RUTGERS
New Jersey Agricultural
Experiment Station

Green Infrastructure Action Plan
for
Hamilton Township, Atlantic County, New Jersey

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

April 19, 2021

ACKNOWLEDGEMENTS:

This document has been prepared by the Rutgers Cooperative Extension Water Resources Program, primarily funded by the 2020 Atlantic City Electric Sustainable Communities Grants Program, with funding and direction from The Sustainable Township of Hamilton Green Team and the New Jersey Agricultural Experiment Station, to highlight green infrastructure opportunities within Hamilton Township. We would like to thank The Sustainable Township of Hamilton Green Team, the New Jersey Agricultural Experiment Station, and Hamilton Township for their input and support in creating this document.

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Introduction

Located in Atlantic County, New Jersey, Hamilton Township covers approximately 113 square miles. Figures 1 and 2 illustrate that Hamilton Township is dominated by forest land use. A total of 11.8% of the municipality's land use is classified as urban. Of the urban land in Hamilton Township, rural residential is the dominant land use (Figure 3).

The New Jersey Department of Environmental Protection's (NJDEP) 2015 land use/land cover geographical information system (GIS) data layer categorizes Hamilton 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 Hamilton Township. Based upon the 2015 NJDEP land use/land cover data, approximately 5.2% of Hamilton Township has impervious cover. This level of impervious cover suggests that the streams in Hamilton Township are likely sensitive streams. [1]

Methodology

Hamilton Township contains portions of 15 subwatersheds (Figure 4). For this green infrastructure action plan, projects have been identified in four of these subwatersheds. 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] Schuler, T.R., L. Fraley-McNeal, and K. Cappiella. 2009. Is Impervious Cover Still Important? Review of Recent Research. *Journal of Hydrologic Engineering* 14 (4): 309-315.

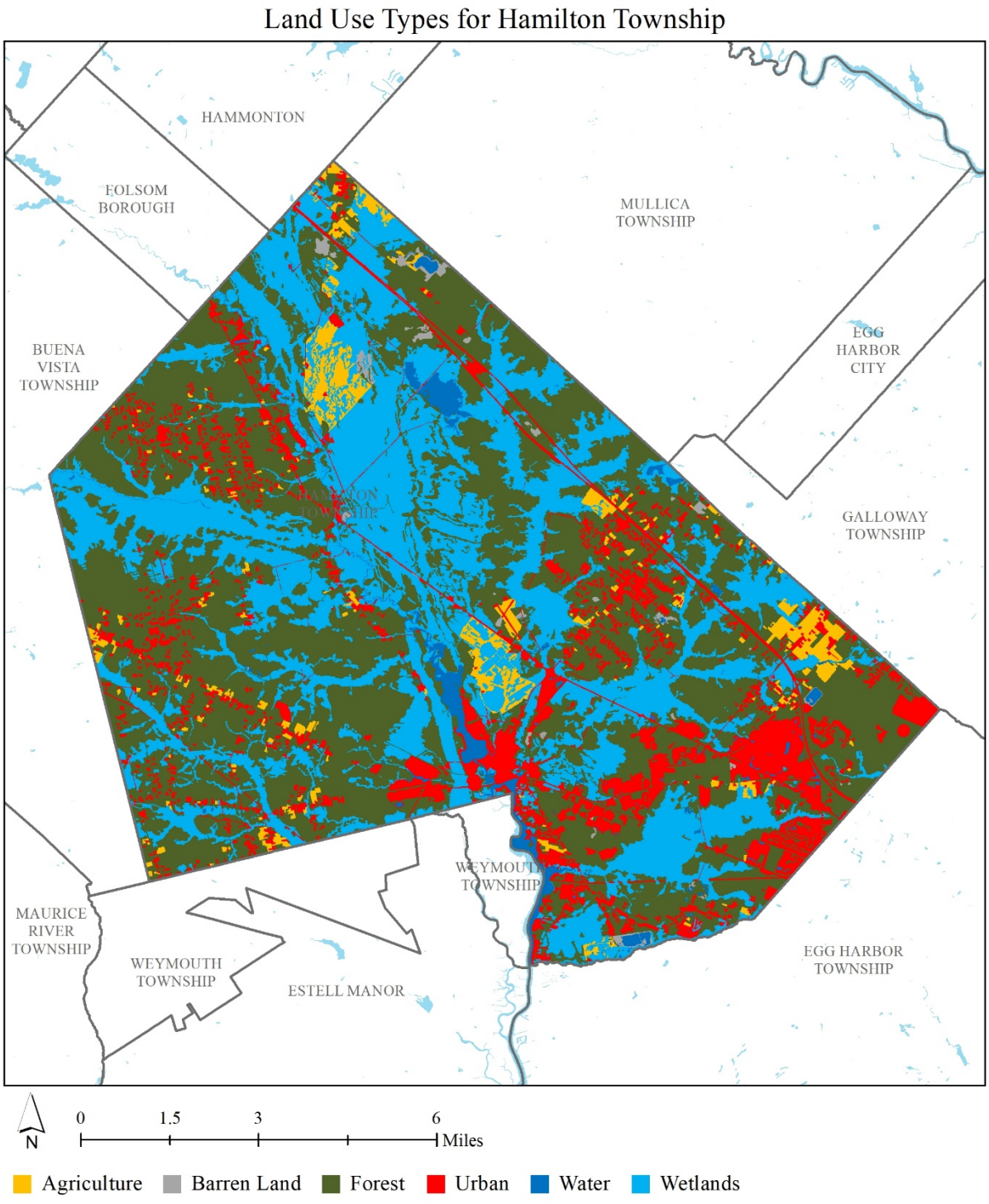


Figure 1: Map illustrating the land use in Hamilton Township

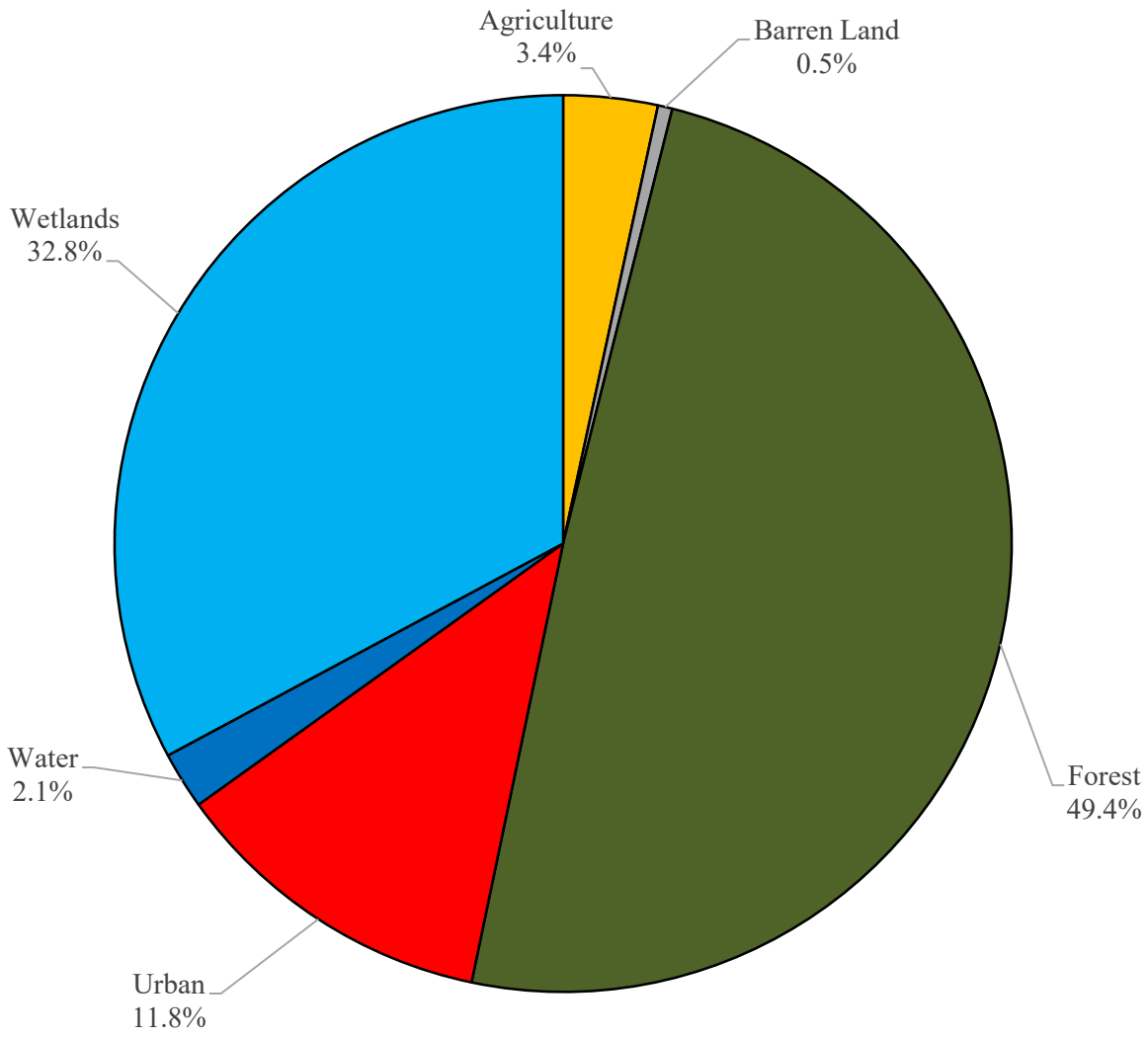


Figure 2: Pie chart illustrating the land use in Hamilton Township

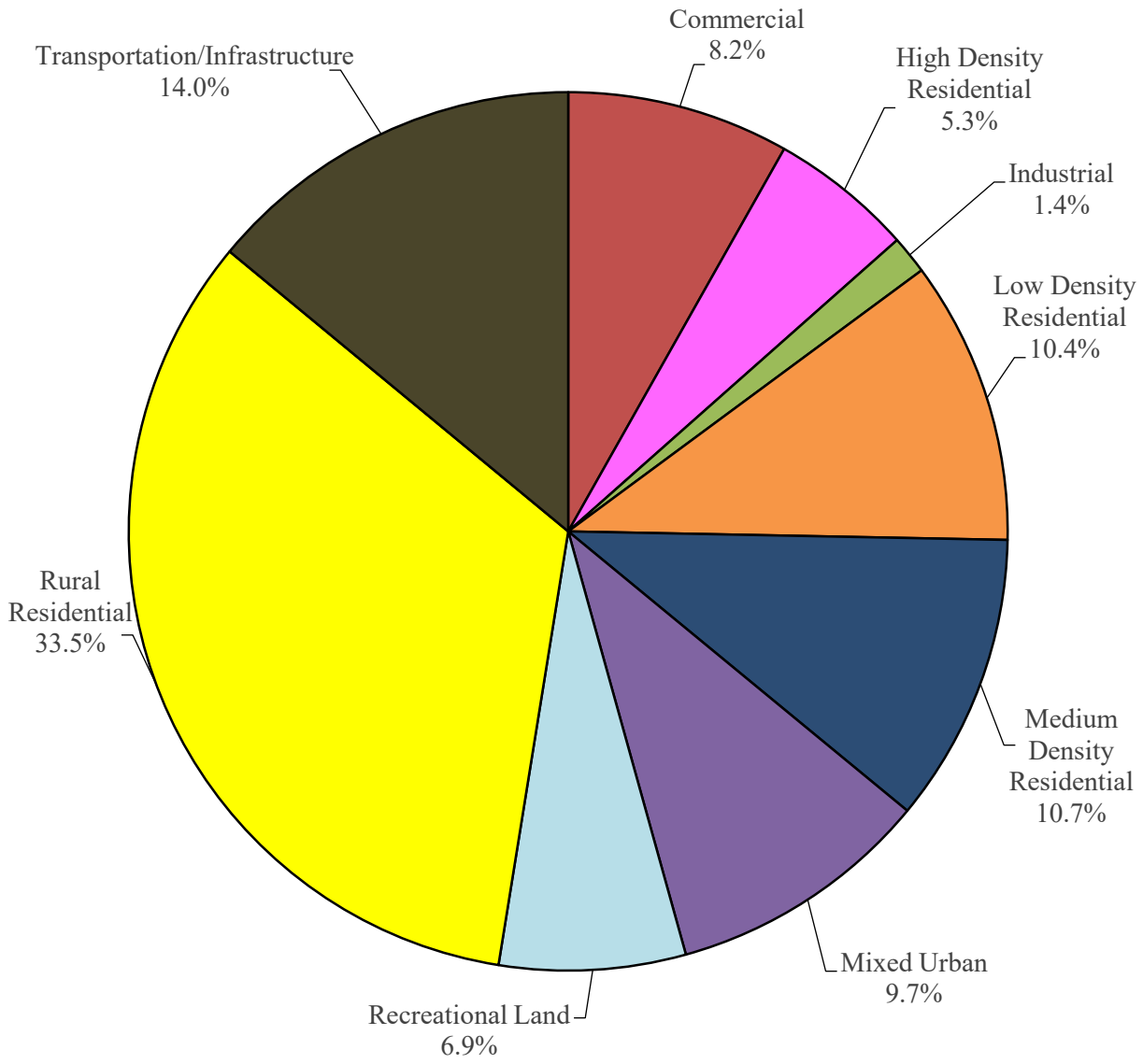


Figure 3: Pie chart illustrating the various types of urban land use in Hamilton Township

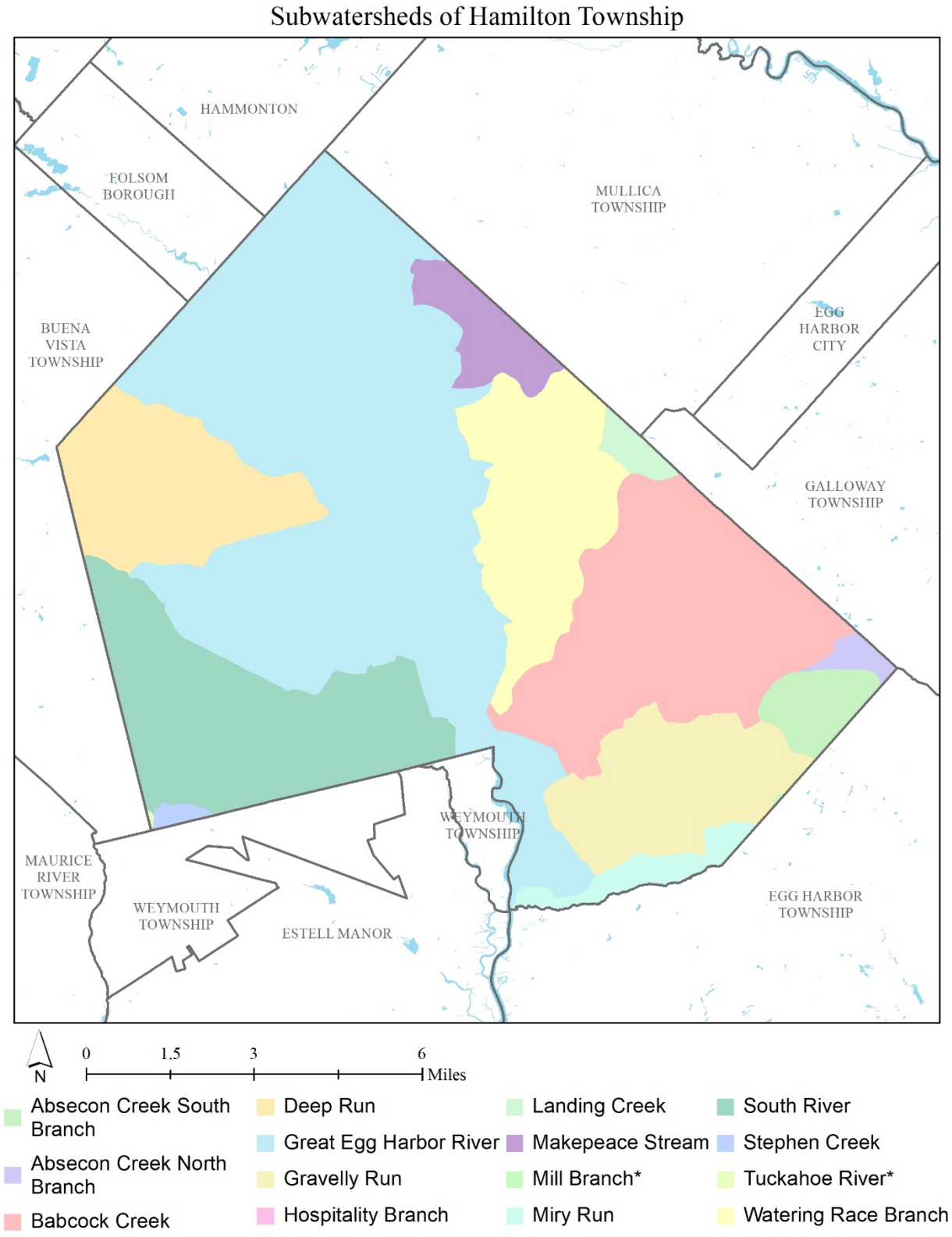


Figure 4: Map of the subwatersheds in Hamilton Township

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 2015 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 Hamilton 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 principle, 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 Hamilton Township 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 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.

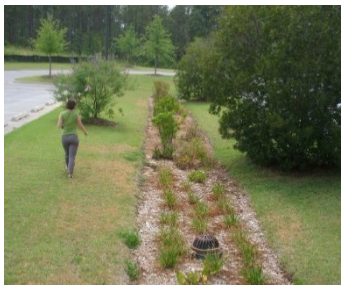
Downspout planter boxes

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

Appendix A contains information on potential project sites where green infrastructure practices could be installed as well as information on existing site conditions. The recommended green infrastructure practices and the drainage area that the green infrastructure practices can treat are identified for each potential project site. For each practice, the recharge potential, TSS removal potential, maximum volume reduction potential per storm, the peak reduction potential, and estimated costs 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*.

Funding Strategy, Implementation Agenda, and Community Engagement

The Sustainable Township of Hamilton Green Team will create a green infrastructure subcommittee that meets monthly to discuss opportunities for projects and coordinates the implementation of projects. The goal is to install five to ten projects per year and possibly increase this number as funding becomes available. Projects can be designed throughout the year with most being installed in the spring, summer, and fall. These are exciting times for Hamilton Township as they hope to be on the forefront of the green infrastructure movement.

Funding Sources

Hamilton Township is committed to implementing green infrastructure throughout the municipality and is currently partnering with the Rutgers Cooperative Extension (RCE) Water Resources Program on a municipal-wide green infrastructure initiative. A source of funding would be through local, state, and federal grant programs. The NJDEP provides some grant funding for stormwater management projects. Other groups like the National Fish and Wildlife Foundation, US Environmental Protection Agency, Sustainable Jersey, and ANJEC (Association of New Jersey Environmental Commissions) have also provided grant funding for stormwater management projects in the past. Private foundations could be another source of funding for designing and building green infrastructure projects. The final possible source of funding is the New Jersey Water Bank (formerly known as the Environmental Infrastructure Trust) Financing Program. This program provides low interest loans for water projects. Hamilton Township could seek funding from the New Jersey Water Bank for green infrastructure projects.

Incentive Programs

Hamilton Township may pursue a rain garden rebate program to install rain gardens throughout the municipality. The environmental commission will seek funding for this initiative. As the green infrastructure initiative moves forward, there will be opportunities to provide additional incentive programs for homeowners and businesses to participate in the effort. As stormwater utilities become a reality in New Jersey, there may also be opportunities to offer incentives to homeowners and businesses to install green infrastructure. A stormwater utility can provide a reduced utility fee to property owners that have installed green infrastructure. A stormwater utility program can also provide direct funding to property owners to install green infrastructure.

Short-term Goal

With the existing municipal impervious cover at 5.2%, Hamilton Township's green infrastructure initiative short term (i.e., less than five years) impervious cover management goal is to manage stormwater runoff for 10 acres of impervious cover. This goal is highly dependent on securing adequate funding for the implementation of green infrastructure projects.

Conclusion

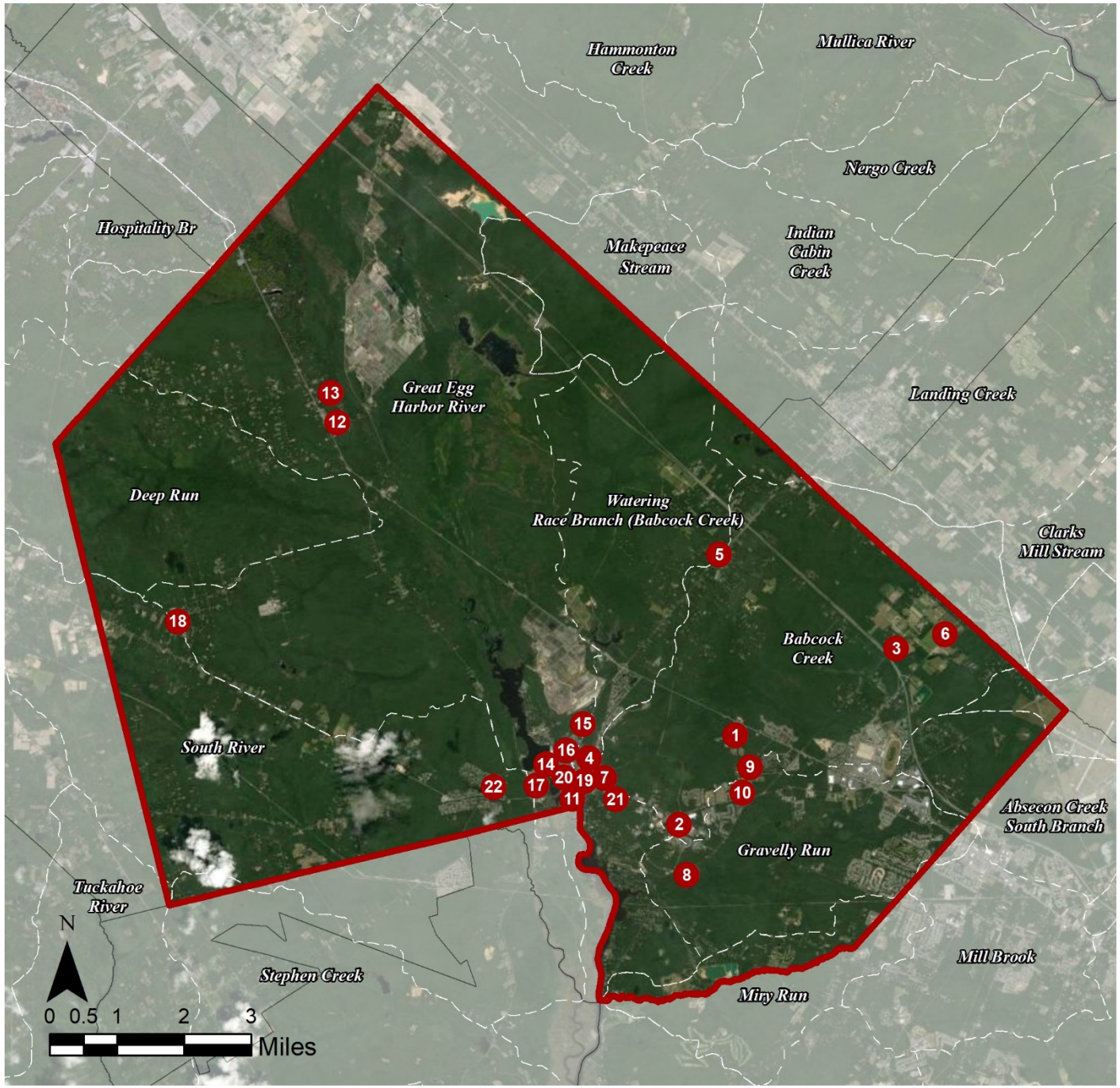
This green infrastructure action plan is meant to provide the municipality with a blueprint for implementing green infrastructure practices that will reduce the impact of stormwater runoff from impervious surfaces. These projects can be implemented by a wide variety of people such as boy scouts, girl 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 green infrastructrue action plan into a stormwater mitigation plan and incorporate it into the municipal stormwater control ordinance.

Appendix A: Climate Resilient Green Infrastructure

a. Green Infrastructure Sites

HAMILTON TOWNSHIP (ATLANTIC): GREEN INFRASTRUCTURE SITES



BABCOCK CREEK SITES

1. Atlantic Cape Community College
2. Atlantic County Institute of Technology & Special Services School District
3. Cologne Volunteer Fire Company: Station 18-5
4. Joseph Shaner Elementary School
5. Laureldale Volunteer Fire and Rescue Company
6. Liepzig Avenue Park
7. Underhill Park

GRAVELLY RUN SITES

8. George L. Hess Educational Complex
9. Oakcrest High School
10. William Davies Middle School

GREAT EGG HARBOR RIVER SITES

11. Atlantic County Library - Mays Landing Branch
12. Cherry Lane Right of Way
13. Driftwood Lane Right of Way
14. First Methodist Church of Mays Landing
15. Hamilton Township Municipal Building
16. Hamilton Township Municipal Utilities Authority
17. Mays Landing Fire Department: Station 18-1
18. Rose Quaterman Park
19. St. Vincent de Paul Regional School
20. The Presbyterian Church of Mays Landing
21. Township of Hamilton Public Works

SOUTH RIVER SITES

22. Atlantic County Office Building

b. Proposed Green Infrastructure Concepts

ATLANTIC CAPE COMMUNITY COLLEGE

Subwatershed: Babcock Creek

Site Area: 23,504,637 sq. ft.

Address: 5100 East Black Horse Pike
Mays Landing, NJ 08330

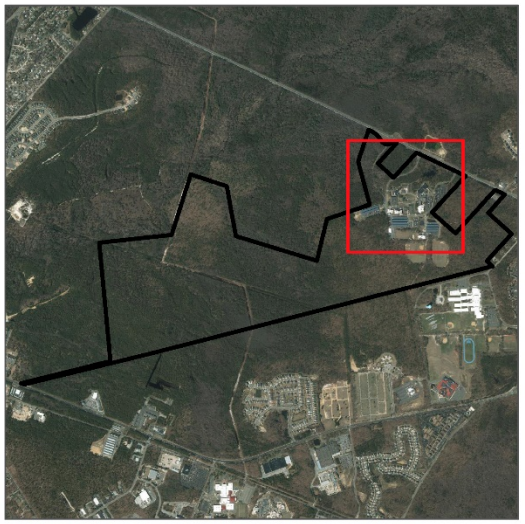
Block and Lot: Block 996
Lot 23, 26, 38

Two rain gardens can be installed near the entrance of Lot 4 to intercept stormwater from the roadways. An existing saturated area near the solar panels can be converted into a rain garden to capture, treat, and infiltrate stormwater runoff from the parking lot and improve drainage. 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"
5	1,249,351	60.2	631.0	5,736.2	0.973	34.27

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.302	51	22,180	0.83	2,900	$14,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



Atlantic Cape Community College

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

0 100' 200'

ATLANTIC COUNTY INSTITUTE OF TECHNOLOGY & SPECIAL SERVICES SCHOOL DISTRICT

Subwatershed: Babcock Creek

Site Area: 3,715,830 sq. ft.

Address: 4805 Nawakwa Boulevard
Mays Landing, NJ 08330

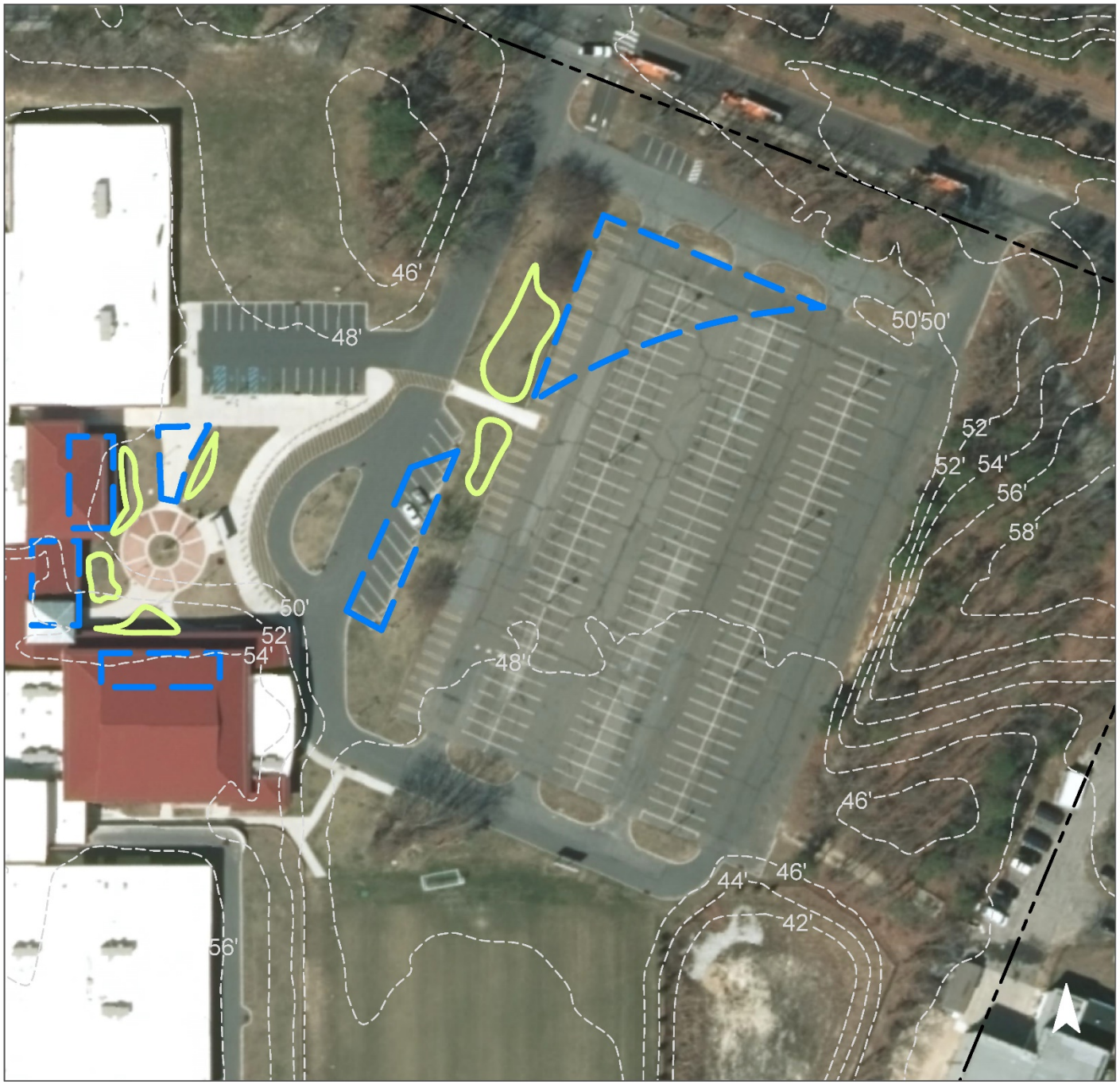
Block and Lot: Block 994
Lot 47, 58.01

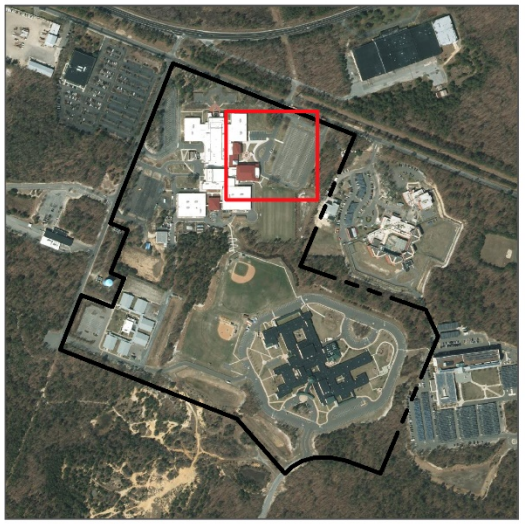
A bioretention system can be installed in the open green spaces along the sides of the school by the main entrance and flag pole area of the school to capture, treat, and infiltrate stormwater runoff from the school's downspouts. Additionally, bioretention systems can be installed in the open green spaces west of the parking lot to capture, treat, and infiltrate stormwater runoff from the parking lot. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
43	1,603,534	77.3	809.9	7,362.4	1.249	43.98

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	0.442	74	32,430	1.22	5,355	$26,775

GREEN INFRASTRUCTURE RECOMMENDATIONS





Atlantic County Institute of Technology & Special Services School District

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

0 50' 100'

COLOGNE VOLUNTEER FIRE COMPANY: STATION 18-5

Subwatershed: Babcock Creek

Site Area: 115,741 sq. ft.

Address: 2870 South Cologne Avenue
Mays Landing, NJ 08330

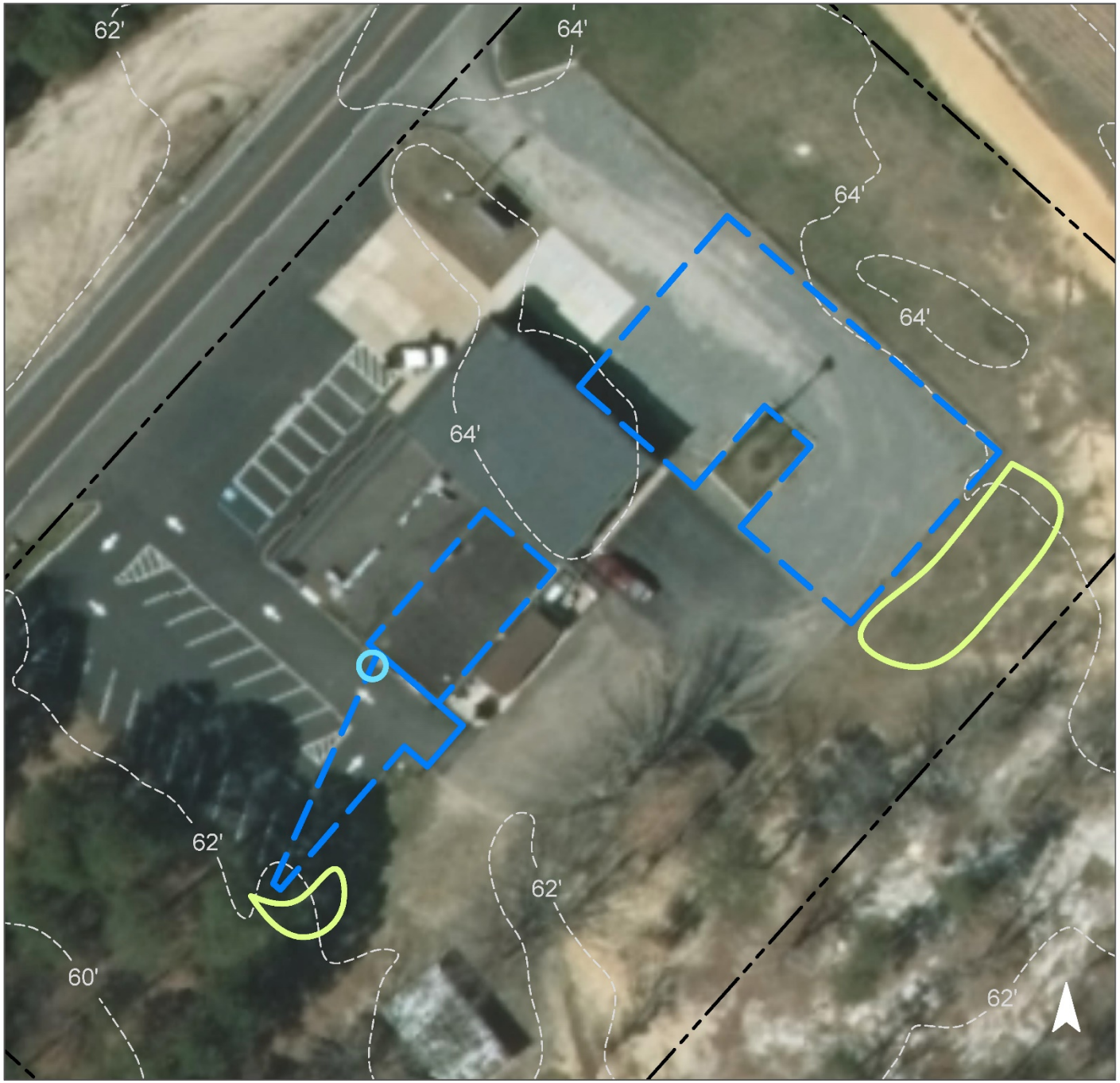
Block and Lot: Block 1140
Lot 2

Rain gardens can be installed to intercept stormwater coming from the parking areas at the east and south corners of the site. A cistern can be installed to capture stormwater that can be reused for washing firetrucks or for watering existing landscaping. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
42	48,450	2.3	24.5	222.5	0.038	1.33

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	0.244	41	17,880	0.67	2,425	$12,125
Rainwater harvesting	0.045	8	1,500	0.06	1,500 (gal)	$3,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Cologne Volunteer Fire Company: Station 18-5

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

0 25' 50'

JOSEPH SHANER ELEMENTARY SCHOOL

Subwatershed: Babcock Creek

Site Area: 406,238 sq. ft.

Address: 5801 3rd Street
Mays Landing, NJ 08330

Block and Lot: Block 809
Lot 17, 18

Several rain gardens can be installed around the school by redirecting downspouts into them. This will allow treatment and infiltration of stormwater runoff and can also serve as an educational opportunity for students. 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"
46	187,726	9.1	94.8	861.9	0.146	5.15

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	0.284	47	20,810	0.78	2,730	$13,650

GREEN INFRASTRUCTURE RECOMMENDATIONS

Joseph Shaner Elementary School

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

0 50' 100'

LAURELDALE VOLUNTEER FIRE AND RESCUE COMPANY

Subwatershed: Babcock Creek

Site Area: 246,629 sq. ft.

Address: 2657 NJ-50
Mays Landing, NJ 08330

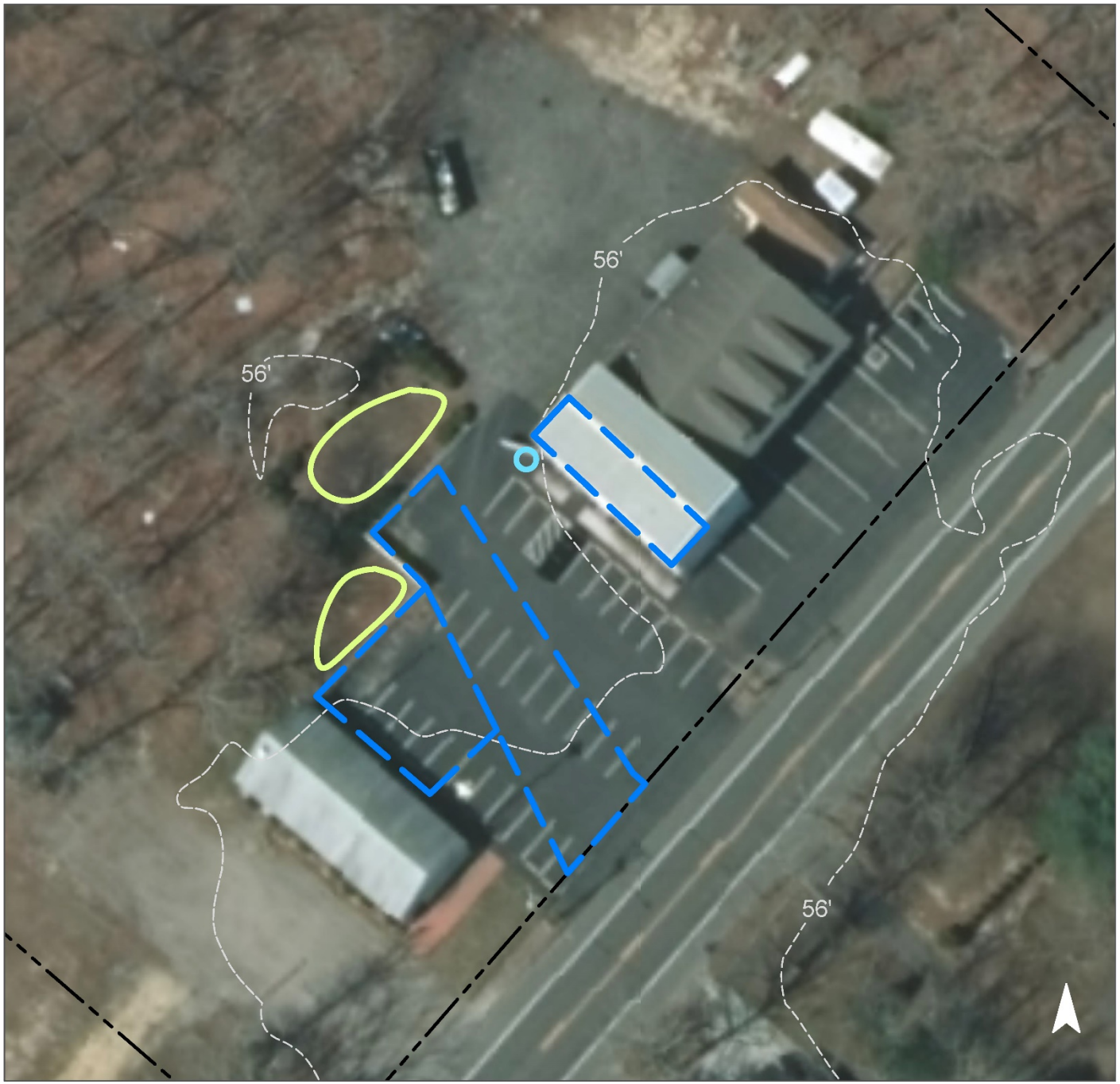
Block and Lot: Block 865
Lot 13, 14

Rain gardens can be installed to intercept stormwater coming from the parking areas to the northwest. A cistern can be installed to capture stormwater that can be reused for washing firetrucks or for watering existing landscaping. 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"
18	45,153	2.2	22.8	207.3	0.035	1.24

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	0.148	25	10,850	0.41	1,420	$7,100
Rainwater harvesting	0.027	5	850	0.03	850 (gal)	$1,700

GREEN INFRASTRUCTURE RECOMMENDATIONS



Laureldale Volunteer Fire and Rescue Company

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

0 25' 50'

LIEPZIG AVENUE PARK

Subwatershed: Babcock Creek

Site Area: 2,626,707 sq. ft.

Address: 3155 South Leipzig Avenue
Mays Landing NJ, 08330

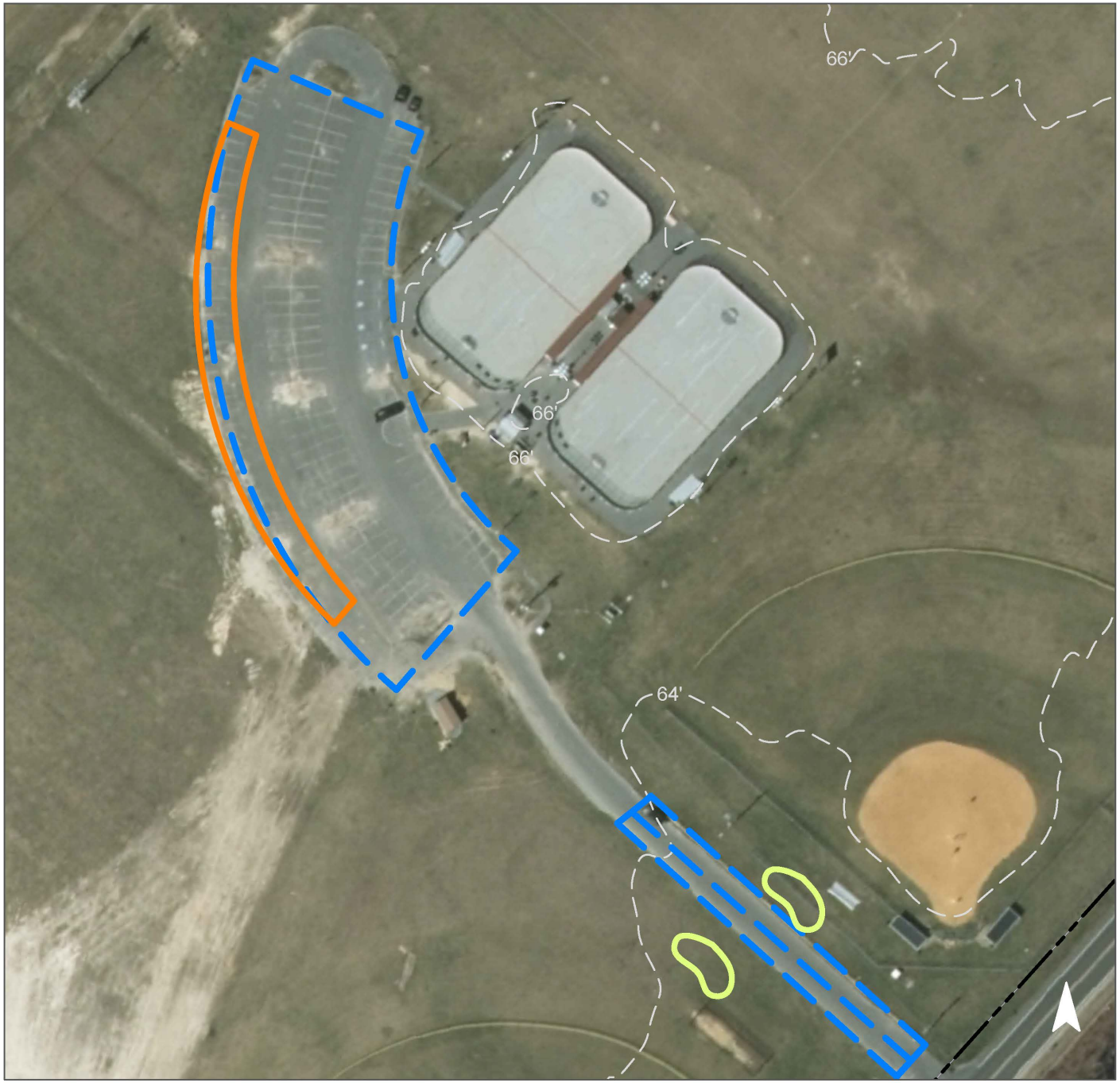
Block and Lot: Block 1141
Lot 12

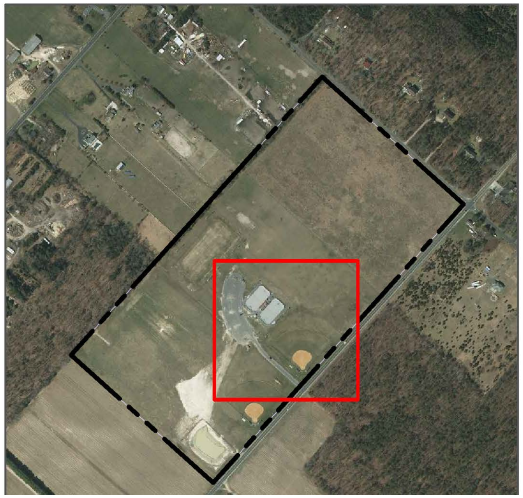
The pavement along the west edge of the parking lot can be replaced with pervious pavement to capture and infiltrate the stormwater runoff from the parking lot. Bioretention systems can be installed near the entrance on both sides of the road connecting Leipzig Avenue and the parking lot to capture, treat, and infiltrate stormwater runoff from the surrounding area to prevent flooding. 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"
6	160,261	7.7	80.9	735.8	0.125	4.40

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	0.177	30	13,000	0.49	1,700	$8,500
Pervious pavement	1.199	201	87,940	3.30	8,000	$200,000

GREEN INFRASTRUCTURE RECOMMENDATIONS





Liepzig Avenue Park

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

0 50' 100'

UNDERHILL PARK

Subwatershed: Babcock Creek

Site Area: 3,114,676 sq. ft.

Address: 129 Old Egg Harbor Avenue
Mays Landing, NJ 08330

Block and Lot: Block 809; 996
Lot 32; 8,13

A bioretention system can be installed to the east of the crushed shell parking lot at the base of the hill but before the baseball field line to capture, treat, and infiltrate stormwater runoff and to help prevent flooding in the baseball field. 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"
5	148,619	7.2	75.1	682.4	0.116	4.08

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.403	67	29,540	1.11	3,865	$19,325

GREEN INFRASTRUCTURE RECOMMENDATIONS

Underhill Park

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

0 30' 60'

GEORGE L. HESS EDUCATIONAL COMPLEX

Subwatershed: Gravelly Run

Site Area: 2,260,597 sq. ft.

Address: 700 Babcock Road, NJ 08330

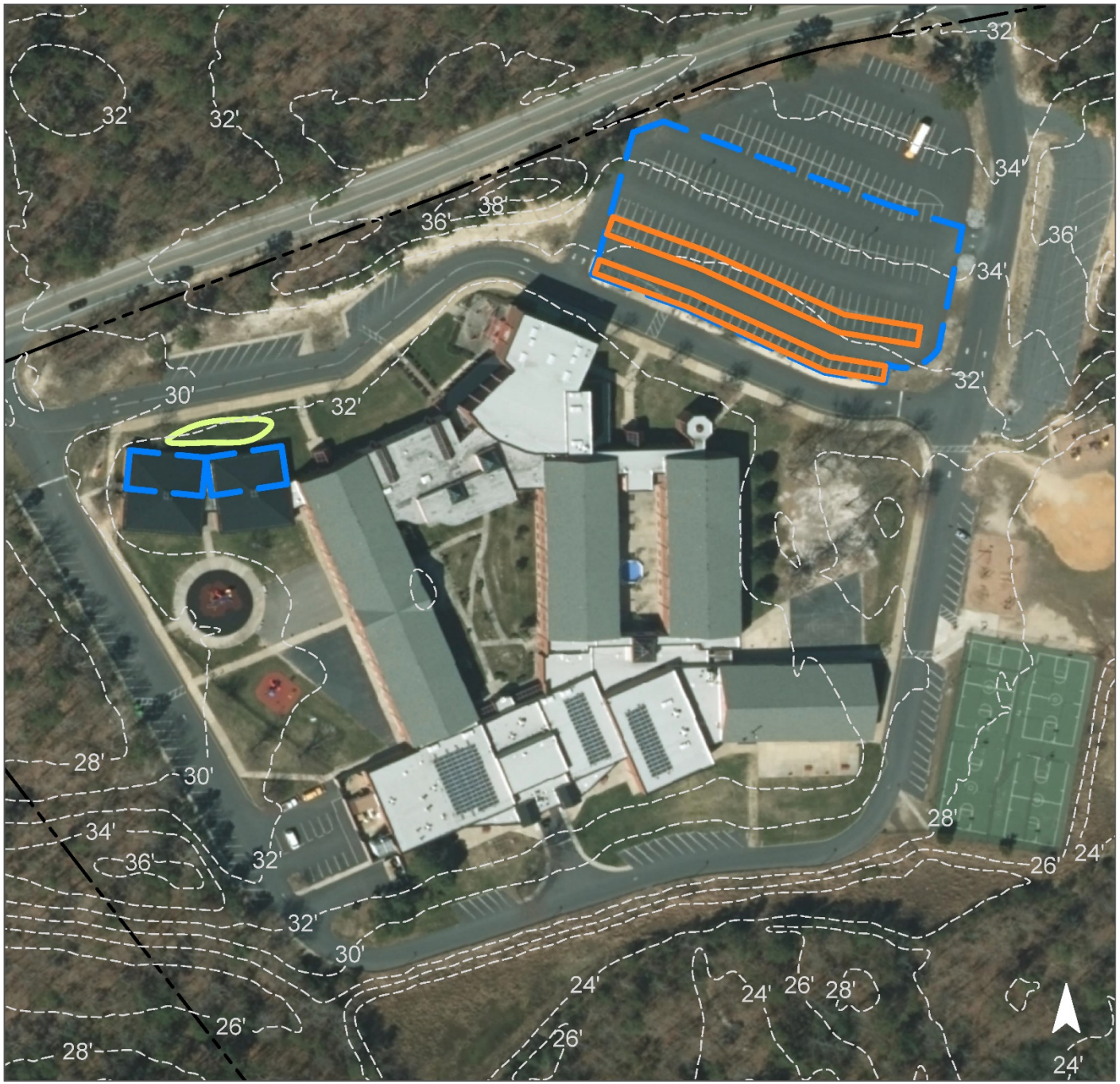
Block and Lot: Block 995
Lot 1.01

A bioretention system can be installed north of the buildings at the northwest corner of the complex to capture, treat, and infiltrate the stormwater runoff from the roof and to prevent that area from flooding. The south end of the parking spaces in the northeast lot can be converted to pervious pavement to capture stormwater from the parking lot area. 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"
24	548,114	26.4	276.8	2,516.6	0.427	15.03

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.146	24	10,700	0.40	1,400	$7,000
Pervious pavement	1.477	247	108,400	4.07	11,350	$283,750

GREEN INFRASTRUCTURE RECOMMENDATIONS



George L. Hess Educational Complex

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

0 75' 150'

OAKCREST HIGH SCHOOL

Subwatershed: Gravelly Run

Site Area: 4,404,734 sq. ft.

Address: 1824 Dr. Dennis Forman Drive
Mays Landing, NJ 08330

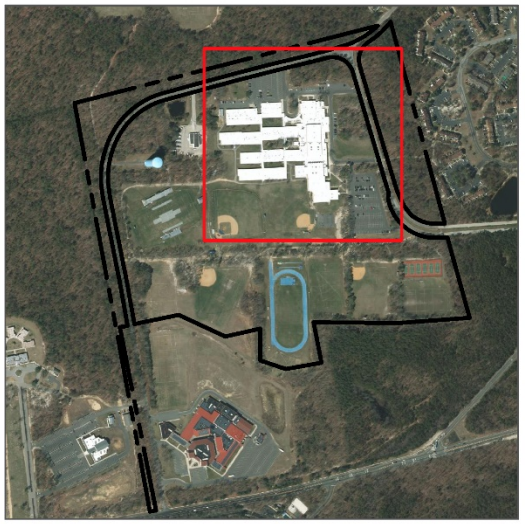
Block and Lot: Block 996; 1027; 1028.01
Lot 33.01; 1.03; 1

A bioretention system can be installed at the northern end of the property in the turfgrass area near an existing outlet pipe to capture, treat, and infiltrate the stormwater runoff from the roof and to help prevent that area from flooding. The south end of the parking spaces in the southeast lot can be converted to pervious pavement to capture stormwater from the parking lot area. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
20	878,994	42.4	443.9	4,035.8	0.685	24.11

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.660	111	48,450	1.82	6,335	$31,675
Pervious pavement	2.114	354	155,140	5.83	16,590	$414,750

GREEN INFRASTRUCTURE RECOMMENDATIONS



Oakcrest High School

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

0 100' 200'

WILLIAM DAVIES MIDDLE SCHOOL

Subwatershed: Gravelly Run

Site Area: 1,452,137 sq. ft.

Address: 1876 Dr. Dennis Forman Drive
Mays Landing, NJ 08330

Block and Lot: Block 996; 1027
Lot 33.02; 1.02

A bioretention system can be installed in the green space to the west of the property. Another system can be installed next to the garden area and the parking lot at the northwestern edge of the school property. Another system can be installed at the east corner of the school property near the transformer. Another system can be installed along the southeast edge of the school property by the main entrances. All of these systems can be installed to capture, treat, and infiltrate, the stormwater runoff from the nearby road and the downspouts to prevent flooding. 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	452,709	21.8	228.6	2,078.6	0.353	12.42

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	0.601	101	44,060	1.66	5,765	$28,825

GREEN INFRASTRUCTURE RECOMMENDATIONS

William Davies Middle School

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

0 50' 100'

ATLANTIC COUNTY LIBRARY - MAYS LANDING BRANCH

Subwatershed: Great Egg Harbor River

Site Area: 51,392 sq. ft.

Address: 40 Farragut Avenue
Mays Landing, NJ 08330

Block and Lot: Block 749
Lot 1, 13, 14

Parking spaces in the parking lot to the south of the building can be converted to porous pavement to capture and infiltrate stormwater runoff from the parking lot. Additional space west of the building can be converted to capture stormwater from the rooftop. This water can first be partially treated with a series of stormwater planters. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
74	38,048	1.8	19.2	174.7	0.030	1.04

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
Pervious pavement	0.644	108	47,280	1.78	5,500	$137,500
Planter boxes	n/a	3	n/a	n/a	4 (boxes)	$4,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Atlantic County Library - Mays Landing Branch

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

0 20' 40'

CHERRY LANE RIGHT OF WAY

Subwatershed: Great Egg Harbor River

Site Area: 2,544 sq. ft.

Address: 2032 Cherry Lane
Mays Landing, NJ 08330

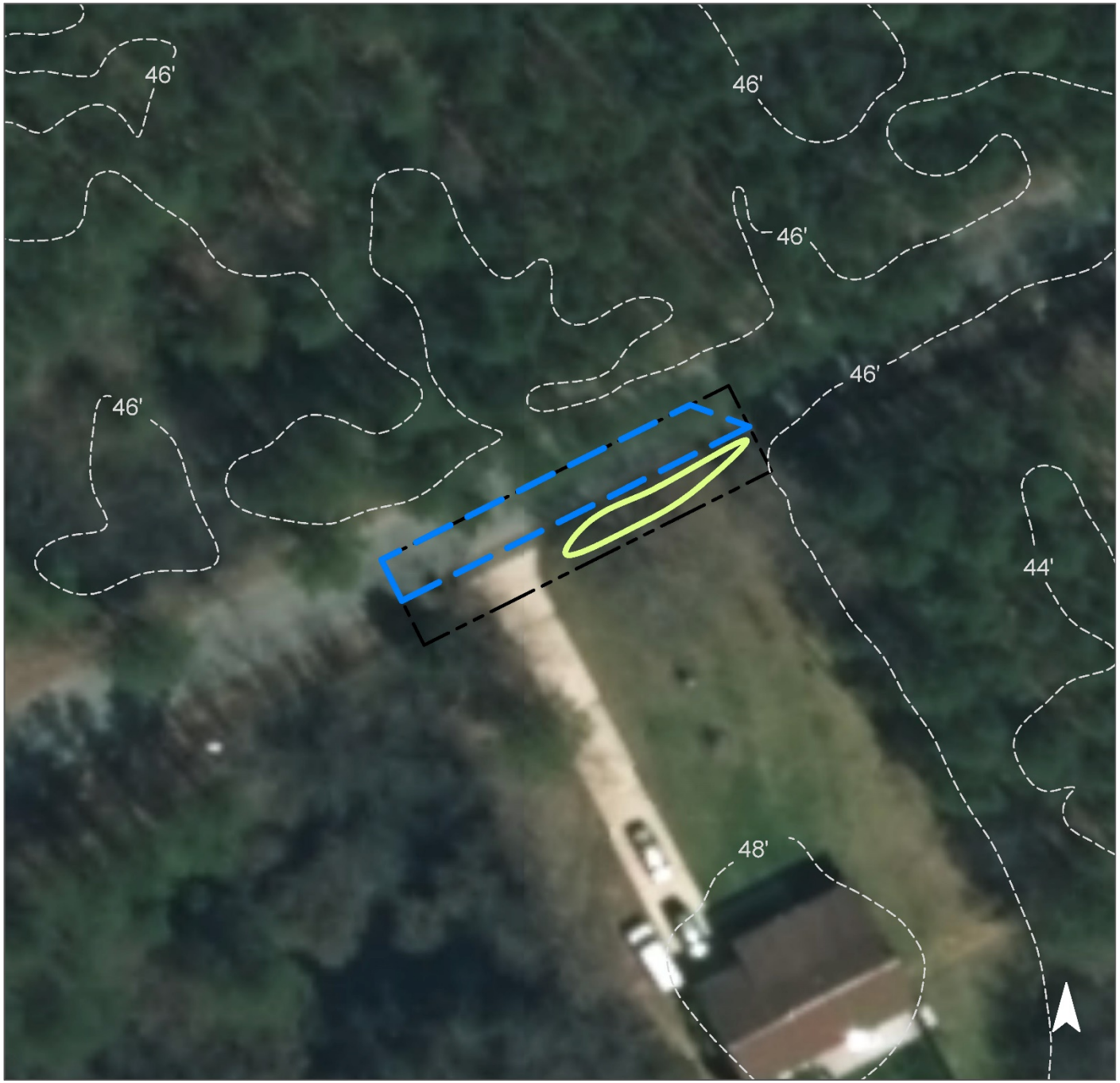
Adjacent Block and Lot: Block 209
Lot 42.02

A bioretention system can be installed along Cherry Lane adjacent to the property in the right of way to capture, treat, and infiltrate the stormwater runoff from the roof of 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"
15	371	0.0	0.2	1.7	0.000	0.01

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.030	5	2,200	0.08	290	$1,450

GREEN INFRASTRUCTURE RECOMMENDATIONS



Cherry Lane Right of Way

- bioretention system
- drainage area
- right of way zone
- 2015 Aerial: NJOIT, OGIS

0 20' 40'

DRIFTWOOD LANE RIGHT OF WAY

Subwatershed: Great Egg Harbor River

Site Area: 13,146 sq. ft.

Address: 7344 Driftwood Lane
Mays Landing, NJ 08330

Block and Lot: Block 209
Lot 11.01

A bioretention system can be installed along Driftwood Lane adjacent to the property in the right of way to capture, treat, and infiltrate the stormwater runoff and to prevent the area from flooding. 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"
13	1,770	0.1	0.9	8.1	0.001	0.05

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.057	10	4,200	0.16	550	$2,750

GREEN INFRASTRUCTURE RECOMMENDATIONS

Driftwood Lane
Right of Way

- bioretention system
- drainage area
- right of way zone
- 2015 Aerial: NJOIT, OGIS

0 20' 40'

FIRST METHODIST CHURCH OF MAYS LANDING

Subwatershed: Great Egg Harbor River

Site Area: 46,434 sq. ft.

Address: 6011 Main Street
Mays Landing, NJ 08330

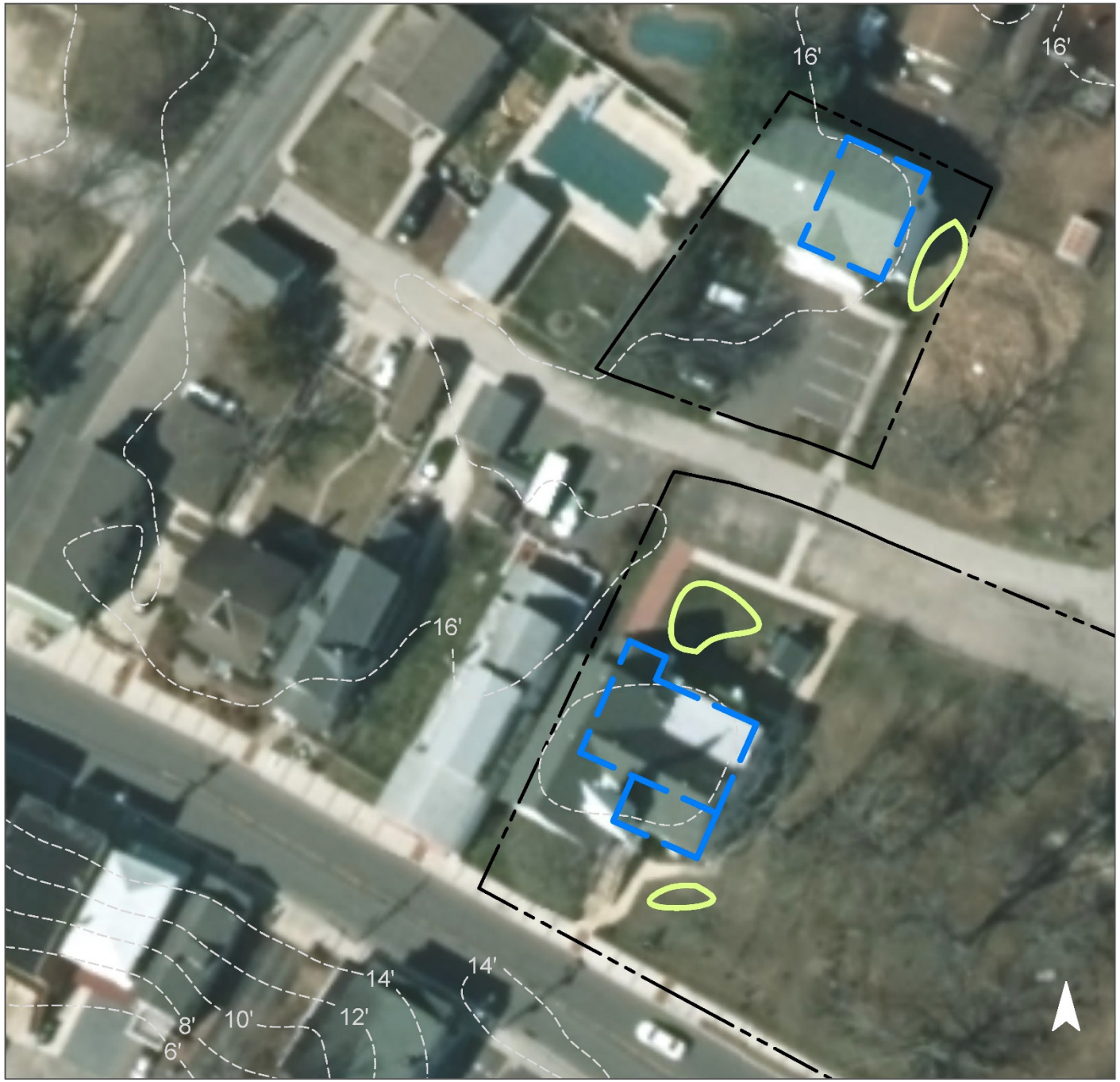
Block and Lot: Block 757
Lot 7, 15, 16, 17

Several rain gardens can be installed by redirecting downspouts to turfgrass areas to capture, treat, and infiltrate stormwater runoff from the rooftop. 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"
72	33,528	1.6	16.9	153.9	0.026	0.92

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	6,220	0.23	815	$4,075

GREEN INFRASTRUCTURE RECOMMENDATIONS



First Methodist Church of Mays Landing

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

0 25' 50'

HAMILTON TOWNSHIP MUNICIPAL BUILDING

Subwatershed: Great Egg Harbor River

Site Area: 542,597 sq. ft.

Address: 6101 13th Street
Mays Landing, NJ 08330

Block and Lot: Block 786; 791
Lot 1.01; 2

Parking spaces on the west side of the site can be converted to pervious pavement to capture stormwater from the parking lot. Two rain gardens can be installed along the south end of the building by redirecting downspouts into them to capture stormwater from the rooftop. 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"
29	155,444	7.5	78.5	713.7	0.121	4.26

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	0.072	12	5,300	0.20	700	$3,500
Pervious pavement	0.859	144	63,040	2.37	7,290	$182,250

GREEN INFRASTRUCTURE RECOMMENDATIONS

Hamilton Township Municipal Building

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

0 50' 100'

HAMILTON TOWNSHIP MUNICIPAL UTILITIES AUTHORITY

Subwatershed: Great Egg Harbor River

Site Area: 14,460 sq. ft.

Address: 6024 Ken Scull Avenue
Mays Landing, NJ 08330

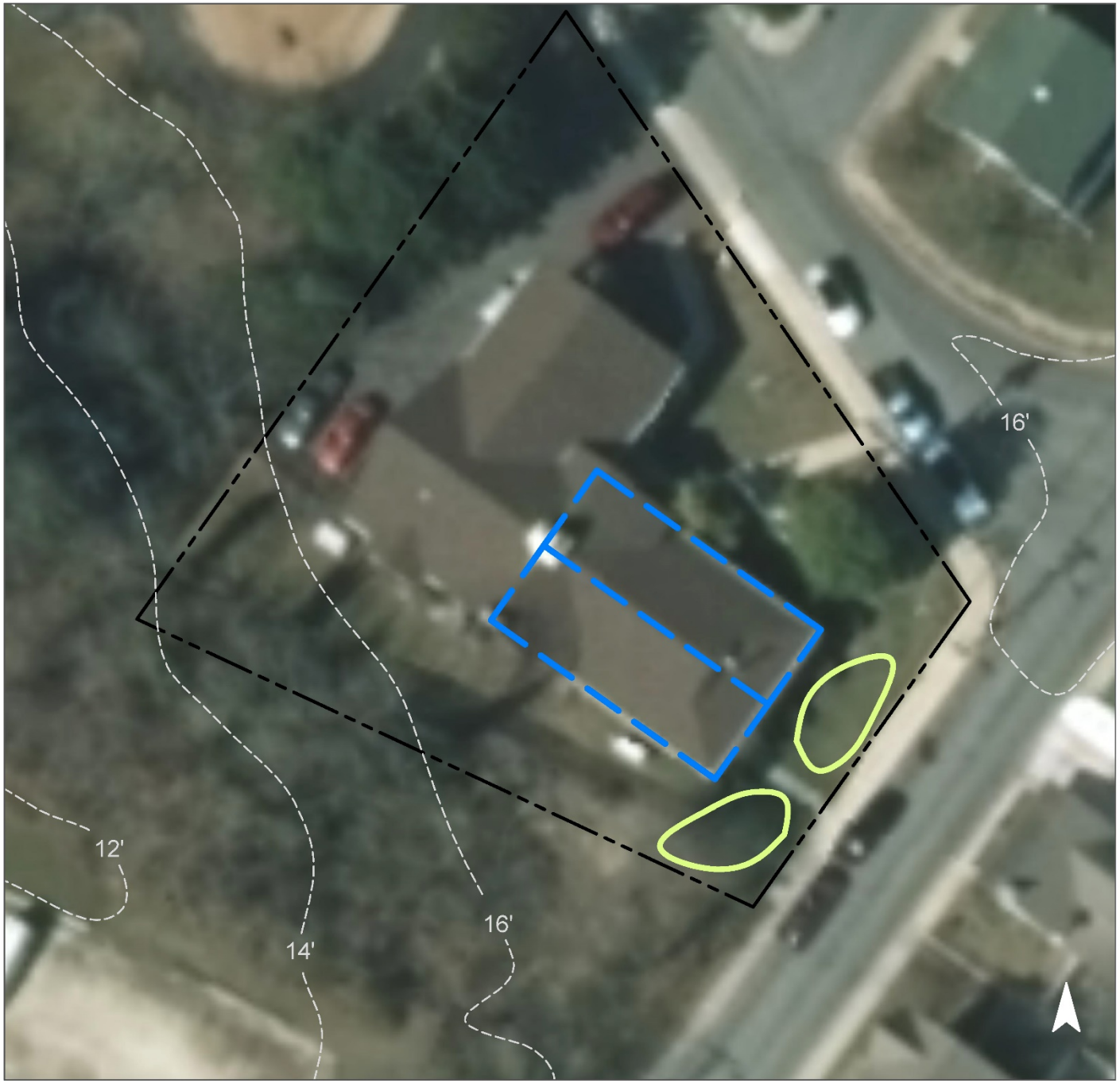
Block and Lot: Block 753
Lot 14

Two rain gardens can be installed at the southeast end of the building by redirecting downspouts into them to capture, treat, and infiltrate stormwater runoff from the rooftop. 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	6,958	0.3	3.5	31.9	0.005	0.19

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	0.051	9	3,730	0.14	500	$2,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



Hamilton Township Municipal Utilities Authority

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

0 15' 30'

MAYS LANDING FIRE DEPARTMENT: STATION 18-1

Subwatershed: Great Egg Harbor River

Site Area: 22,257 sq. ft.

Address: 6081 Reliance Avenue
Mays Landing, NJ 08330

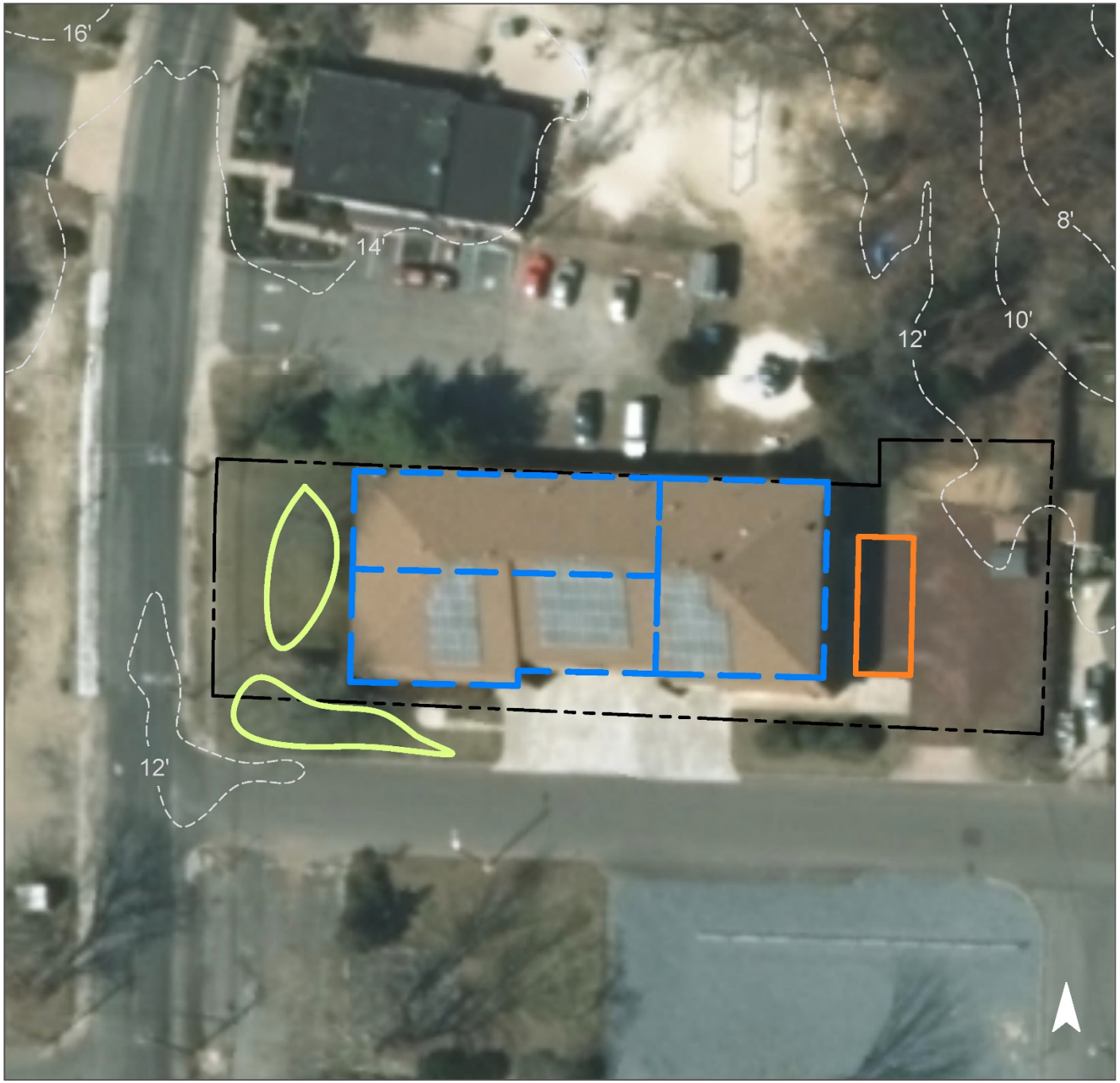
Block and Lot: Block 741
Lot 13

Two rain gardens can be installed at the west end of the building by redirecting downspouts into them to capture, treat, and infiltrate stormwater runoff from the rooftop. Parking spaces adjacent to the east face of the building can be retrofitted to pervious pavement to capture stormwater from the rooftop by redirecting downspouts into them. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
70	15,608	0.8	7.9	71.7	0.012	0.43

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	0.174	29	12,760	0.48	1,670	$8,350
Pervious pavement	0.092	15	6,730	0.25	810	$20,250

GREEN INFRASTRUCTURE RECOMMENDATIONS



Mays Landing Fire Department: Station 18-1

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

0 25' 50'

ROSE QUATERMAN PARK

Subwatershed: Great Egg Harbor River

Site Area: 56,149 sq. ft.

Address: 6925 Railroad Boulevard
Mays Landing, NJ 08330

Block and Lot: Block 515
Lot 1

A bioretention system can be installed near at the southwest end of the park to capture, treat, and infiltrate stormwater runoff and to help prevent flooding. 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"
16	9,131	0.4	4.6	41.9	0.007	0.25

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.069	12	5,060	0.19	665	$3,325

GREEN INFRASTRUCTURE RECOMMENDATIONS

Rose Quarterman Park

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

0 25' 50'

ST. VINCENT DE PAUL REGIONAL SCHOOL

Subwatershed: Great Egg Harbor River

Site Area: 93,914 sq. ft.

Address: 5809 Main Street
Mays Landing, NJ 08330

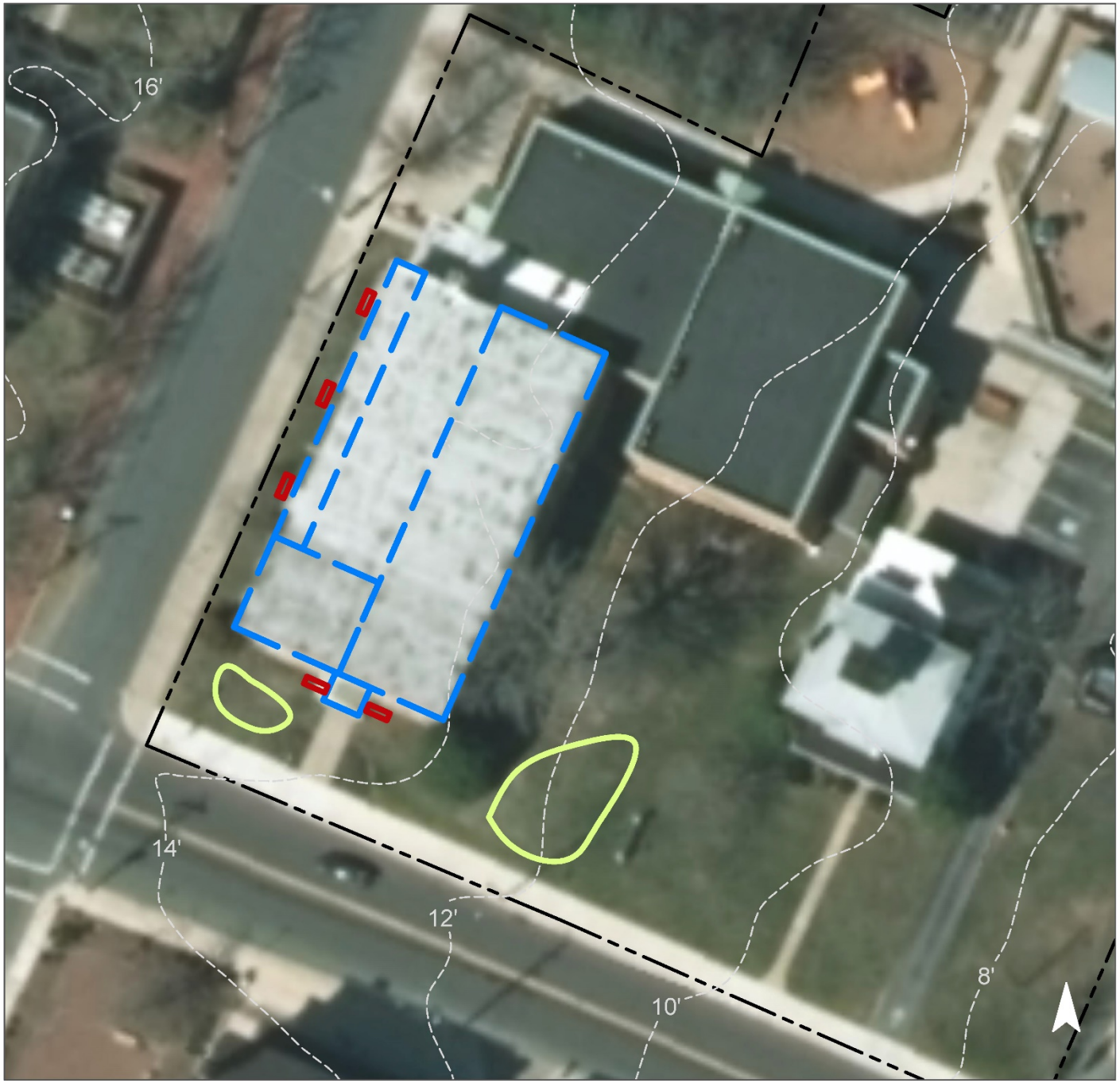
Block and Lot: Block 807
Lot 4

Two rain gardens can be installed at the south end of the building by redirecting downspouts into them to capture, treat, and infiltrate stormwater runoff from the rooftop. Downspout planter boxes can be installed around the south and west end of the building to filter additional 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"
74	69,787	3.4	35.2	320.4	0.054	1.91

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	0.102	17	7,510	0.28	1,670	$8,350
Planter boxes	n/a	3	n/a	n/a	5 (boxes)	$5,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



St. Vincent de Paul Regional School

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

0 20' 40'

THE PRESBYTERIAN CHURCH OF MAYS LANDING

Subwatershed: Great Egg Harbor River

Site Area: 26,900 sq. ft.

Address: 6001 Main Street
Mays Landing, NJ 08330

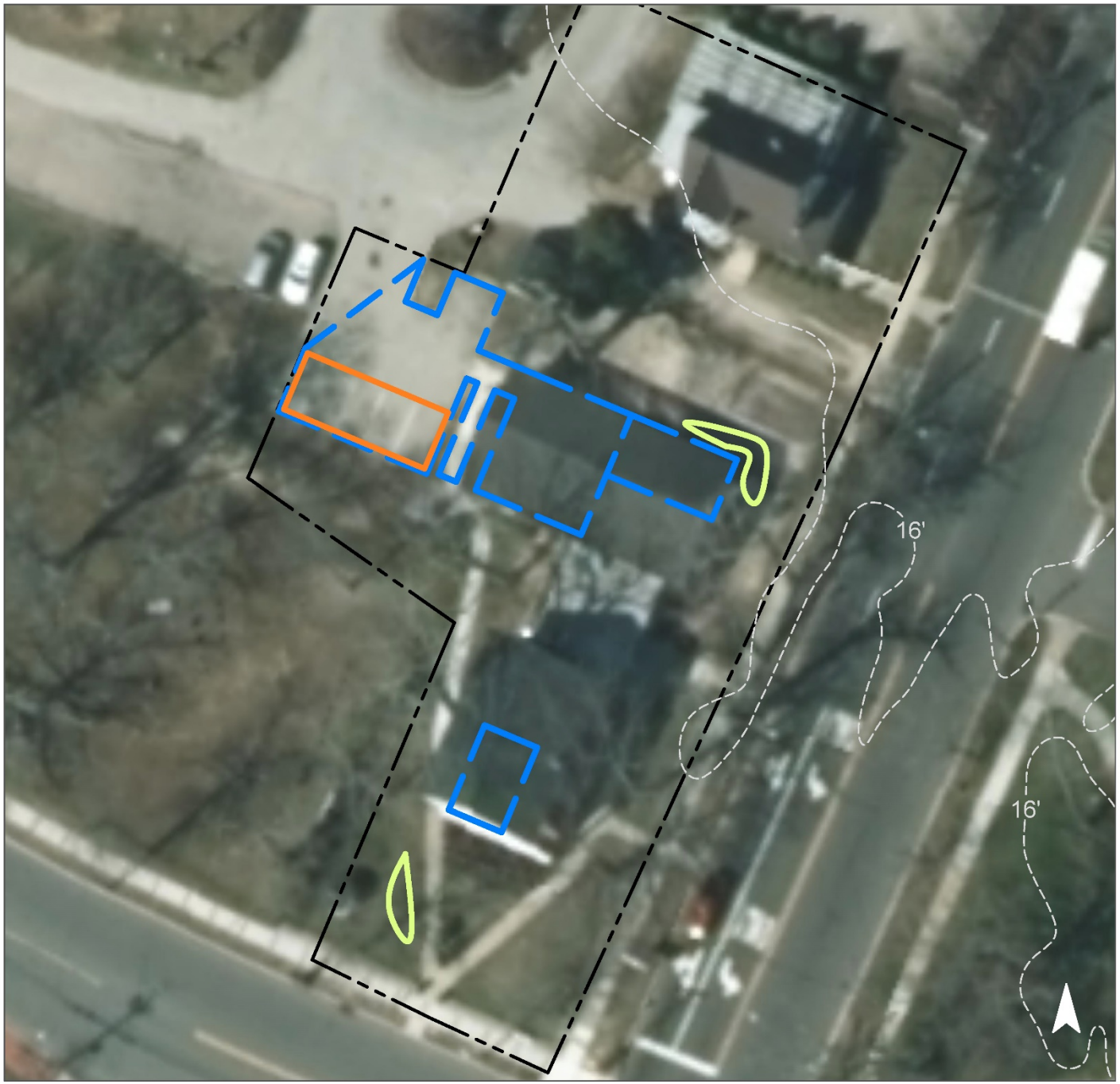
Block and Lot: Block 757
Lot 13, 14

The small parking lot can be converted to pervious pavement that can manage stormwater from both the parking area and the adjacent building by redirecting downspouts towards it. Two rain gardens can be installed at the south and northeast ends of the site by redirecting downspouts into them to capture, treat, and infiltrate stormwater runoff from the rooftop. 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"
74	19,989	1.0	10.1	91.8	0.016	0.55

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	1,660	0.06	220	$1,100
Pervious pavement	0.078	13	5,710	0.21	755	$18,875

GREEN INFRASTRUCTURE RECOMMENDATIONS



The Presbyterian Church of Mays Landing

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

0 20' 40'

TOWNSHIP OF HAMILTON PUBLIC WORKS

Subwatershed: Great Egg Harbor River

Site Area: 229,130 sq. ft.

Address: 5500 Atlantic Avenue
Mays Landing, NJ, 08330

Block and Lot: Block 991
Lot 1

A bioretention system can be installed in the T-shaped green space that separates the two parking lots at the north end of the property to capture, treat, and infiltrate the stormwater runoff from the building by reconfiguring the downspout structure. A second bioretention system can be installed at the north end of the larger building by redirecting the 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"
57	130,970	6.3	66.1	601.3	0.102	3.59

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.108	18	7,940	0.30	790	$3,950

GREEN INFRASTRUCTURE RECOMMENDATIONS

Township of Hamilton Public Works

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

0 25' 50'

ATLANTIC COUNTY OFFICE BUILDING

Subwatershed: South River

Site Area: 173,279 sq. ft.

Address: 6260 Old Harding Highway
Mays Landing, NJ 08330

Block and Lot: Block 732
Lot 35

A bioretention system can be installed at the north end of the site to help manage an area that does not drain properly. A second bioretention system can be installed along the southeast side of the building by redirecting the nearby downspouts. Parking spaces along the east edge of the lot can be converted to porous pavement to capture and infiltrate stormwater runoff from the parking lot. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
31	52,950	2.6	26.7	243.1	0.041	1.45

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	0.069	12	5,060	0.19	665	$3,325
Pervious pavement	0.699	117	51,310	1.93	5,185	$129,625

GREEN INFRASTRUCTURE RECOMMENDATIONS

Atlantic County Office Building

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

0 30' 60'

c. Summary of Existing Conditions

Summary of Existing Conditions

	Subwatershed/Site Name/Total Site Info/GI Practice	Area (ac)	Area (SF)	Block	Lot	I.C. %	I.C. Area (ac)	I.C. Area (SF)	Existing Annual Loads (Commercial) TP (lb/yr)	TN (lb/yr)	TSS (lb/yr)	Runoff Volumes from I.C. Water Quality Storm (1.25" over 2-hours) (cu.ft.)	Annual (cu.ft.)	Runoff Volumes from I.C. Water Quality Storm (1.25" over 2-hours) (Mgal)	Annual (Mgal)
	BABCOCK CREEK SITES	**774.34**	**33,730,460**				**79.04**	**3,443,092**	**166.0**	**1738.9**	**15,808.5**	**358,655**	**12,624,671**	**2.683**	**94.43**
1	**Atlantic Cape Community College**														
	Bioretention systems														
	Total Site Info	539.59	23,504,637	996	23, 26, 38	5	28.68	1,249,351	60.2	631.0	5,736.2	130,141	4,580,952	0.973	34.27
2	**Atlantic County Institute of Technology & Special Services School District**														
	Bioretention systems														
	Total Site Info	85.30	3,715,830	994	47, 58.01	43	36.81	1,603,534	77.3	809.9	7,362.4	167,035	5,879,625	1.249	43.98
3	**Cologne Volunteer Fire Company: Station 18-5**														
	Bioretention systems														
	Rainwater harvesting														
	Total Site Info	2.66	115,741	1140	2	42	1.11	48,450	2.3	24.5	222.5	5,047	177,649	0.038	1.33
4	**Joseph Shaner Elementary School**														
	Bioretention systems														
	Total Site Info	9.33	406,238	809	17, 18	46	4.31	187,726	9.1	94.8	861.9	19,555	688,327	0.146	5.15
5	**Laureldale Volunteer Fire and Rescue Company**														
	Bioretention systems														
	Rainwater harvesting														
	Total Site Info	5.66	246,629	865	13, 14	18	1.04	45,153	2.2	22.8	207.3	4,703	165,560	0.035	1.24
6	**Liepzig Avenue Park**														
	Bioretention systems	-	-												
	Pervious pavement		-												
	Total Site Info	60.30	2,626,707	1141	12	6	3.68	160,261	7.7	80.9	735.8	16,694	587,623	0.125	4.40
7	**Underhill Park**														
	Bioretention system														
	Total Site Info	71.50	3,114,677	809; 996	32; 8,13	5	3.41	148,619	7.2	75.1	682.4	15,481	544,936	0.116	4.08
	GRAVELLY RUN SITES	**186.35**	**8,117,468**				**43.15**	**1,879,817**	**90.6**	**949.4**	**8,630.9**	**195,814**	**6,892,662**	**1.465**	**51.56**
8	**George L. Hess Educational Complex**														
	Bioretention system														
	Pervious pavement														
	Total Site Info	51.90	2,260,597	995	1.01	24	12.58	548,114	26.4	276.8	2,516.6	57,095	2,009,752	0.427	15.03
9	**Oakcrest High School**														
	Bioretention system														
	Pervious pavement														
	Total Site Info	101.12	4,404,734	996; 1027; 1028.01	33.01; 1.03; 1	20	20.18	878,994	42.4	443.9	4,035.8	91,562	3,222,977	0.685	24.11
10	**William Davies Middle School**														
	Bioretention systems														
	Total Site Info	33.34	1,452,137	996; 1027	33.02; 1.02	31	10.39	452,709	21.8	228.6	2,078.6	47,157	1,659,933	0.353	12.42

Summary of Existing Conditions

	Subwatershed/Site Name/Total Site Info/GI Practice	Area (ac)	Area (SF)	Block	Lot	I.C. %	I.C. Area (ac)	I.C. Area (SF)	Existing Annual Loads (Commercial) TP (lb/yr)	TN (lb/yr)	TSS (lb/yr)	Runoff Volumes from I.C. Water Quality Storm (1.25" over 2-hours) (cu.ft.)	Annual (cu.ft.)	Runoff Volumes from I.C. Water Quality Storm (1.25" over 2-hours) (Mgal)	Annual (Mgal)
	GREAT EGG HARBOR RIVER SITES	**25.23**	**1,098,924**				**11.06**	**481,605**	**23.2**	**243.2**	**2,211.2**	**50,167**	**1,765,884**	**0.375**	**13.21**
11	**Atlantic County Library - Mays Landing Branch**														
	Pervious pavement														
	Planter boxes														
	Total Site Info	1.18	51,392	749	1, 13, 14	74	0.87	38,048	1.8	19.2	174.7	3,963	139,509	0.030	1.04
12	**Cherry Lane Right of Way**														
	Bioretention system														
	Total Site Info	0.06	2,544	Adj: 209	Adj: 42.02	15	0.01	371	0.0	0.2	1.7	39	1,360	0.000	0.01
13	**Driftwood Lane Right of Way**														
	Bioretention system														
	Total Site Info	0.30	13,146	Adj: 209	Adj: 11.01	13	0.04	1,770	0.1	0.9	8.1	184	6,491	0.001	0.05
14	**First Methodist Church of Mays Landing**														
	Bioretention systems														
	Total Site Info	1.07	46,434	757	7, 15, 16, 17	72	0.77	33,528	1.6	16.9	153.9	3,492	122,935	0.026	0.92
15	**Hamilton Township Municipal Building**														
	Bioretention systems														
	Pervious pavement														
	Total Site Info	12.46	542,597	786; 791	1.01; 2	29	3.57	155,444	7.5	78.5	713.7	16,192	569,962	0.121	4.26
16	**Hamilton Township Municipal Utilities Authority**														
	Bioretention systems														
	Total Site Info	0.33	14,460	753	14	48	0.16	6,958	0.3	3.5	31.9	725	25,513	0.005	0.19
17	**Mays Landing Fire Department: Station 18-1**														
	Bioretention systems														
	Pervious pavement														
	Total Site Info	0.51	22,257	741	13	70	0.36	15,608	0.8	7.9	71.7	1,626	57,230	0.012	0.43
18	**Rose Quaterman Park**														
	Bioretention system														
	Total Site Info	1.29	56,149	515	1	16	0.21	9,131	0.4	4.6	41.9	951	33,481	0.007	0.25
19	**St. Vincent de Paul Regional School**														
	Bioretention systems														
	Planter boxes														
	Total Site Info	2.16	93,914	807	4	74	1.60	69,787	3.4	35.2	320.4	7,269	255,885	0.054	1.91
20	**The Presbyterian Church of Mays Landing**														
	Bioretention systems														
	Pervious pavement														
	Total Site Info	0.62	26,900	757	13, 14	74	0.46	19,989	1.0	10.1	91.8	2,082	73,295	0.016	0.55
21	**Township of Hamilton Public Works**														
	Bioretention systems														
	Total Site Info	5.26	229,131	991	1	57	3.01	130,970	6.3	66.1	601.3	13,643	480,224	0.102	3.59

Summary of Existing Conditions

	Subwatershed/Site Name/Total Site Info/GI Practice	Area (ac)	Area (SF)	Block	Lot	I.C. %	I.C. Area (ac)	I.C. Area (SF)	Existing Annual Loads (Commercial) TP (lb/yr)	TN (lb/yr)	TSS (lb/yr)	Runoff Volumes from I.C. Water Quality Storm (1.25" over 2-hours) (cu.ft.)	Annual (cu.ft.)	Runoff Volumes from I.C. Water Quality Storm (1.25" over 2-hours) (Mgal)	Annual (Mgal)
	SOUTH RIVER SITES	**3.98**	**173,279**				**1.22**	**52,950**	**2.6**	**26.7**	**243.1**	**5,516**	**194,151**	**0.041**	**1.45**
22	**Atlantic County Office Building**														
	Bioretention systems														
	Pervious pavement														
	Total Site Info	3.98	173,279	732	35	31	1.22	52,950	2.6	26.7	243.1	5,516	194,151	0.041	1.45

d. 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)		($/unit)		($)	%
	BABCOCK CREEK SITES	**125,515**	**2.88**	**3.270**	**547**	**236,980**	**8.90**				**$306,675**	**3.6%**
1	**Atlantic Cape Community College**											
	Bioretention systems	11,600	0.27	0.302	51	22,180	0.83	2,900	$5	SF	$14,500	0.9%
	Total Site Info	**11,600**	**0.27**	**0.302**	**51**	**22,180**	**0.83**				**$14,500**	**0.9%**
2	**Atlantic County Institute of Technology & Special Services School District**											
	Bioretention systems	16,965	0.39	0.442	74	32,430	1.22	5,355	$5	SF	$26,775	1.1%
	Total Site Info	**16,965**	**0.39**	**0.442**	**74**	**32,430**	**1.22**				**$26,775**	**1.1%**
3	**Cologne Volunteer Fire Company: Station 18-5**											
	Bioretention systems	9,350	0.21	0.244	41	17,880	0.67	2,425	$5	SF	$12,125	19.3%
	Rainwater harvesting	1,740	0.04	0.045	8	1,500	0.06	1,500	$2	gal	$3,000	3.6%
	Total Site Info	**11,090**	**0.25**	**0.289**	**48**	**19,380**	**0.73**				**$15,125**	**22.9%**
4	**Joseph Shaner Elementary School**											
	Bioretention systems	10,885	0.25	0.284	47	20,810	0.78	2,730	$5	SF	$13,650	5.8%
	Total Site Info	**10,885**	**0.25**	**0.284**	**47**	**20,810**	**0.78**				**$13,650**	**5.8%**
5	**Laureldale Volunteer Fire and Rescue Company**											
	Bioretention systems	5,675	0.13	0.148	25	10,850	0.41	1,420	$5	SF	$7,100	12.6%
	Rainwater harvesting	1,050	0.02	0.027	5	850	0.03	850	$2	gal	$1,700	2.3%
	Total Site Info	**6,725**	**0.15**	**0.175**	**29**	**11,700**	**0.44**				**$8,800**	**14.9%**
6	**Liepzig Avenue Park**											
	Bioretention systems	6,800	0.16	0.177	30	13,000	0.49	1,700	$5	SF	$8,500	4.2%
	Pervious pavement	46,000	1.06	1.199	201	87,940	3.30	8,000	$25	SF	$200,000	28.7%
	Total Site Info	**52,800**	**1.21**	**1.376**	**230**	**100,940**	**3.79**				**$208,500**	**32.9%**
7	**Underhill Park**											
	Bioretention system	15,450	0.35	0.403	67	29,540	1.11	3,865	$5	SF	$19,325	10.4%
	Total Site Info	**15,450**	**0.35**	**0.403**	**67**	**29,540**	**1.11**				**$19,325**	**10.4%**
	GRAVELLY RUN SITES	**191,840**	**4.40**	**4.998**	**837**	**366,750**	**13.78**				**$766,000**	**10.2%**
8	**George L. Hess Educational Complex**											
	Bioretention system	5,600	0.13	0.146	24	10,700	0.40	1,400	$5	SF	$7,000	1.0%
	Pervious pavement	56,700	1.30	1.477	247	108,400	4.07	11,350	$25	SF	$283,750	10.3%
	Total Site Info	**62,300**	**1.43**	**1.623**	**272**	**119,100**	**4.47**				**$290,750**	**11.4%**
9	**Oakcrest High School**											
	Bioretention system	25,340	0.58	0.660	111	48,450	1.82	6,335	$5	SF	$31,675	2.9%
	Pervious pavement	81,150	1.86	2.114	354	155,140	5.83	16,590	$25	SF	$414,750	9.2%
	Total Site Info	**106,490**	**2.44**	**2.775**	**464**	**203,590**	**7.65**				**$446,425**	**12.1%**
10	**William Davies Middle School**											
	Bioretention systems	23,050	0.53	0.601	101	44,060	1.66	5,765	$5	SF	$28,825	5.1%
	Total Site Info	**23,050**	**0.53**	**0.601**	**101**	**44,060**	**1.66**				**$28,825**	**5.1%**

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)		($/unit)		($)	%
	GREAT EGG HARBOR RIVER SITES	**95,395**	**2.19**	**2.444**	**415**	**179,340**	**6.73**				**$407,225**	**19.8%**
11	**Atlantic County Library - Mays Landing Branch**											
	Pervious pavement	24,730	0.57	0.644	108	47,280	1.78	5,500	$25	SF	$137,500	65.0%
	Planter boxes	860	0.02	n/a	3	n/a	n/a	4	$1,000	box	$4,000	2.3%
	Total Site Info	**25,590**	**0.59**	**0.644**	**111**	**47,280**	**1.78**				**$141,500**	**67.3%**
12	**Cherry Lane Right of Way**											
	Bioretention system	1,150	0.03	0.030	5	2,200	0.08	290	$5	SF	$1,450	310.1%
	Total Site Info	**1,150**	**0.03**	**0.030**	**5**	**2,200**	**0.08**				**$1,450**	**310.1%**
13	**Driftwood Lane Right of Way**											
	Bioretention system	2,200	0.05	0.057	10	4,200	0.16	550	$5	SF	$2,750	124.3%
	Total Site Info	**2,200**	**0.05**	**0.057**	**10**	**4,200**	**0.16**				**$2,750**	**124.3%**
14	**First Methodist Church of Mays Landing**											
	Bioretention systems	3,250	0.07	0.085	14	6,220	0.23	815	$5	SF	$4,075	9.7%
	Total Site Info	**3,250**	**0.07**	**0.085**	**14**	**6,220**	**0.23**				**$4,075**	**9.7%**
15	**Hamilton Township Municipal Building**											
	Bioretention systems	2,775	0.06	0.072	12	5,300	0.20	700	$5	SF	$3,500	1.8%
	Pervious pavement	32,975	0.76	0.859	144	63,040	2.37	7,290	$25	SF	$182,250	21.2%
	Total Site Info	**35,750**	**0.82**	**0.931**	**156**	**68,340**	**2.57**				**$185,750**	**23.0%**
16	**Hamilton Township Municipal Utilities Authority**											
	Bioretention systems	1,950	0.04	0.051	9	3,730	0.14	500	$5	SF	$2,500	28.0%
	Total Site Info	**1,950**	**0.04**	**0.051**	**9**	**3,730**	**0.14**				**$2,500**	**28.0%**
17	**Mays Landing Fire Department: Station 18-1**											
	Bioretention systems	6,675	0.15	0.174	29	12,760	0.48	1,670	$5	SF	$8,350	42.8%
	Pervious pavement	3,520	0.08	0.092	15	6,730	0.25	810	$25	SF	$20,250	22.6%
	Total Site Info	**10,195**	**0.23**	**0.266**	**44**	**19,490**	**0.73**				**$28,600**	**65.3%**
18	**Rose Quaterman Park**											
	Bioretention system	2,650	0.06	0.069	12	5,060	0.19	665	$5	SF	$3,325	29.0%
	Total Site Info	**2,650**	**0.06**	**0.069**	**12**	**5,060**	**0.19**				**$3,325**	**29.0%**
19	**St. Vincent de Paul Regional School**											
	Bioretention systems	3,930	0.09	0.102	17	7,510	0.28	1,670	$5	SF	$8,350	5.6%
	Planter boxes	725	0.02	n/a	3	n/a	n/a	5	$1,000	box	$5,000	1.0%
	Total Site Info	**4,655**	**0.11**	**0.102**	**20**	**7,510**	**0.28**				**$13,350**	**6.7%**
20	**The Presbyterian Church of Mays Landing**											
	Bioretention systems	870	0.02	0.023	4	1,660	0.06	220	$5	SF	$1,100	4.4%
	Pervious pavement	2,985	0.07	0.078	13	5,710	0.21	755	$25	SF	$18,875	14.9%
	Total Site Info	**3,855**	**0.09**	**0.100**	**17**	**7,370**	**0.27**				**$19,975**	**19.3%**

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	Unit Cost ($/unit)	Unit	Total Cost ($)	I.C. Treated %
		Area (SF)	Area (ac)									
21	**Township of Hamilton Public Works**											
	Bioretention systems	4,150	0.10	0.108	18	7,940	0.30	790	$5	SF	$3,950	3.2%
	Total Site Info	**4,150**	**0.10**	**0.108**	**18**	**7,940**	**0.30**				**$3,950**	**3.2%**
	SOUTH RIVER SITES	**29,490**	**0.68**	**0.768**	**129**	**56,370**	**2.12**				**$132,950**	**55.7%**
22	**Atlantic County Office Building**											
	Bioretention systems	2,650	0.06	0.069	12	5,060	0.19	665	$5	SF	$3,325	5.0%
	Pervious pavement	26,840	0.62	0.699	117	51,310	1.93	5,185	$25	SF	$129,625	50.7%
	Total Site Info	**29,490**	**0.68**	**0.768**	**129**	**56,370**	**2.12**				**$132,950**	**55.7%**