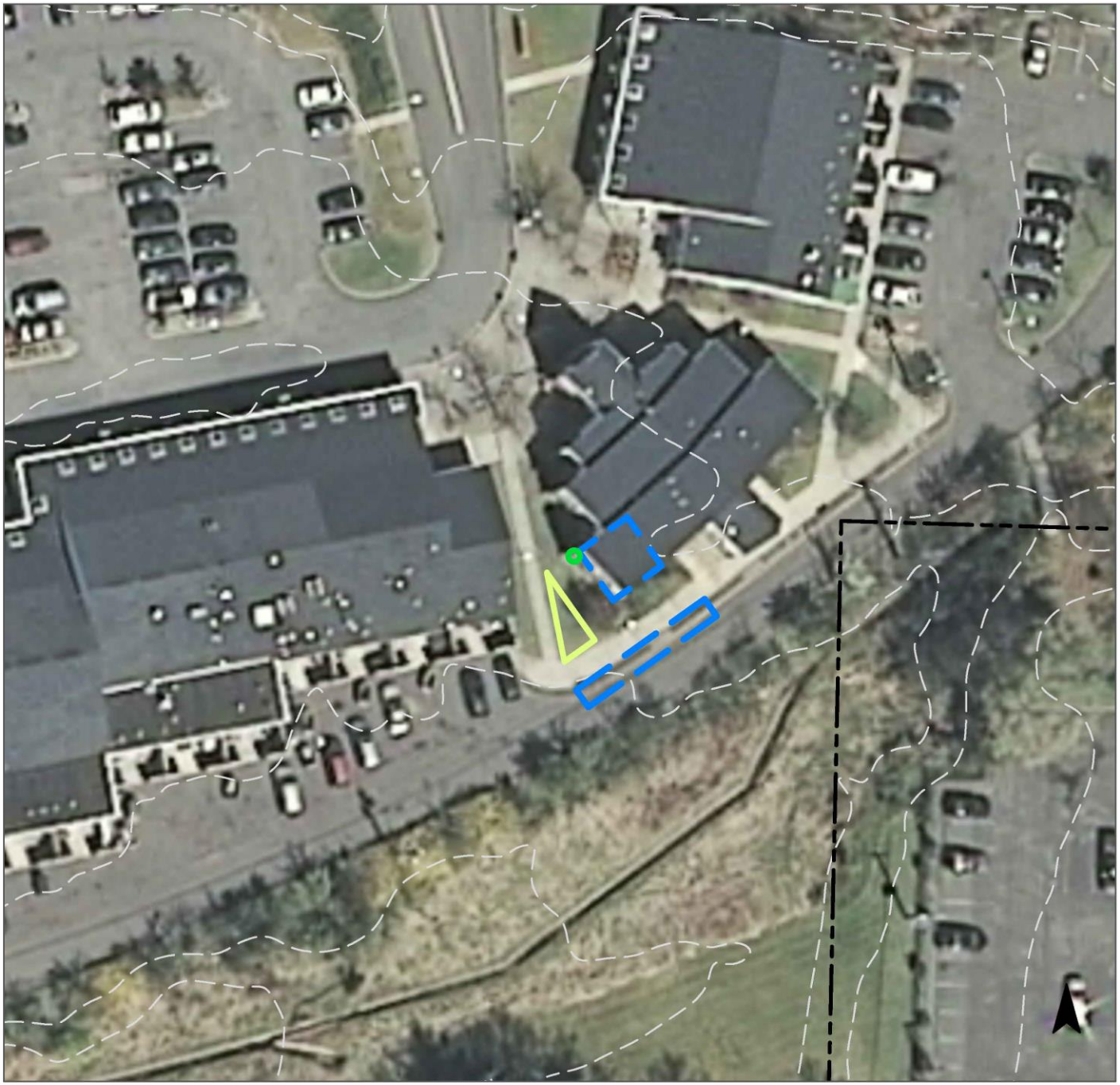
Block and Lot: Block 514, Lot 5

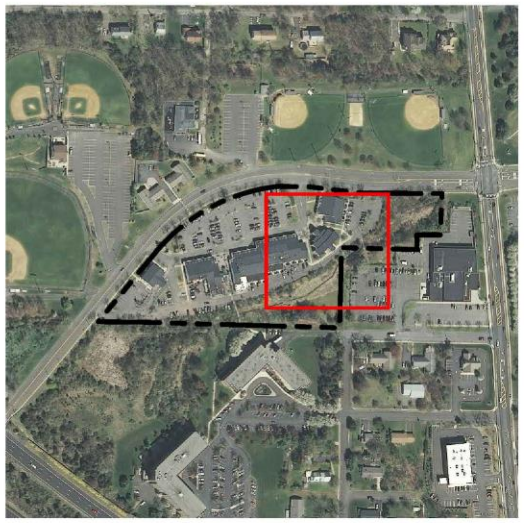
A rain garden can capture, treat, and infiltrate roof and driveway runoff. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

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"
67	197,339	9.5	99.7	906.3	0.154	5.41

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	0.019	3	1,399	0.05	165	$825

GREEN INFRASTRUCTURE RECOMMENDATIONS





The Little Gym of Bridgewater

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

0 25' 50'

EISENHOWER INTERMEDIATE SCHOOL

Subwatershed: Raritan River North Branch

Site Area: 1,022,902 sq. ft.

Address: 500 Roosevelt Street
Bridgewater, NJ 08807

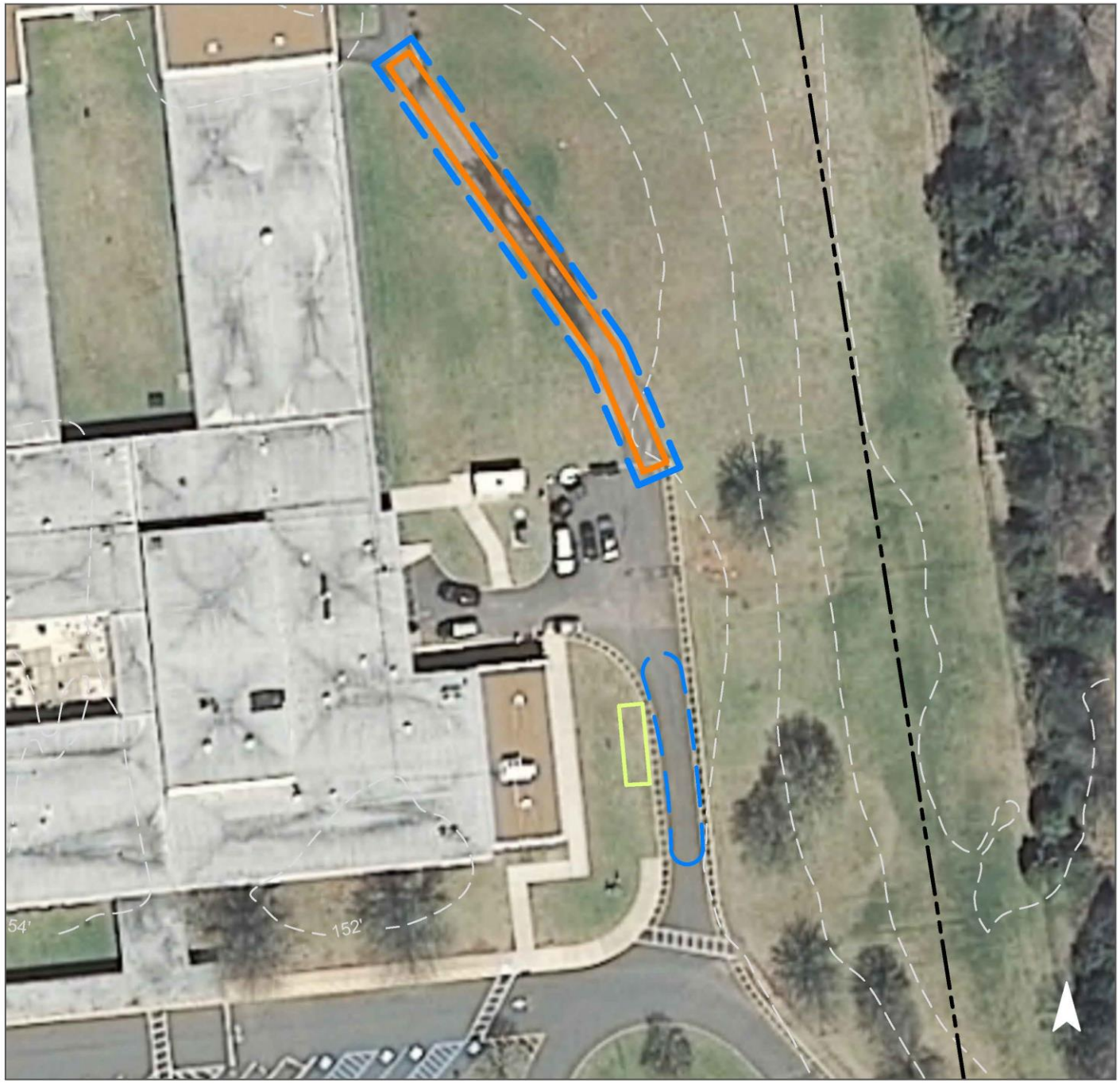
Block and Lot: Block 435, Lot 48

A rain garden can be installed on the east side of the school to mange runoff from the driveway. An area of eroded pavement can also be converted into 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"
26	266,851	12.9	134.8	1,225.2	0.208	7.32

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	0.028	5	2,042	0.08	300	$1,500
Pervious pavements	0.092	15	6,769	0.25	1,870	$46,750

GREEN INFRASTRUCTURE RECOMMENDATIONS



Eisenhower Intermediate School

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

0 30' 60'

HAMILTON PRIMARY SCHOOL

Subwatershed: Raritan River North Branch

Site Area: 782,220 sq. ft.

Address: 9 Hamilton Lane
Bridgewater, NJ 08807

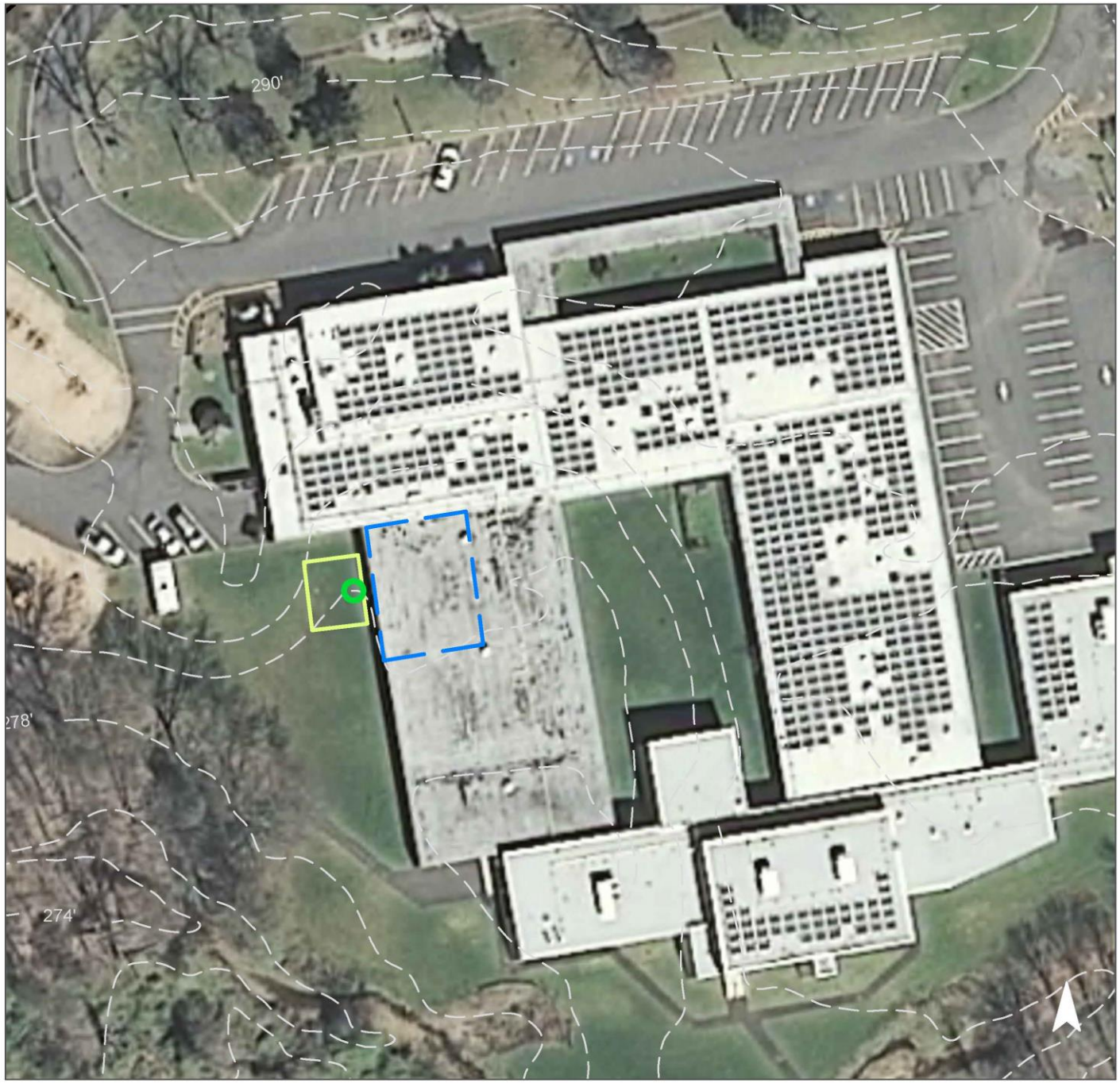
Block and Lot: Block 619, Lot 26

On the west side of the building, a downspout flows directly into a catch basin. A rain garden can be installed before the catch basin to intercept and treat the rooftop 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"
18	140,125	6.8	70.8	643.4	0.109	3.84

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	0.054	9	3,994	0.15	580	$2,900

GREEN INFRASTRUCTURE RECOMMENDATIONS



Hamilton Primary

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

0 30' 60'

MILLTOWN PRIMARY SCHOOL

Subwatershed: Raritan River North Branch

Site Area: 290,753 sq. ft.

Address: 611 Milltown Road
Bridgewater, NJ 08807

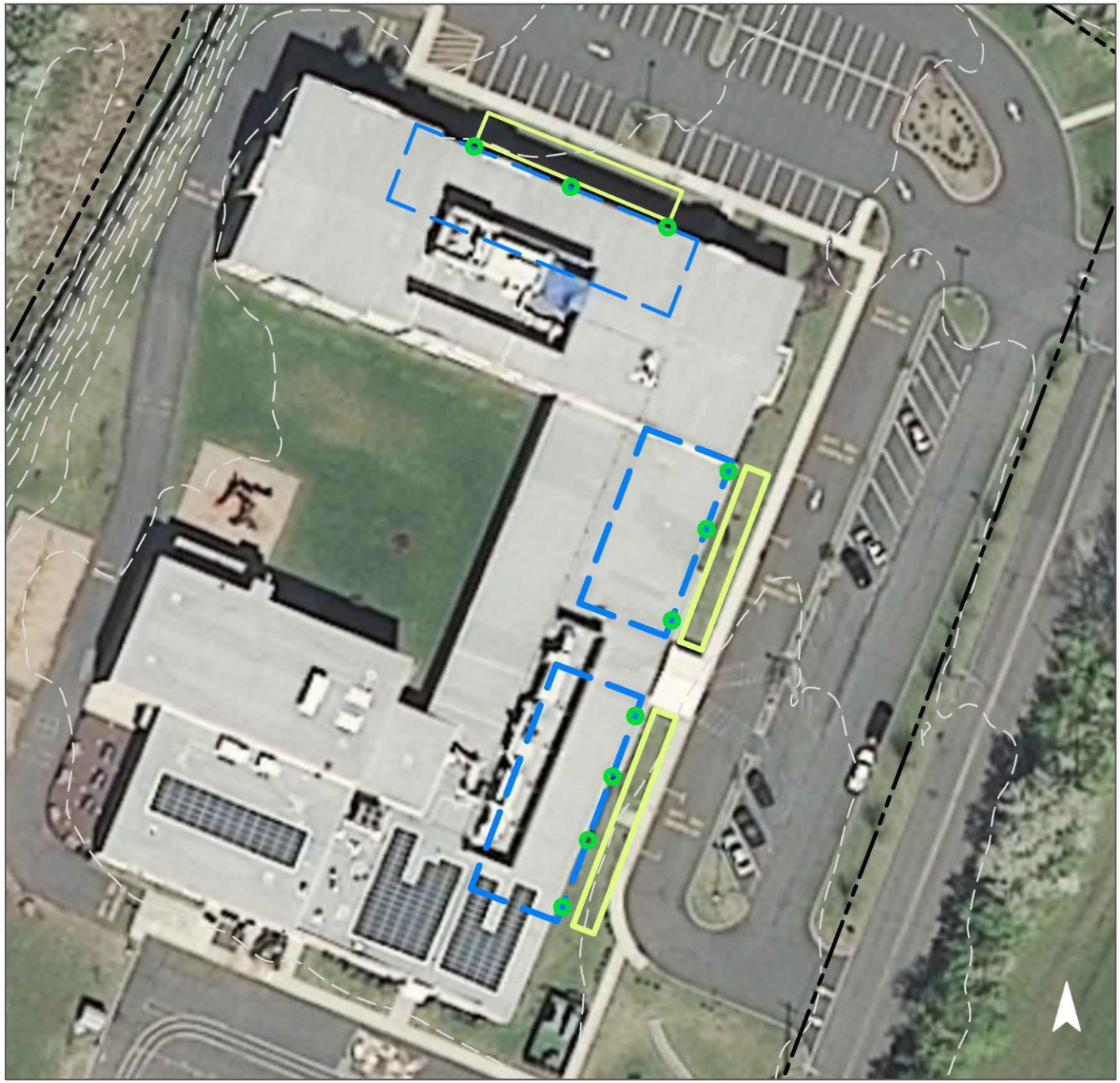
Block and Lot: Block 169, Lot 1.02

Downspouts can be disconnected and allowed to flow into rain gardens to capture, treat, and infiltrate rooftop 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"
51	147,461	7.1	74.5	677.0	0.115	4.04

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	0.257	43	1,795	0.68	2,500	$12,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



Milltown Primary School

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

0 30' 60'

VAN HOLTEN PRIMARY SCHOOL

Subwatershed: Raritan River North Branch

Site Area: 625,626 sq. ft.

Address: 360 Van Holten Road
Bridgewater, NJ 08807

Block and Lot: Block 418.02, Lot 16

A row of parking spaces can be replaced with pervious pavement to capture, and infiltrate stormwater runoff. A rain garden by the roofed walkway can also be built to capture, treat, 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"
31	193,843	9.3	97.9	890.0	0.151	5.32

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	0.021	3	1,526	0.06	280	$1,400
Pervious pavements	0.251	42	18,446	0.69	3,060	$76,500

GREEN INFRASTRUCTURE RECOMMENDATIONS

Van Holten Primary School

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

0 50' 100'

d. Summary of Existing Conditions

Summary of Existing Site Conditions

Subwatershed/Site Name/Total Site Info/GI Practice	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)
CUCKELS BROOK SUBWATERSHED	**3,211,297**			**46.1**	**483.2**	**4,393.16**		**21.97**	**956,831**	**0.746**	**26.24**
Adamsville Primary											
Total Site Info	761,941	249	41	14.8	155.0	1,409.2	40	7.05	306,933	0.239	8.42
Bridgewater-Raritan Middle School											
Total Site Info	2,223,717	565	19	26.3	275.6	2,505.0	25	12.53	545,598	0.425	14.96
Houlihan's											
Total Site Info	225,640	222	6	5.0	52.7	478.9	46	2.39	104,300	0.081	2.86
MIDDLE BROOK SUBWATERSHED	**524,171**			**8.3**	**87.2**	**792.5**		**3.96**	**172,607**	**0.134**	**4.73**
Crim Primary											
Total Site Info	524,171	652	74	8.3	87.2	792.5	33	3.96	172,607	0.134	4.73
PETERS BROOK SUBWATERSHED	**17,138,302**			**185.79**	**1,946.4**	**17,694.4**		**88.47**	**3,853,836**	**3.003**	**105.70**
Bridgewater Commons (Main mall)											
Total Site Info	1,130,383	553	1	42.6	446.0	4,054.2	78	20.27	882,996	0.688	24.22
Bridgewater Library											
Total Site Info	321,681	577	1	6.7	70.5	641.3	43	3.21	139,676	0.109	3.83
Bridgewater-Raritan High School											
Total Site Info	3,805,599	411	40	54.6	571.6	5,196.6	30	25.98	1,131,828	0.882	31.04
Bridgewater YMCA											
Total Site Info	531,171	472	74	5.5	57.6	523.7	21	2.62	114,058	0.089	3.13
Evangel Chapel											
Total Site Info	331,326	400	28.01	7.7	80.7	733.3	48	3.67	159,703	0.124	4.38
Green Knoll Golf Club											
Total Site Info	6,653,596	472	77	7.2	75.8	688.9	2	3.44	150,051	0.117	4.12

Summary of Existing Site Conditions

Subwatershed/Site Name/Total Site Info/GI Practice	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)
Hillside Intermediate School											
Total Site Info	865,461	624	6	11.2	117.4	1,067.1	27	5.34	232,416	0.181	6.37
Shimon and Sara Jewish Community Center											
Total Site Info	558,713	477	53	9.5	99.7	906.8	35	4.53	197,504	0.154	5.42
Somerset County Vocational & Technical Schools											
Total Site Info	2,646,494	557	3	31.2	327.4	2,976.1	24	14.88	648,205	0.505	17.78
The Little Gym of Bridgewater											
Total Site Info	293,877	514	5	9.5	99.7	906.3	67	4.53	197,399	0.154	5.41
RARITAN RIVER NORTH BRANCH SUBWATERSHED	**2,721,502**			**36.1**	**377.9**	**3,435.6**		**17.18**	**748,280**	**0.583**	**20.52**
Eisenhower Intermediate School											
Total Site Info	1,022,902	435	48	12.9	134.8	1,225.2	26	6.13	266,851	0.208	7.32
Hamilton Primary School											
Total Site Info	782,220	619	26	6.8	70.8	643.4	18	3.22	140,125	0.109	3.84
Milltown Primary School											
Total Site Info	290,753	169	1.02	7.1	74.5	677.0	51	3.39	147,461	0.115	4.04
Van Holten Primary School											
Total Site Info	625,626	418.02	16	9.3	97.9	890.0	31	4.45	193,843	0.151	5.32

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	TSS Removal Potential	Max Volume Reduction Potential	Peak Discharge Reduction Potential	Size of BMP	Unit Cost	Unit	Total Cost	I.C. Treated
		Area (SF)	Area (ac)	(Mgal/yr)	(lbs/yr)	(gal/storm)	(cfs)	(SF)	($)		($)	%
	CUCKELS BROOK SUBWATERSHED	**113,100**	**2.60**	**2.947**	**493**	**213,991**	**8.12**	**28,650**			**$517,250**	**11.8%**
1	**Adamsville Primary**											
	Bioretention systems/ rain gardens	6,850	0.16	0.178	30	13,097	0.49	1,870	5	SF	$9,350	2.2%
	Pervious pavements	15,750	0.36	0.410	69	30,114	1.13	4,000	25	SF	$100,000	5.1%
	Rainwater harvesting systems	2,220	0.05	0.058	10	2,000	0.16	2,000	2	gal	$4,000	0.7%
	Total Site Info	**24,820**	**0.57**	**0.647**	**108**	**45,212**	**1.78**	**7,870**			**$113,350**	**8.1%**
2	**Bridgewater-Raritan Middle School**											
	Bioretention systems/ rain gardens	18,000	0.41	0.469	79	34,415	1.29	4,700	5	SF	$23,500	3.3%
	Pervious pavements	66,200	1.52	1.725	289	126,562	4.76	15,000	25	SF	$375,000	12.1%
	Total Site Info	**84,200**	**1.93**	**2.194**	**367**	**160,977**	**6.05**	**19,700**			**$398,500**	**15.4%**
3	**Houlihan's**											
	Bioretention systems/ rain gardens	4,080	0.09	0.106	18	7,802	0.29	1,080	5	SF	$5,400	3.9%
	Total Site Info	**4,080**	**0.09**	**0.106**	**18**	**7,802**	**0.29**	**1,080**			**$5,400**	**3.9%**
	MIDDLE BROOK SUBWATERSHED	**16,300**	**0.37**	**0.425**	**71**	**31,124**	**1.17**	**5,300**			**$52,500**	**9.4%**
4	**Crim Primary**											
	Bioretention systems/ rain gardens	12,200	0.28	0.318	53	23,323	0.88	4,000	5	SF	$20,000	7.1%
	Pervious pavements	4,100	0.09	0.107	18	7,802	0.29	1,300	25	SF	$32,500	2.4%
	Total Site Info	**16,300**	**0.37**	**0.425**	**71**	**31,124**	**1.17**	**5,300**			**$52,500**	**9.4%**
	PETERS BROOK SUBWATERSHED	**144,130**	**3.31**	**3.755**	**629**	**275,297**	**10.36**	**56,600**			**$76,532**	**3.7%**
5	**Bridgewater Commons (Main mall)**											
	Pervious pavements	34,500	0.79	0.899	150	65,959	2.48	16,000	25	SF	$400,000	3.9%
	Total Site Info	**34,500**	**0.79**	**0.899**	**150**	**65,959**	**2.48**	**16,000**			**$400,000**	**3.9%**
6	**Bridgewater Library**											
	Bioretention systems/ rain gardens	5,830	0.13	0.152	25	11,145	0.42	1,480	5	SF	$7,400	4.2%
	Total Site Info	**5,830**	**0.13**	**0.152**	**25**	**11,145**	**0.42**	**1,480**			**$7,400**	**4.2%**

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)									
7	**Bridgewater-Raritan High School**											
	Bioretention systems/ rain gardens	17,770	0.41	0.463	78	33,974	1.28	4,540	5	SF	$22,700	1.6%
	Rainwater harvesting systems	280	0.01	0.007	1	265	0.02	265	2	gal	$530	0.0%
	Total Site Info	**18,050**	**0.41**	**0.470**	**79**	**34,239**	**1.30**	**4,805**			**$23,230**	**1.6%**
8	**Bridgewater YMCA**											
	Bioretention systems/ rain gardens	8,140	0.19	0.212	36	15,558	0.59	2,050	5	SF	$10,250	7.1%
	Pervious pavements	18,570	0.43	0.484	81	35,500	1.33	14,700	25	SF	$367,500	16.3%
	Total Site Info	**26,710**	**0.61**	**0.696**	**117**	**51,058**	**1.92**	**16,750**			**$377,750**	**23.4%**
9	**Evangel Chapel**											
	Bioretention systems/ rain gardens	3,270	0.08	0.085	14	6,253	0.24	820	5	SF	$4,100	2.0%
	Total Site Info	**3,270**	**0.08**	**0.085**	**14**	**6,253**	**0.24**	**820**			**$4,100**	**2.0%**
10	**Green Knoll Golf Club**											
	Pervious pavements	28,950	0.66	0.754	126	55,345	2.08	9,700	25	SF	$242,500	19.3%
	Total Site Info	**28,950**	**0.66**	**0.754**	**126**	**55,345**	**2.08**	**9,700**			**$242,500**	**19.3%**
11	**Hillside Intermediate School**											
	Bioretention systems/ rain gardens	7,550	0.17	0.197	33	14,436	0.54	1,680	5	SF	$8,400	3.2%
	Total Site Info	**7,550**	**0.17**	**0.197**	**33**	**14,436**	**0.54**	**1,680**			**$8,400**	**3.2%**
12	**Shimon and Sara Jewish Community Center**											
	Bioretention systems/ rain gardens	7,025	0.16	0.183	31	13,434	0.50	1,840	5	SF	$9,200	3.6%
	Pervious pavements	3,065	0.07	0.080	13	5,872	0.22	1,200	25	SF	$30,000	1.6%
	Total Site Info	**10,090**	**0.23**	**0.263**	**44**	**19,306**	**0.72**	**3,040**			**$39,200**	**5.1%**
13	**Somerset County Vocational & Technical School**											
	Bioretention systems/ rain gardens	8,450	0.19	0.220	37	16,157	0.61	2,160	5	SF	$10,800	1.3%
	Total Site Info	**8,450**	**0.19**	**0.220**	**37**	**16,157**	**0.61**	**2,160**			**$10,800**	**1.3%**
14	**The Little Gym of Bridgewater**											
	Bioretention systems/ rain gardens	730	0.02	0.019	3	1,399	0.05	165	5	SF	$825	0.4%
	Total Site Info	**730**	**0.02**	**0.019**	**3**	**1,399**	**0.05**	**165**			**$825**	**0.4%**

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 %
	RARITAN RIVER NORTH BRANCH SUBWATERSHED	**27,025**	**0.62**	**0.704**	**118**	**34,573**	**1.91**	**8,590**			**$141,550**	**3.6%**
15	**Eisenhower Intermediate School**											
	Bioretention systems/ rain gardens	1,070	0.02	0.028	5	2,042	0.08	300	5	SF	$1,500	0.4%
	Pervious pavements	3,540	0.08	0.092	15	6,769	0.25	1,870	25	SF	$46,750	1.3%
	Total Site Info	**4,610**	**0.11**	**0.120**	**20**	**8,811**	**0.33**	**2,170**			**$48,250**	**1.7%**
16	**Hamilton Primary School**											
	Bioretention systems/ rain gardens	2,090	0.05	0.054	9	3,994	0.15	580	5	SF	$2,900	1.5%
	Total Site Info	**2,090**	**0.05**	**0.054**	**9**	**3,994**	**0.15**	**580**			**$2,900**	**1.5%**
17	**Milltown Primary School**											
	Bioretention systems/ rain gardens	9,875	0.23	0.257	43	1,795	0.68	2,500	5	SF	$12,500	6.7%
	Total Site Info	**9,875**	**0.23**	**0.257**	**43**	**1,795**	**0.68**	**2,500**			**$12,500**	**6.7%**
18	**Van Holten Primary School**											
	Bioretention systems/ rain gardens	800	0.02	0.021	3	1,526	0.06	280	5	SF	$1,400	0.4%
	Pervious pavements	9,650	0.22	0.251	42	18,446	0.69	3,060	25	SF	$76,500	5.0%
	Total Site Info	**10,450**	**0.24**	**0.272**	**46**	**19,972**	**0.75**	**3,340**			**$77,900**	**5.4%**