RUTGERS
New Jersey Agricultural
Experiment Station

Draft

Impervious Cover Reduction Action Plan
for
Perth Amboy, Middlesex County, New Jersey

Prepared for Perth Amboy by the
Rutgers Cooperative Extension Water Resources Program

October 12, 2015

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Introduction

Located in Middlesex County in central New Jersey, Perth Amboy covers approximately 4.7 square miles. Figures 1 and 2 illustrate that Perth Amboy is dominated by urban land uses. A total of 79.1% of the municipality's land use is classified as urban. Of the urban land in Perth Amboy, high 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 Perth Amboy 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 Perth Amboy. Based upon the 2007 NJDEP land use/land cover data, approximately 52.6% of Perth Amboy has impervious cover. This level of impervious cover suggests that the streams in Perth Amboy are likely non-supportive streams.[1]

Methodology

Perth Amboy contains portions of four 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

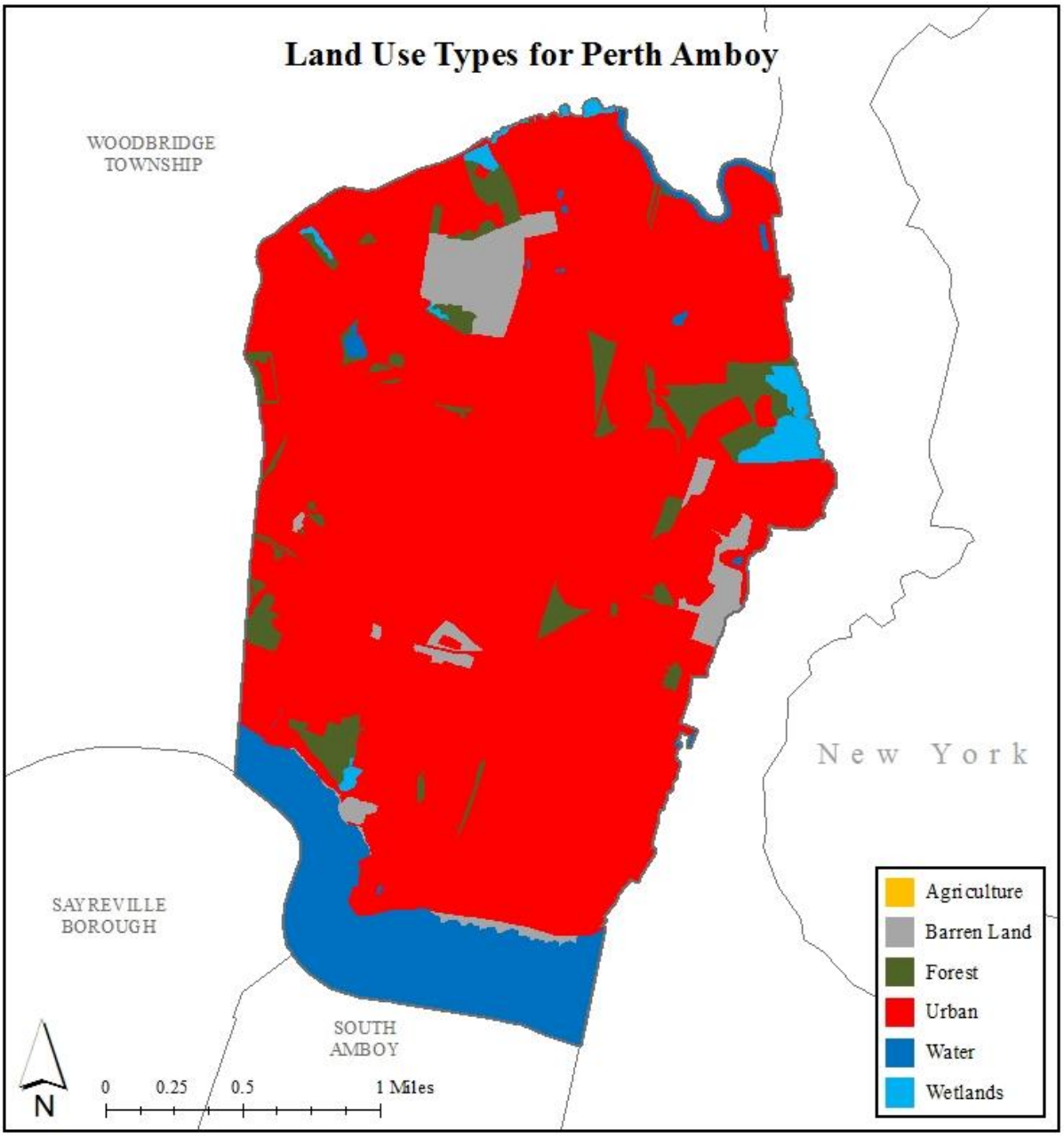


Figure 1: Map illustrating the land use in Perth Amboy

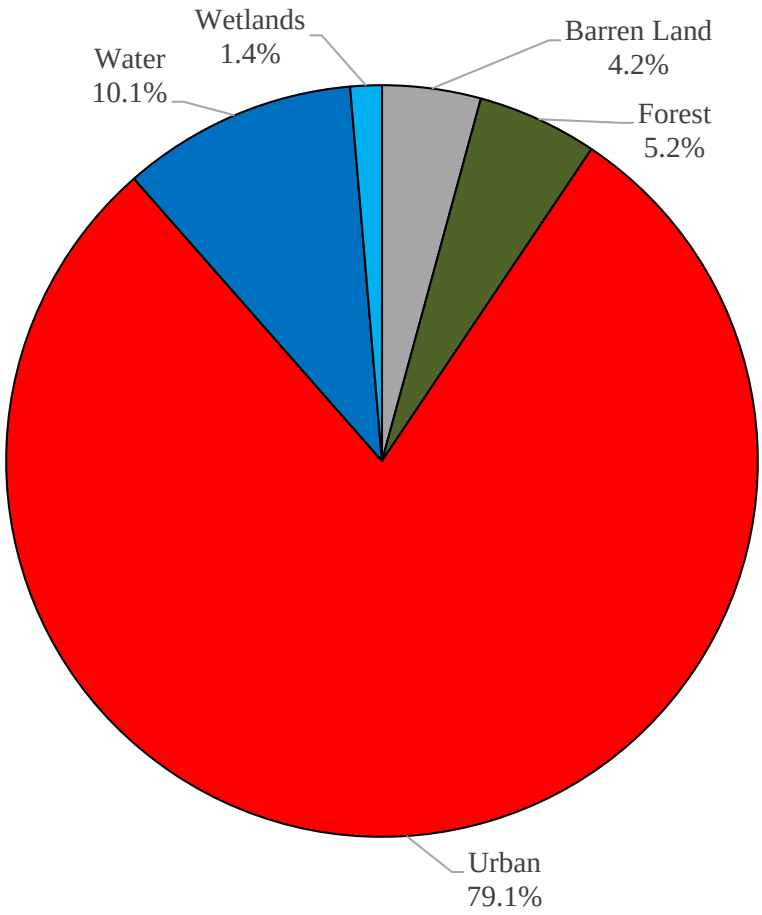


Figure 2: Pie chart illustrating the land use in Perth Amboy

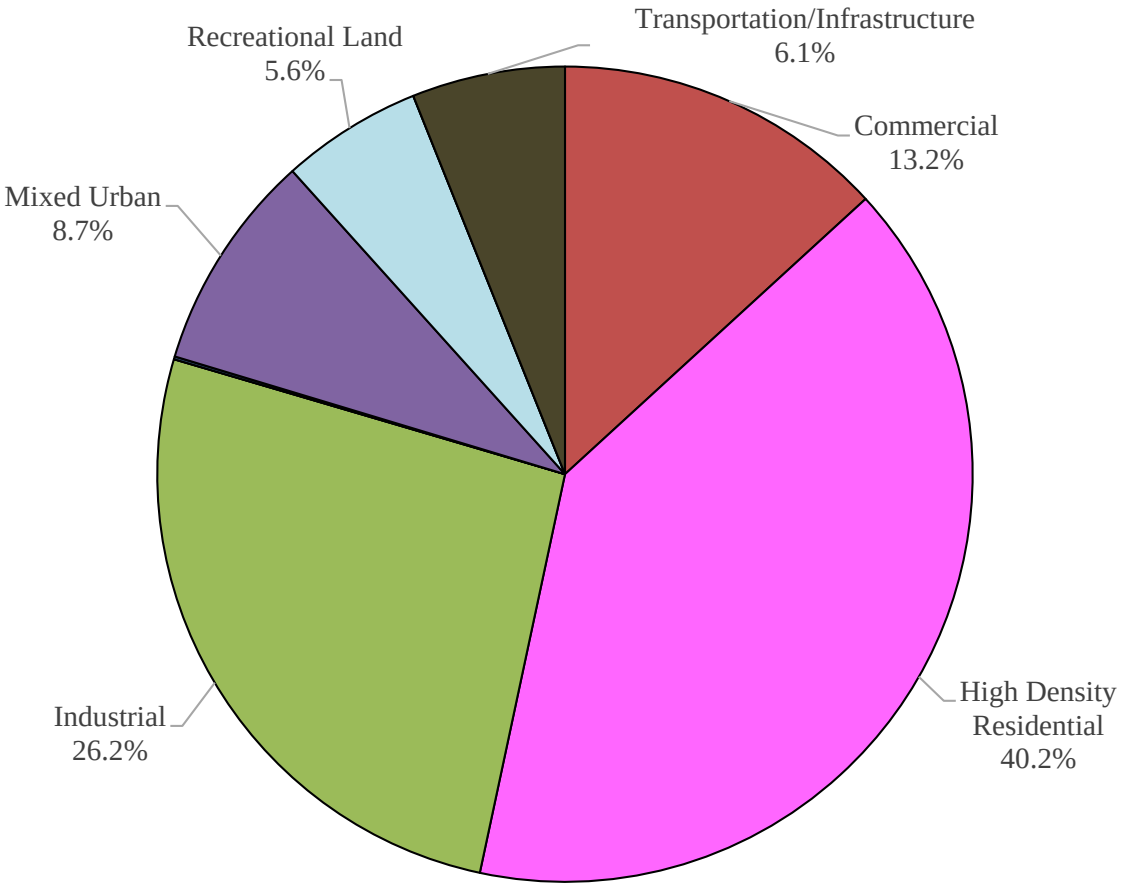


Figure 3: Pie chart illustrating the various types of urban land use in Perth Amboy

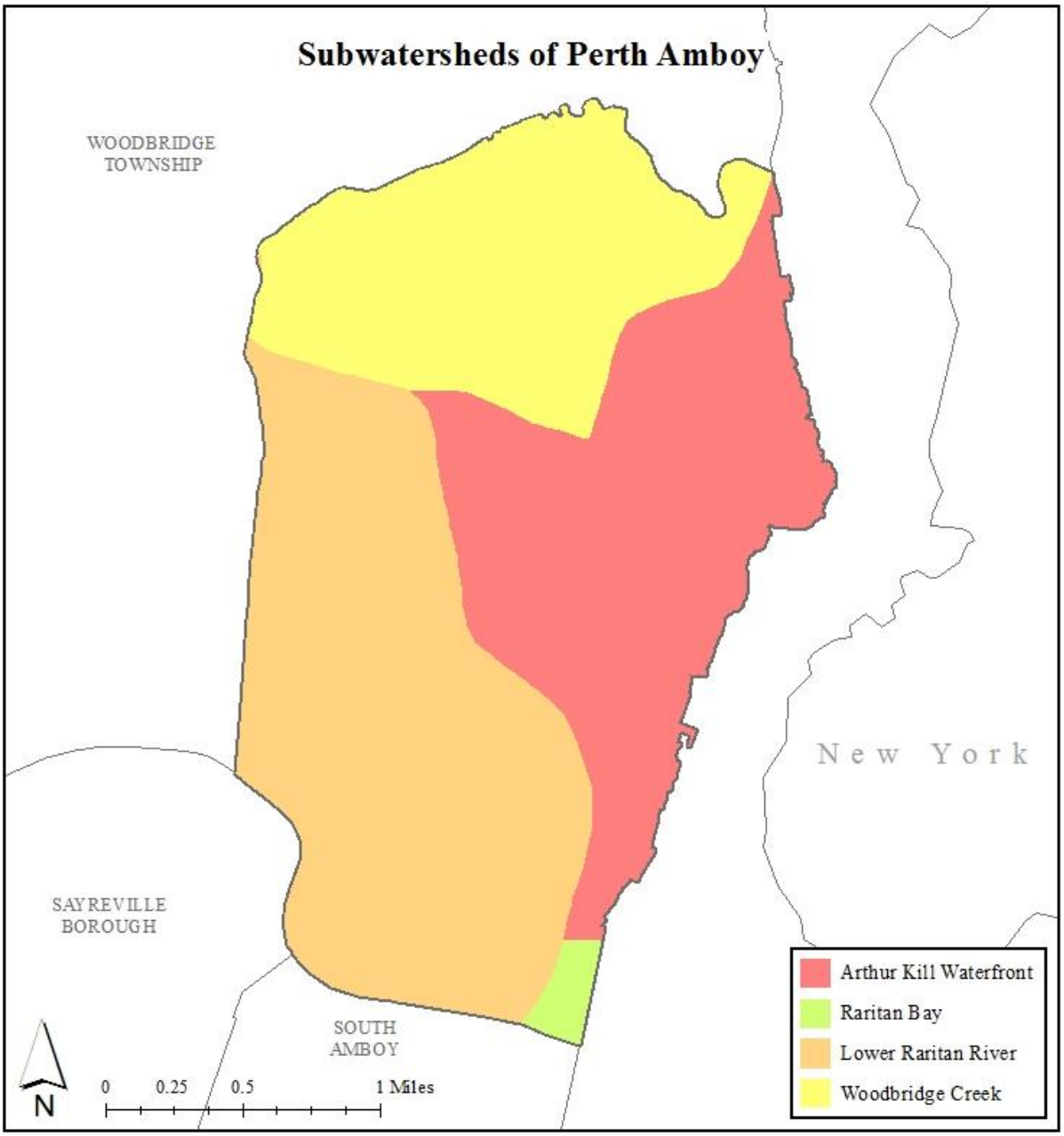


Figure 4: Map of the subwatersheds in Perth Amboy

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 Perth Amboy 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 Perth Amboy. 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

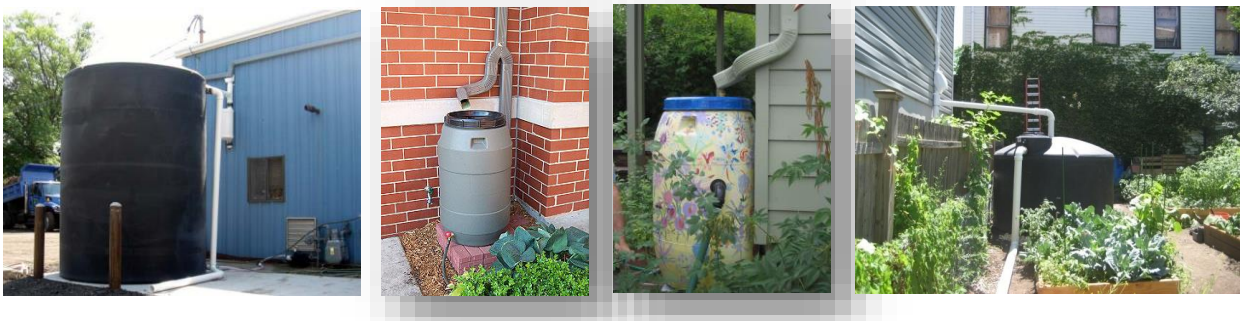
These are landscaped features that are designed to capture, treat, and infiltrate stormwater runoff. These systems can easily be incorporated into existing landscapes, improving aesthetics and creating a wildlife habitat while managing stormwater runoff. Bioretention systems also can be used in soils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

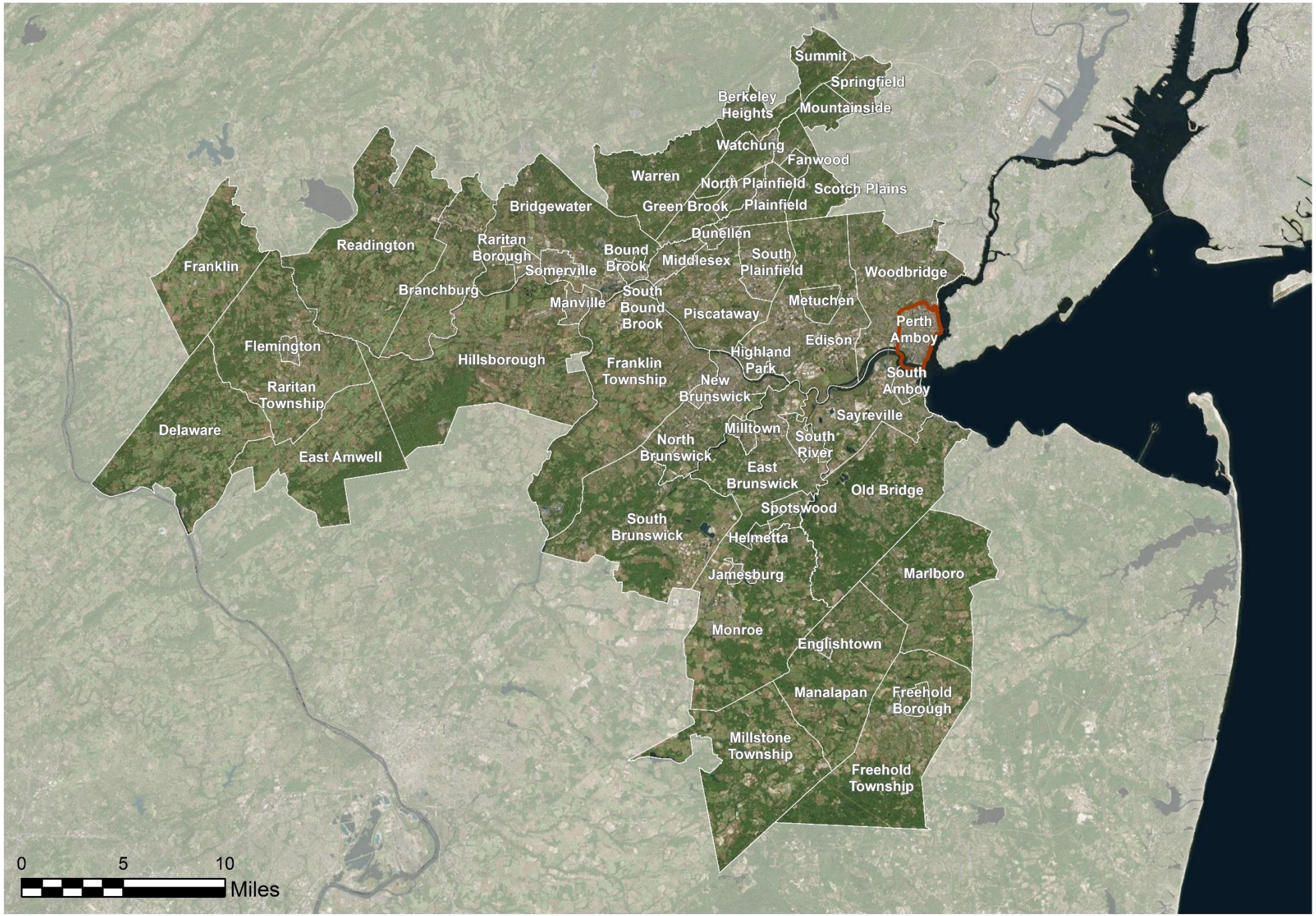
Conclusion

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

PERTH AMBOY: CLIMATE RESILIENT GREEN INFRASTRUCTURE FOR THE RARITAN BASIN



b. Green Infrastructure Sites

PERTH AMBOY: GREEN INFRASTRUCTURE SITES

SITES WITHIN THE ARTHUR KILL WATERFRONT SUBWATERSHED:

1. Anthony V. Ceres School
2. Assumption Catholic School
3. Education Center
4. Ignacio Cruz Early Childhood Center
5. Perth Amboy High School
6. Perth Amboy Vocational School

SITES WITHIN THE LOWER RARITAN RIVER SUBWATERSHED:

7. 587 Fayette Street Plaza
8. Convery Plaza Shopping Center
9. Dr. Herbert N. Richardson 21st Century School
10. Public School No. 7
11. Raritan Bay Medical Center
12. Robert N. Wilentz Elementary
13. Walgreens
14. Washington Park
15. YMCA and Perth Amboy Police Department

SITES WITHIN THE WOODBRIDGE CREEK SUBWATERSHED:

16. 966 Convery Boulevard
17. 1012 Amboy Avenue
18. Edmund Hmieleski Jr. Early Childhood Center
19. James J. Flynn Elementary

c. Proposed Green Infrastructure Concepts

ANTHONY V. CERES SCHOOL

Subwatershed: Arthur Kill

Site Area: 111,348 sq. ft.

Address: 445 State Street
Perth Amboy, NJ 08861

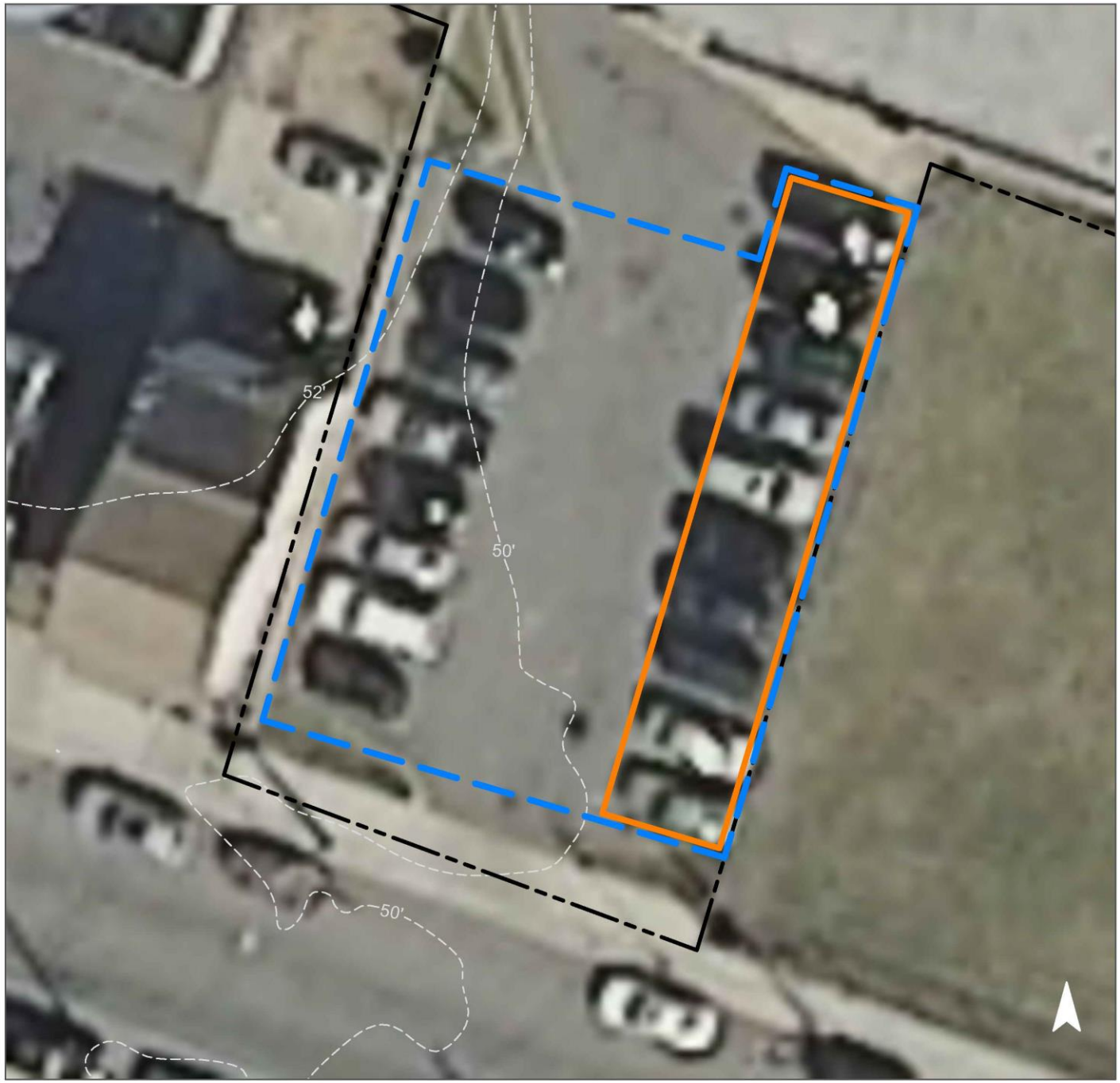
Block and Lot: Block 228.02, Lot 2

The parking spaces located in the back section of the site can be replaced with pervious pavement to intercept 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"
95	105,276	5.1	53.2	483.4	0.082	2.89

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	0.132	22	9,672	0.36	1,600	$40,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Anthony V. Ceres School

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

0 10' 20'

ASSUMPTION CATHOLIC SCHOOL

Subwatershed: **Arthur Kill**

Site Area: **79,150 sq. ft.**

Address: **376 Meredith Street**
Perth Amboy, NJ 08861

Block and Lot: **Block 327, Lot 1**

Parking spaces can be replaced with pervious pavement to infiltrate stormwater runoff in the north section of the site. A rain garden can be built in the southwest section of the site 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"
80	63,320	3.1	32.0	290.7	0.049	1.74

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	0.055	9	4,039	0.15	1,019	$5,095
Pervious pavements	0.454	76	33,301	1.25	2,916	$72,900

GREEN INFRASTRUCTURE RECOMMENDATIONS

Assumption Catholic School

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

0 30' 60'

EDUCATION CENTER

Subwatershed: Arthur Kill

Site Area: 62,074 sq. ft.

Address: 178 Barracks Street
Perth Amboy, NJ 08861

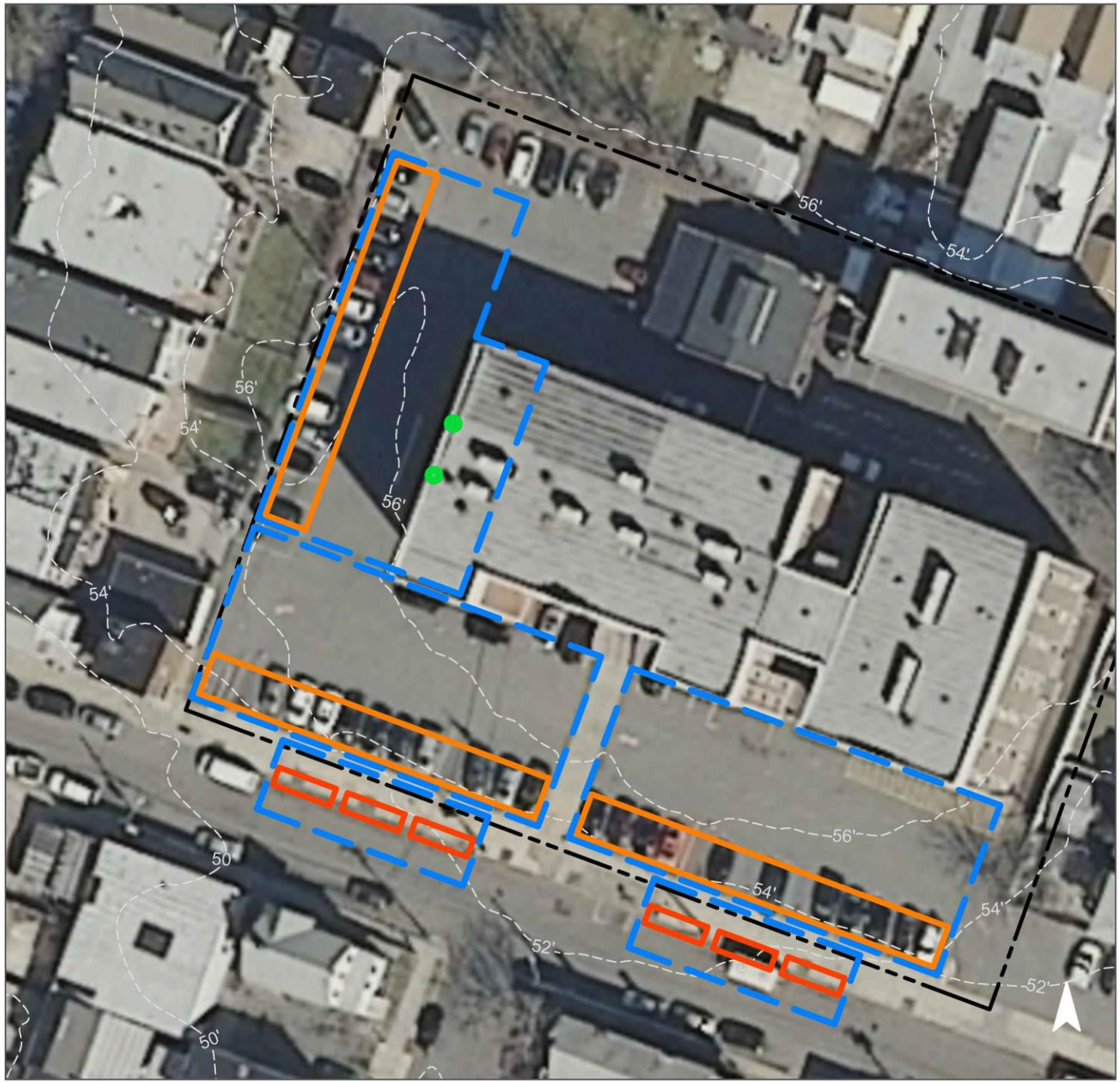
Block and Lot: Block 149, Lot 38

The parking spaces located in the northeast, and southeast sections of the site can be replaced with pervious pavement to infiltrate runoff. Stormwater planters can be installed in the sidewalk to intercept stormwater runoff from the roadway and sidewalk. 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"
90	55,867	2.7	28.2	256.5	0.044	1.53

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavements	0.589	99	43,190	1.62	5,123	$128,075
Stormwater planters	0.090	15	6,642	0.25	720	$72,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Education Center

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

0 25' 50'

IGNACIO CRUZ EARLY CHILDHOOD CENTER

Subwatershed: Arthur Kill

Site Area: 209,212 sq. ft.

Address: 601 Cortland Street
Perth Amboy, NJ 08861

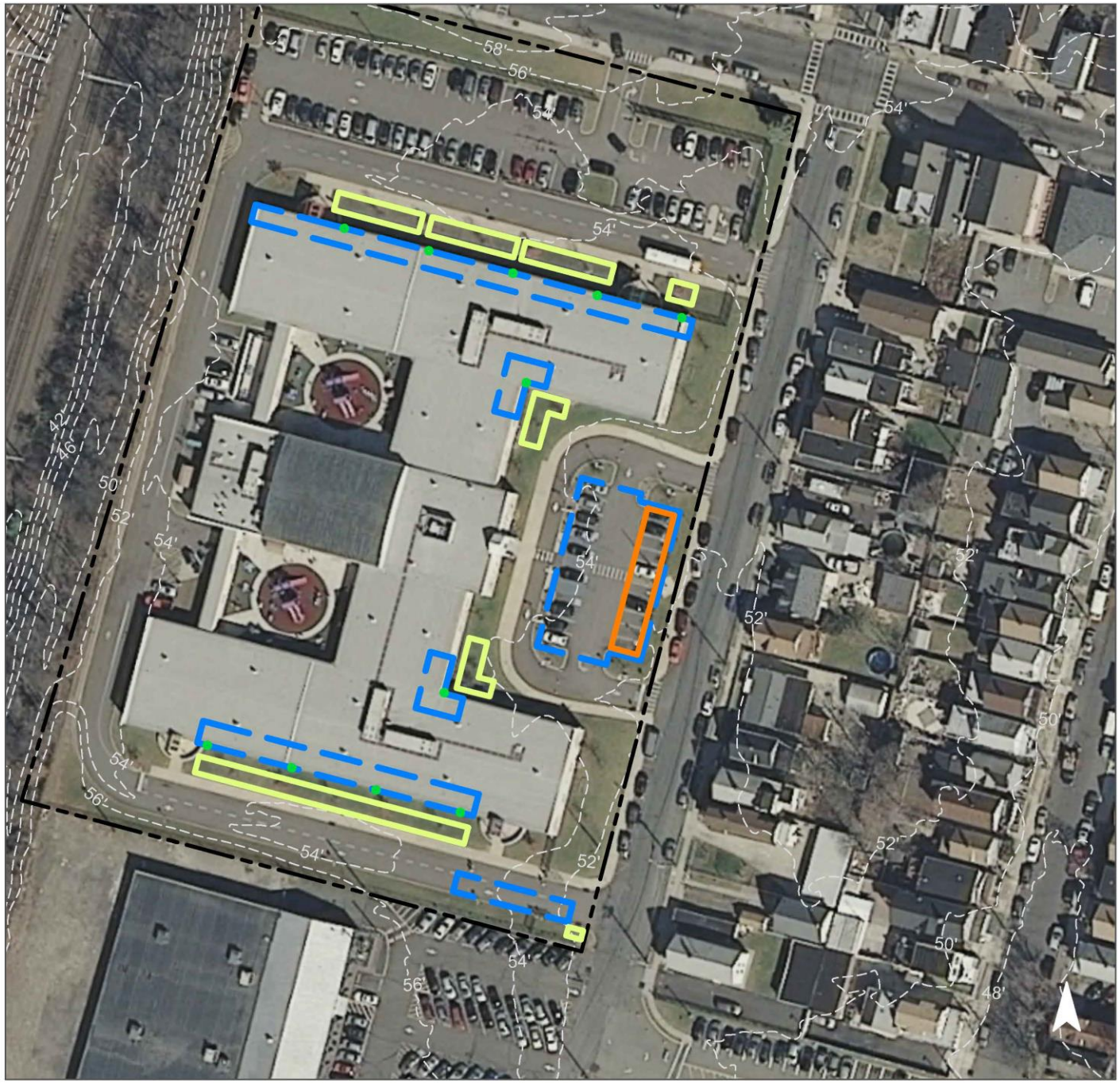
Block and Lot: Block 259, Lot 1.01

Parking spaces located in the east section of the site can be replaced with pervious pavement to capture and infiltrate stormwater runoff. There are multiple opportunities to install rain gardens at the center to capture, treat, and infiltrate runoff. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
85	177,724	8.6	89.8	816.0	0.138	4.87

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	0.227	38	16,636	0.63	5,437	$27,185
Pervious pavements	0.194	32	14,212	0.53	1,692	$42,300

GREEN INFRASTRUCTURE RECOMMENDATIONS



Ignacio Cruz Early Childhood Center

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

0 50' 100'

PERTH AMBOY HIGH SCHOOL

Subwatershed: **Arthur Kill**

Site Area: **290,796 sq. ft.**

Address: **300 Eagle Avenue**
Perth Amboy, NJ 08861

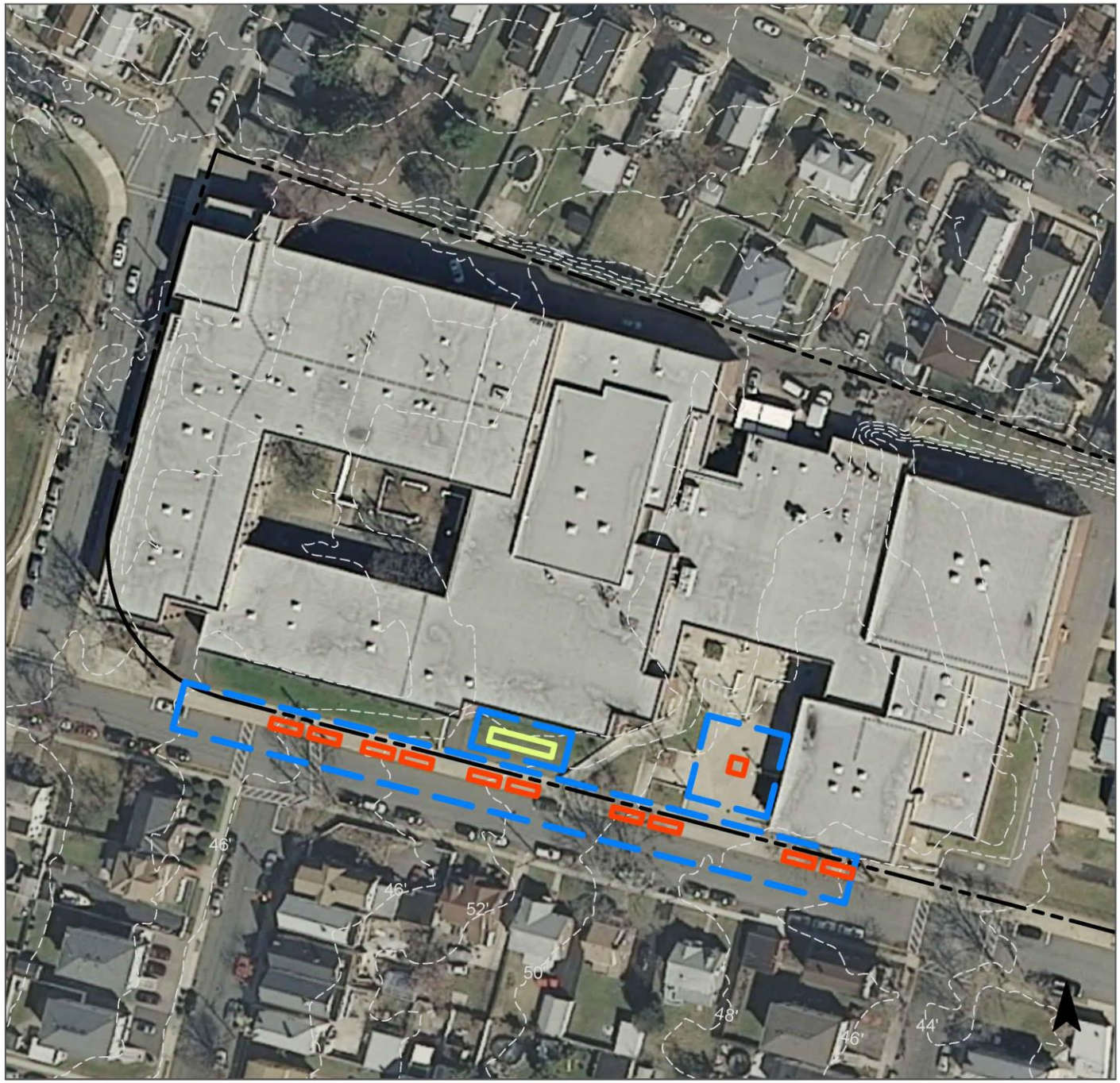
Block and Lot: **Block 370, Lot 1.01**

Stormwater planters can be built along the right of way area to capture and infiltrate runoff, and decrease the percentage of impervious cover. In the center of the high school plaza, a stormwater planter can be installed to capture and infiltrate runoff. A rain garden can also be built in areas of compaction. 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"
70	204,838	9.9	103.5	940.5	0.160	5.62

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.048	8	3,523	0.13	461	$2,305
Stormwater planters	0.449	75	32,979	1.24	1,515	$151,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



Perth Amboy High School

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

0 50' 100'

PERTH AMBOY VOCATIONAL SCHOOL

Subwatershed: Arthur Kill

Site Area: 265,259 sq. ft.

Address: 467 High Street
Perth Amboy, NJ 08861

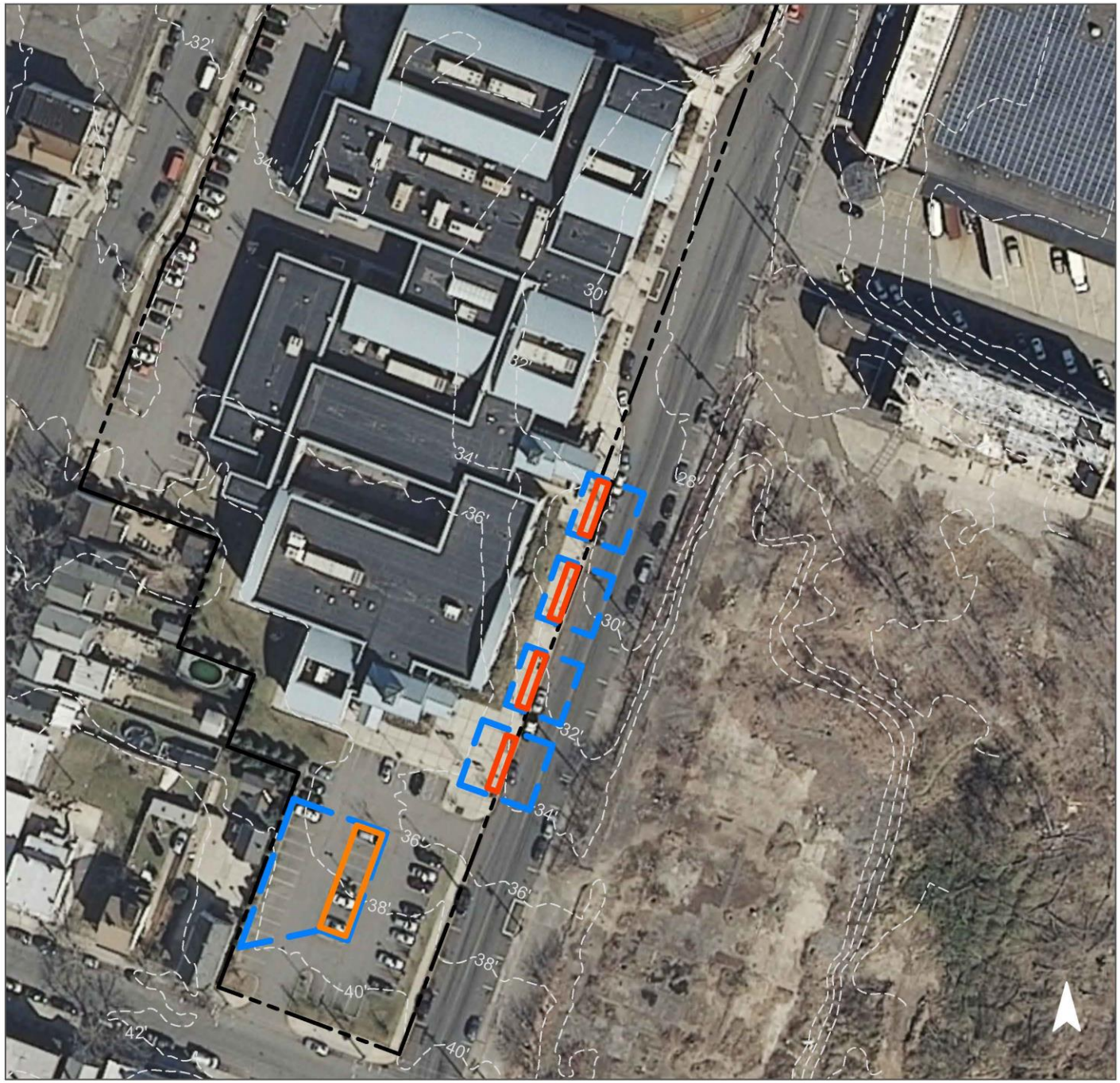
Block and Lot: Block 244, Lot 2.01

Parking spaces can be replaced with pervious pavement to infiltrate runoff. Stormwater planters can be installed in the east section of the site to infiltrate runoff from the sidewalk. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
65	171,213	8.3	86.5	786.1	0.133	4.70

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavements	0.143	24	10,494	0.39	1,278	$31,950
Stormwater planters	0.179	30	13,157	0.49	1,020	$102,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Perth Amboy Vocational School

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

0 50' 100'

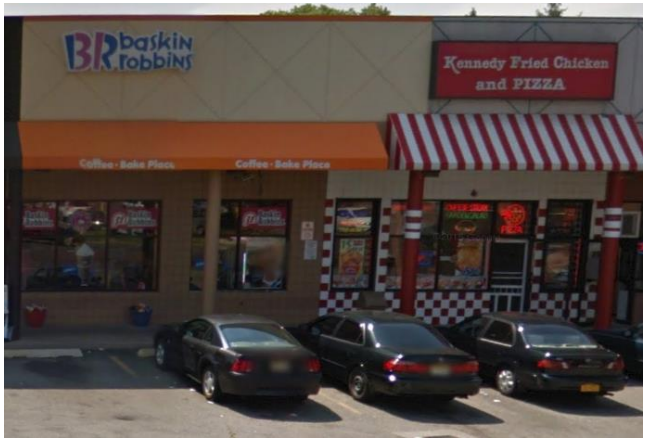
587 FAYETTE STREET PLAZA

Subwatershed: Lower Raritan River

Site Area: 38,841 sq. ft.

Address: 587 Fayette Street
Perth Amboy, NJ 08861

Block and Lot: Block 97, Lot 15-26; 28-30

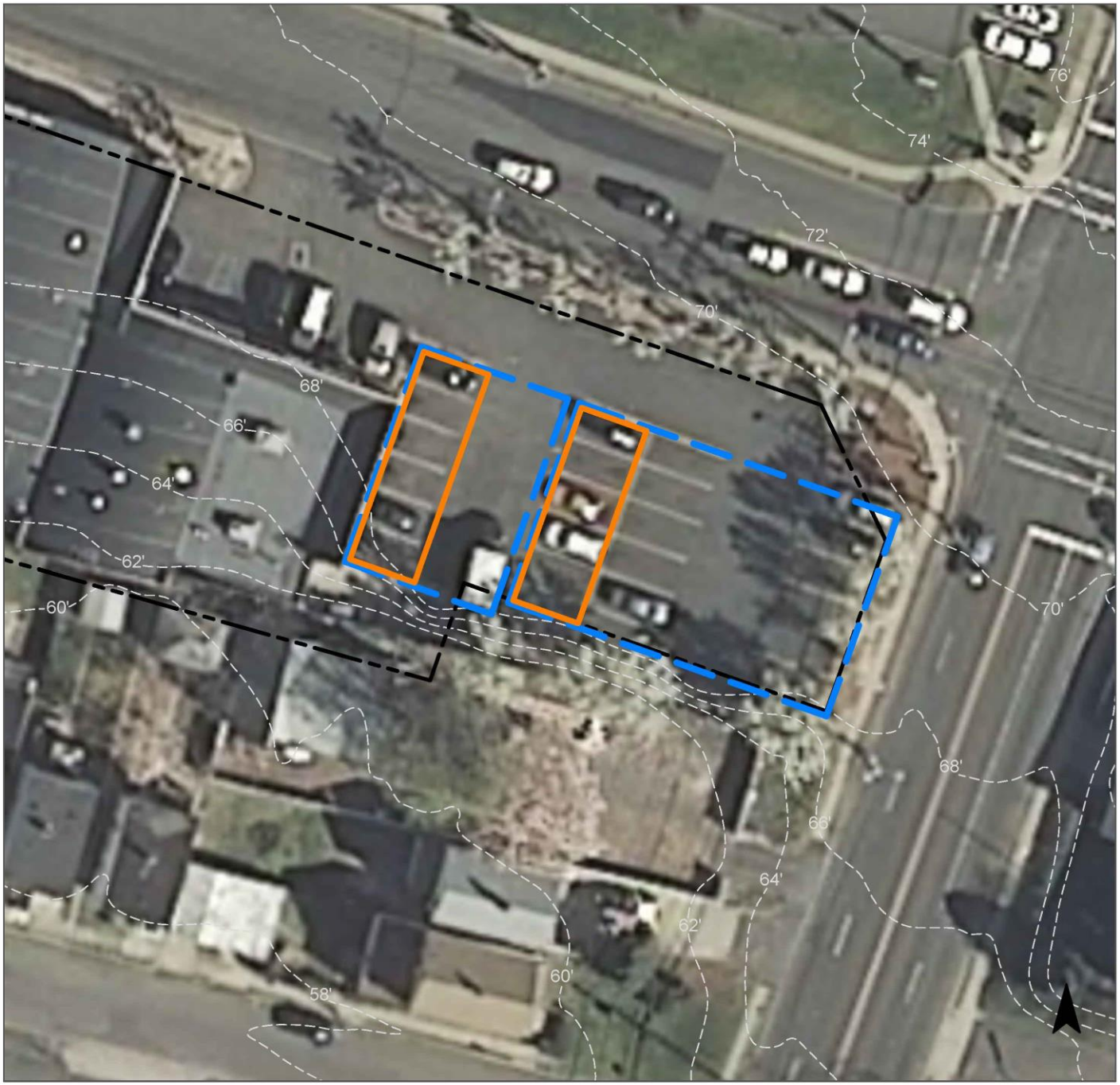


Parking spaces can be replaced with porous asphalt to capture and infiltrate stormwater runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

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"
75	29,059	1.4	14.7	133.4	0.023	0.80

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavements	0.186	31	13,658	0.51	1,999	$49,975

GREEN INFRASTRUCTURE RECOMMENDATIONS



587 Fayette Street Plaza

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

0 20' 40'

CONVERY PLAZA SHOPPING CENTER

Subwatershed: Lower Raritan River

Site Area: 378,506 sq. ft.

Address: 365 Convery Boulevard
Perth Amboy, NJ 08861

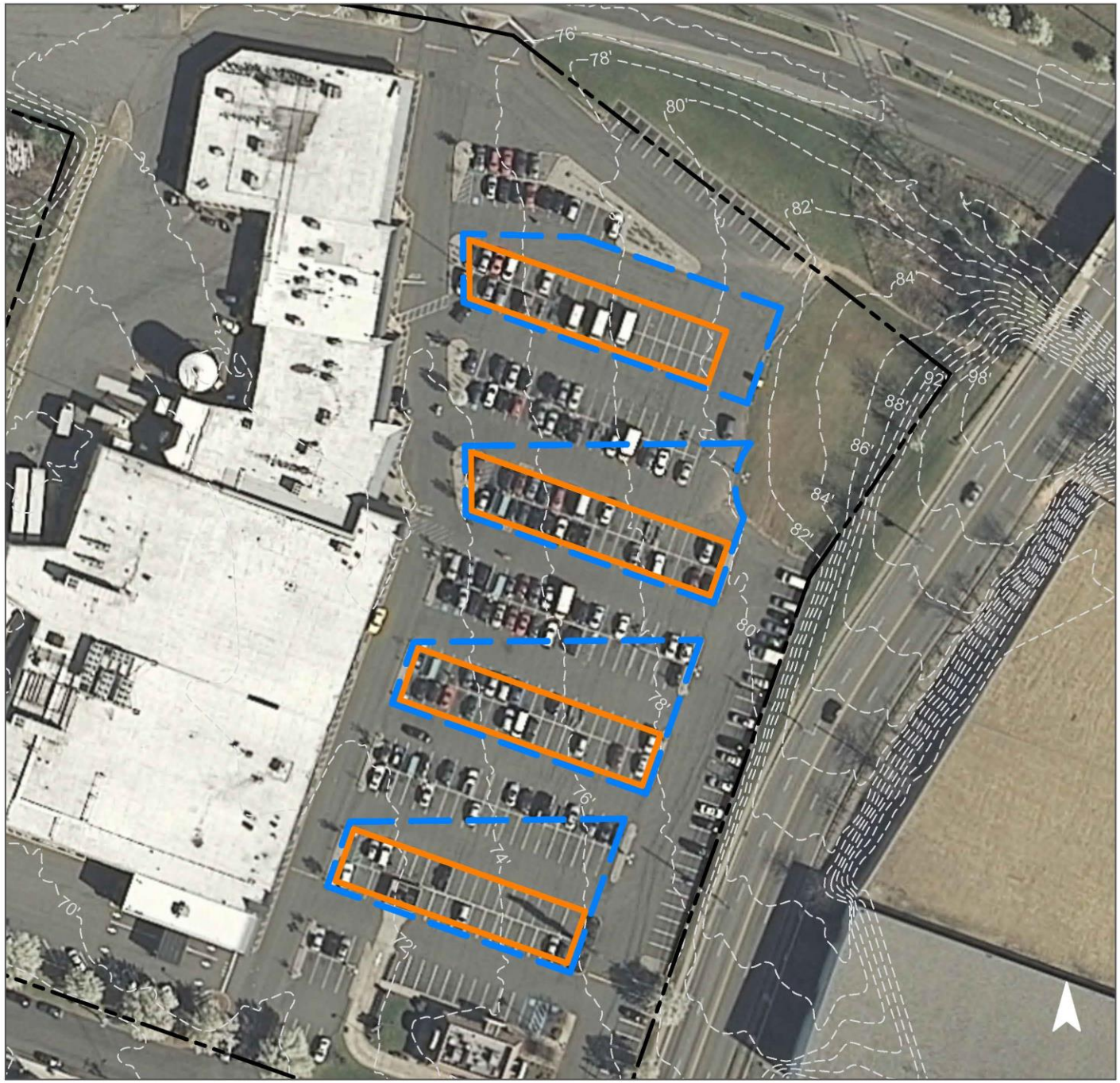
Block and Lot: Block 96.04, Lot 1.01

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

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
90	340,063	16.4	171.7	1,561.4	0.265	9.33

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
Pervious pavements	1.368	229	100,367	3.77	24,285	$607,125

GREEN INFRASTRUCTURE RECOMMENDATIONS



Convery Plaza Shopping Center

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

0 50' 100'

DR. HERBERT N. RICHARDSON 21ST CENTURY SCHOOL

Subwatershed: Lower Raritan River

Site Area: 171,911 sq. ft.

Address: 318 Stockton Street
Perth Amboy, NJ 08861

Block and Lot: Block 114, Lot 2.01

The playground area in the southwest section of the site can be replaced with pervious pavement to allow water to infiltrate through the surface. Stormwater planters can be installed in this area to intercept stormwater runoff from the sidewalk. Two rain gardens can be built in the southern courtyard section to capture, treat and infiltrate stormwater. Another rain garden can be built on the east side of the school to manage runoff. A row of parking spaces can be replaced with pervious pavement to infiltrate stormwater. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
90	154,142	7.4	77.8	707.7	0.120	4.23

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	1,676	0.06	921	$4,605
Pervious pavements	0.618	103	45,344	1.70	17,732	$443,300

GREEN INFRASTRUCTURE RECOMMENDATIONS

Dr. Herbert N. Richardson 21st Century School

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

0 50' 100'

PUBLIC SCHOOL No. 7

Subwatershed: Lower Raritan River

Site Area: 23,693 sq. ft.

Address: 163 Patterson Street
Perth Amboy, NJ 08861

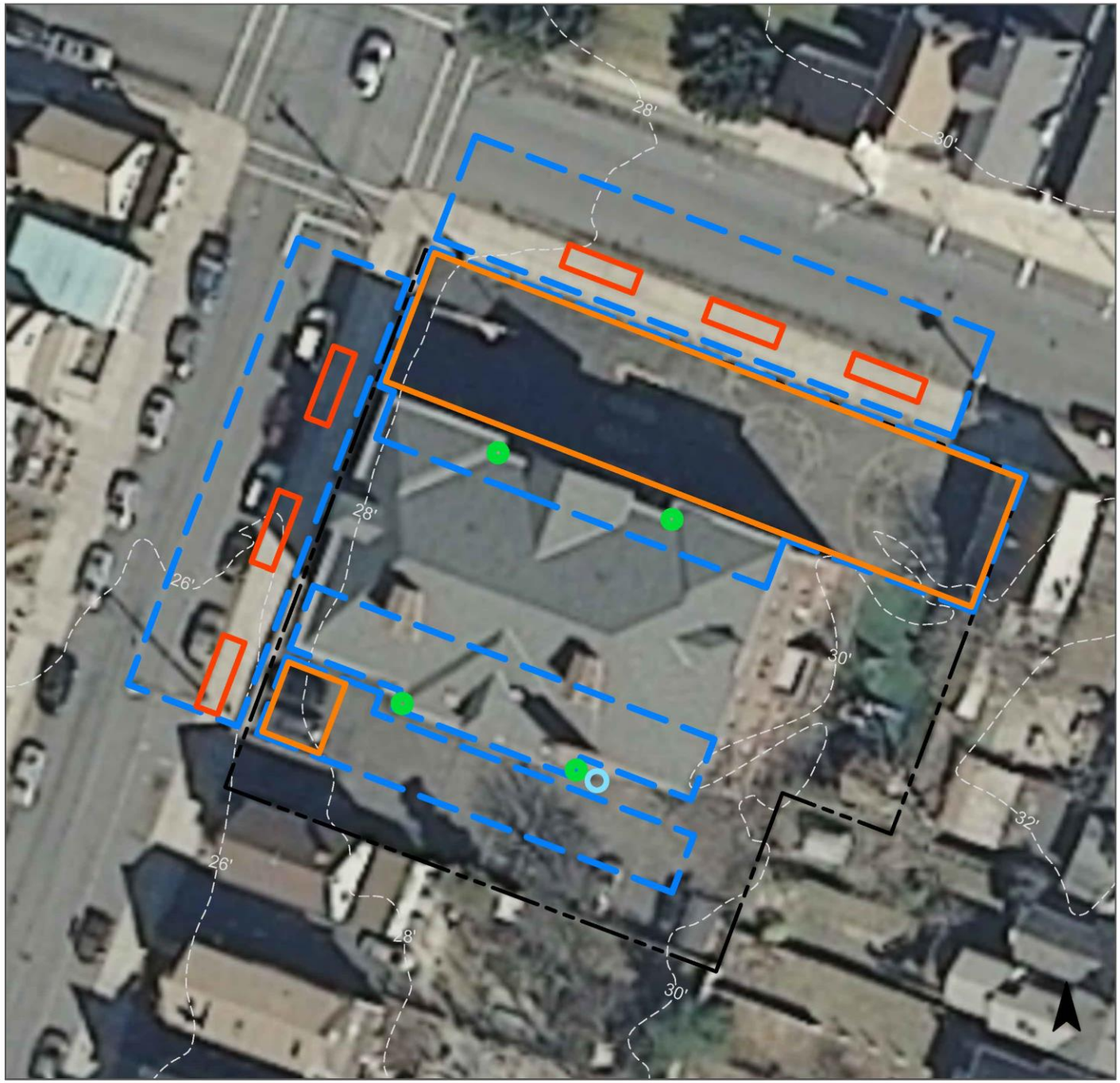
Block and Lot: Block 19, Lot 35

The playground and parking spaces can be replaced with pervious pavement to allow stormwater to infiltrate. Downspouts located in the back of the school can also be disconnected into a cistern to harvest rainwater. This water can be used to conduct car wash fund raising events. Stormwater planters can also be built in the sidewalks, to infiltrate and treat runoff from the road and sidewalk, thereby treating more than one hundred percent of the site's impervious cover. 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"
90	21,343	1.0	10.8	98.0	0.017	0.59

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavements	0.259	43	18,999	0.71	6,391	$159,775
Rainwater harvesting systems	0.057	10	2,000	0.16	2,000 (gal)	$4,000
Stormwater planters	0.209	35	15,334	0.58	720	$72,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Public School No. 7

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

0 20' 40'

RARITAN BAY MEDICAL CENTER

Subwatershed: Lower Raritan River

Site Area: 32,828 sq. ft.

Address: 1545 New Brunswick Avenue
Perth Amboy, NJ 08861

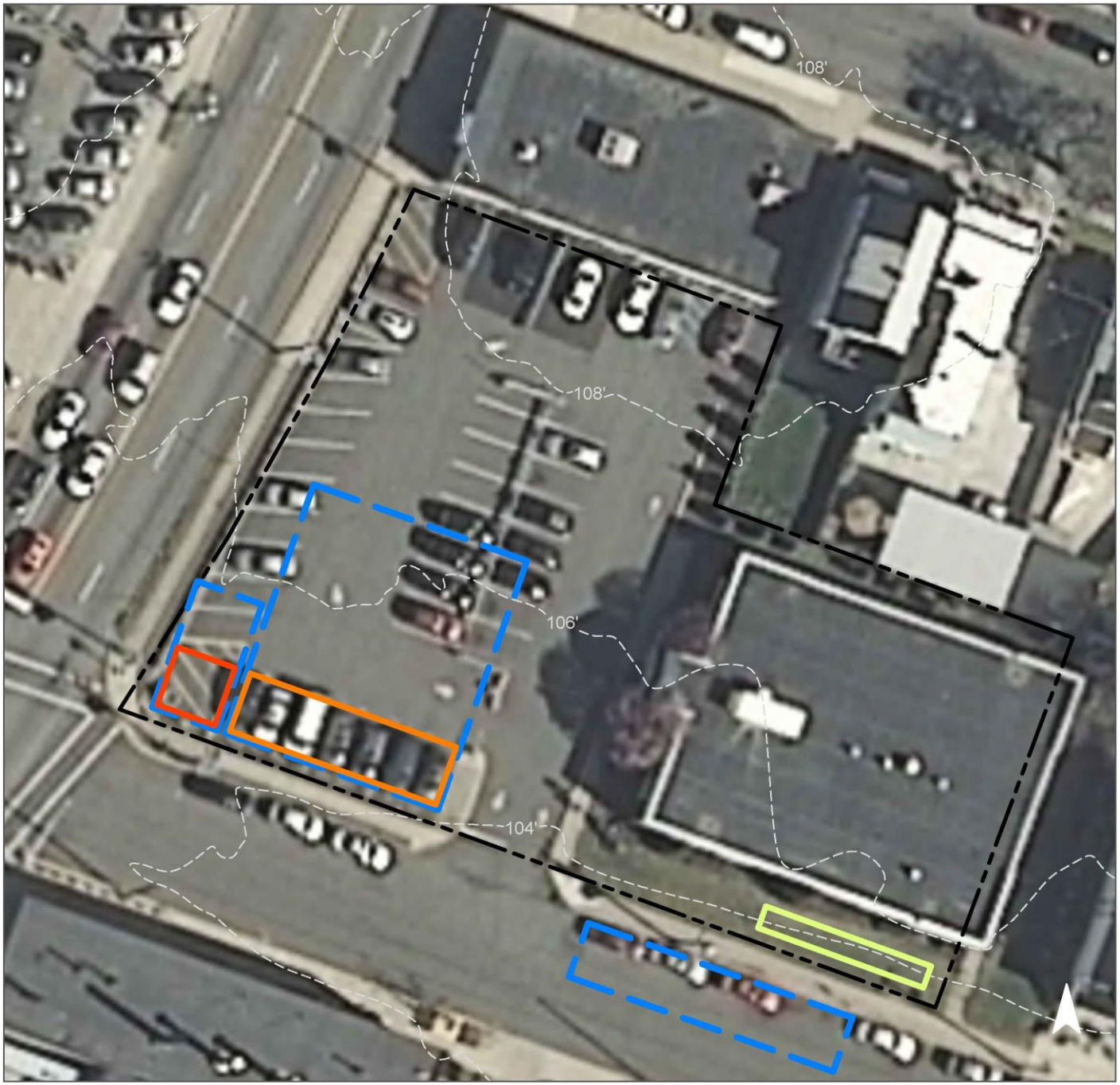
Block and Lot: Block 198, Lot 1-9; 48-51

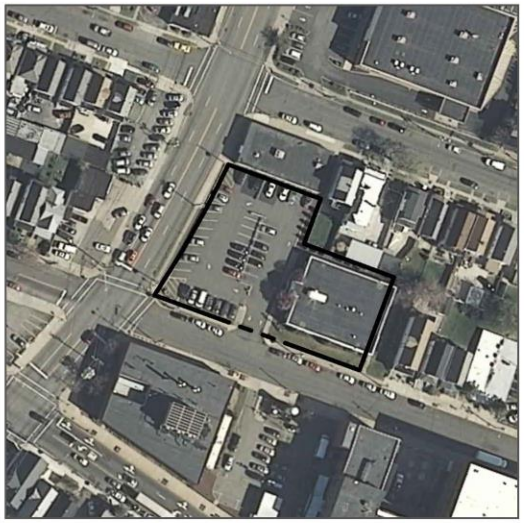
The parking spaces in the south section of the site can be replaced with pervious pavement to capture and infiltrate stormwater. A stormwater planter can also be installed in this area to intercept stormwater runoff from the pavement, and reduce the percentage of impervious cover. A bioretention system can be installed in the southeast area of the property 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"
94	31,006	1.5	15.7	142.4	0.024	0.85

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	0.029	5	2,109	0.08	276	$1,380
Pervious pavements	0.107	18	7,817	0.29	916	$22,900
Stormwater planters	0.016	3	1,204	0.05	324	$32,400

GREEN INFRASTRUCTURE RECOMMENDATIONS





Raritan Bay Medical Center

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

0 20' 40'

ROBERT N. WILENTZ ELEMENTARY SCHOOL

Subwatershed: Lower Raritan River

Site Area: 180,965 sq. ft.

Address: 51 1st Street
Perth Amboy, NJ 08861

Block and Lot: Block 9, Lot 1; 2

Three rain gardens can be built in the east section of the site to capture, treat, and infiltrate runoff. Stormwater planters can be installed to intercept stormwater runoff from the sidewalk and roadway. Parking spots located in the northwest section of the parking lot can be replaced with pervious pavement to infiltrate stormwater. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
85	153,675	7.4	77.6	705.6	0.120	4.21

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	0.267	45	19,598	0.74	1,927	$9,635
Pervious pavements	0.476	80	34,894	1.31	3,735	$93,375
Stormwater planters	0.189	32	13,868	0.52	1,500	$150,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Robert N. Wilentz Elementary School

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

0 50' 100'

WALGREENS

Subwatershed: Lower Raritan River

Site Area: 52,174 sq. ft.

Address: 508 Neville Street
Perth Amboy, NJ 08861

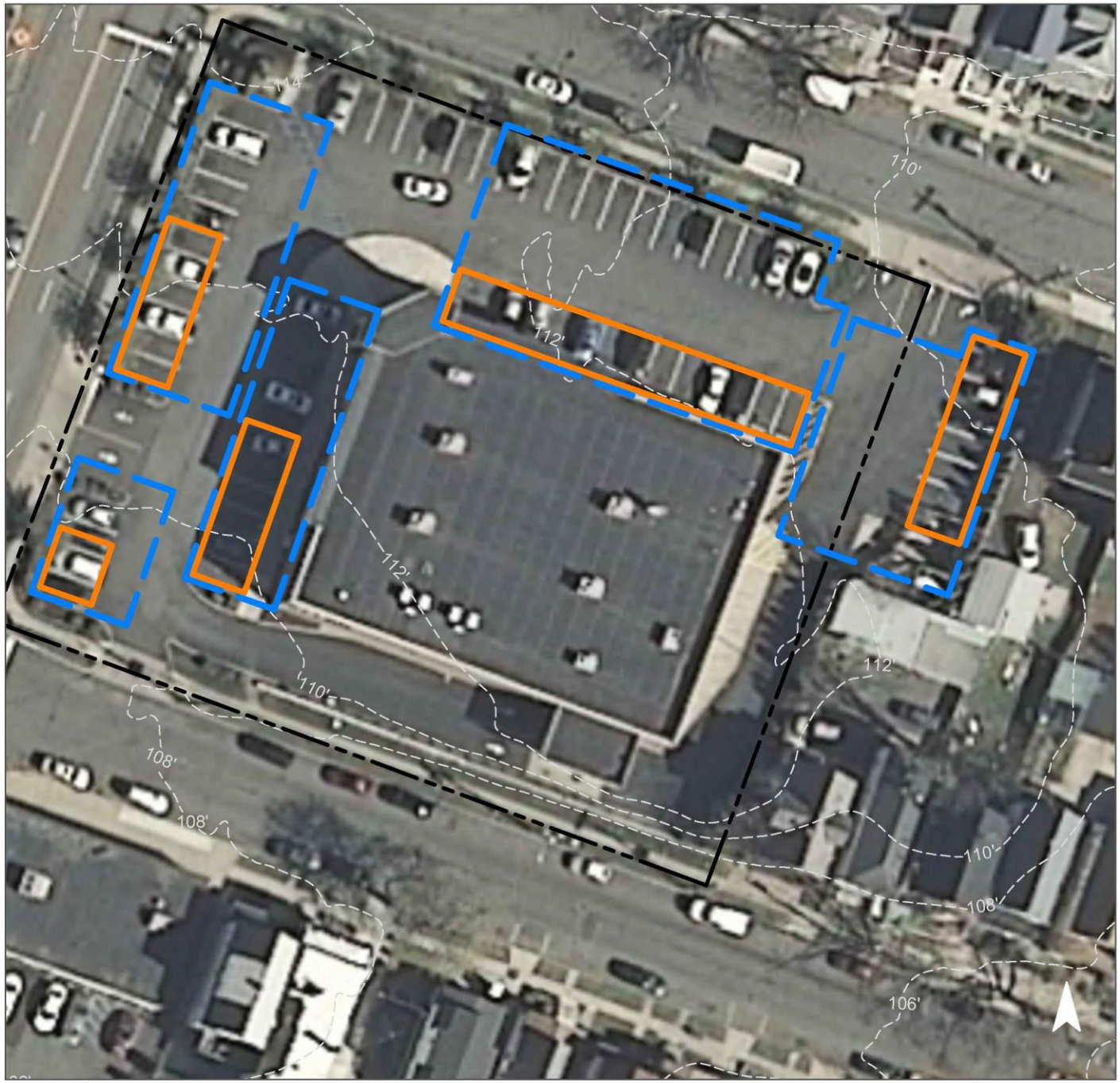
Block and Lot: Block 197, Lot 1

Stormwater is currently directed to existing catch basins. Parking spaces can be replaced with pervious pavement to capture and infiltrate stormwater while also reducing the amount of impervious cover. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
95	49,495	2.4	25.0	227.3	0.039	1.36

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavements	0.520	87	38,141	1.43	5,642	$141,050

GREEN INFRASTRUCTURE RECOMMENDATIONS



Walgreens

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

0 25' 50'

WASHINGTON PARK

Subwatershed: Lower Raritan River

Site Area: 309,374 sq. ft.

Address: Weirup Street
Perth Amboy, NJ 08861

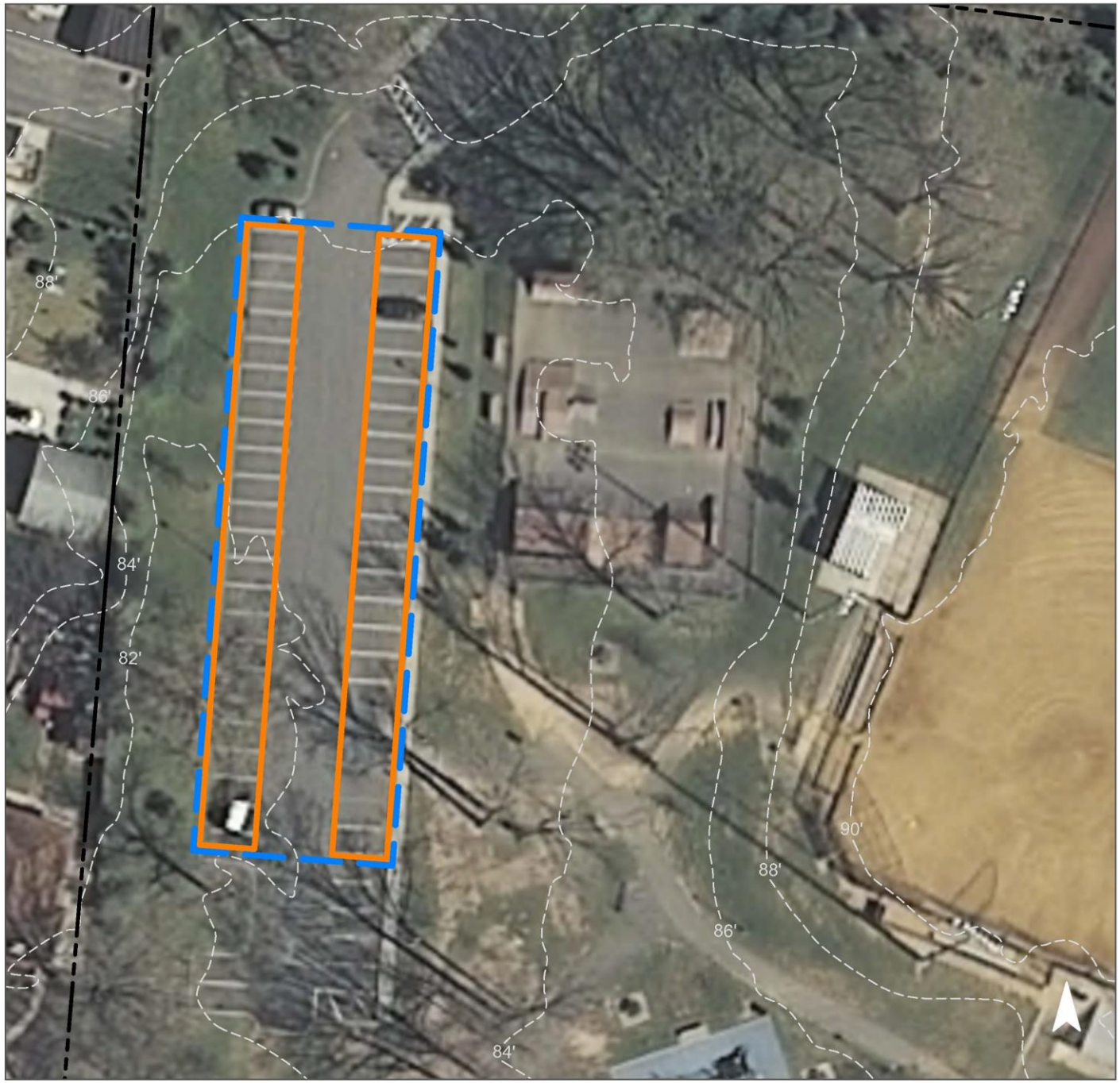
Block and Lot: Block 191.01, Lot 1

Parking spaces can be replaced with pervious pavement to infiltrate stormwater. Gutters and a rain garden can be installed to capture, treat, and infiltrate runoff near the playground. 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"
21	63,682	3.1	32.2	292.4	0.050	1.75

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	1,384	0.05	543	$2,715
Pervious pavements	0.335	56	24,587	0.92	7,344	$183,600

GREEN INFRASTRUCTURE RECOMMENDATIONS



Washington Park

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

0 25' 50'

YMCA AND PERTH AMBOY POLICE DEPARTMENT

Subwatershed: Lower Raritan River

Site Area: 443,680 sq. ft.

Address: 375 New Brunswick Avenue
Perth Amboy, NJ 08861

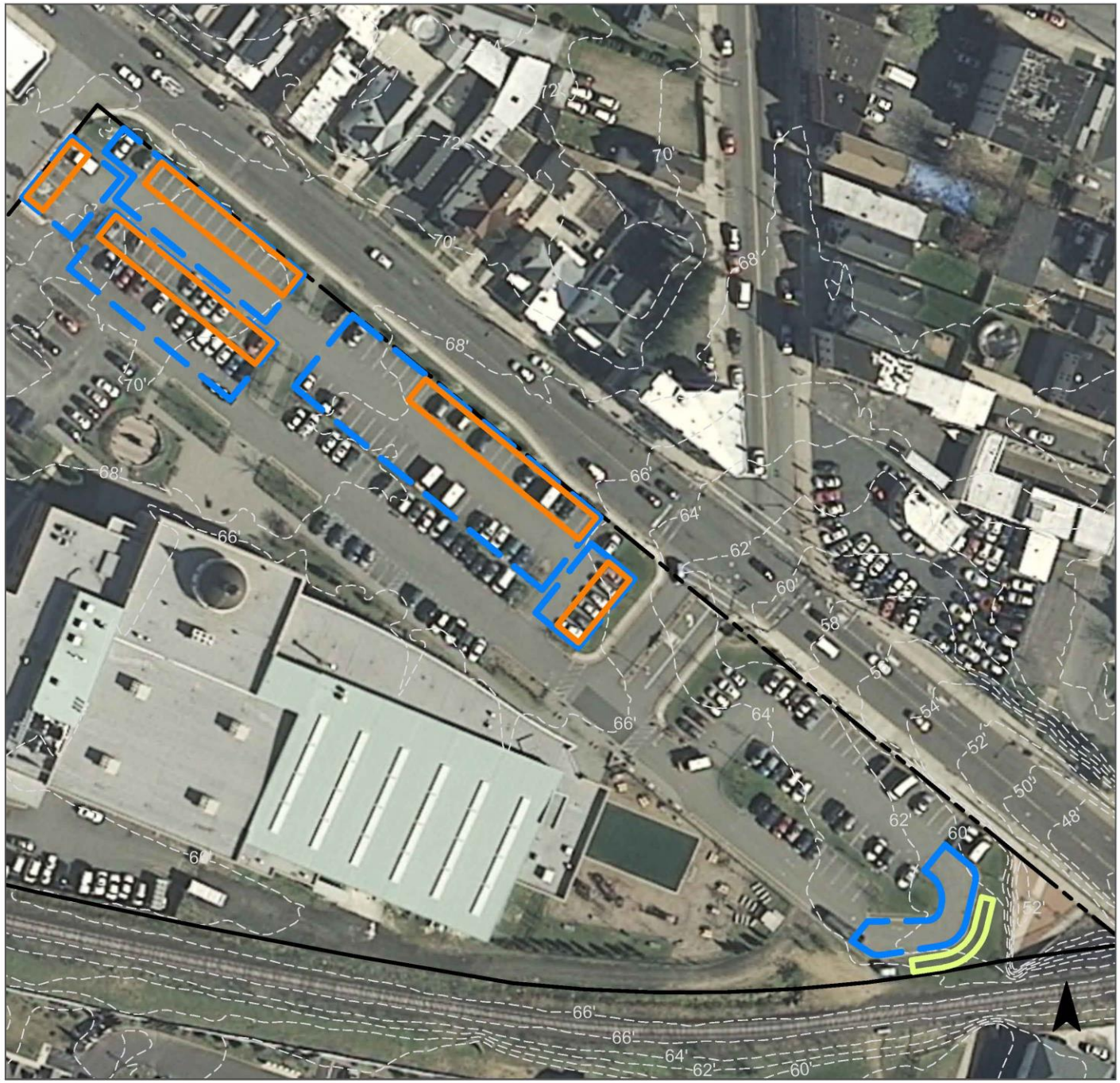
Block and Lot: Block 172, Lot 1.01

Parking spaces can be replaced with pervious pavement to capture and infiltrate stormwater while also reducing the amount of impervious cover. A rain garden can be built in the south section of the site to capture, treat, and infiltrate runoff flowing in that area via curb cuts. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
47	208,213	10.0	105.2	956.0	0.162	5.71

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.058	10	4,279	0.16	613	$3,065
Pervious pavements	0.793	133	58,172	2.19	9,047	$226,175

GREEN INFRASTRUCTURE RECOMMENDATIONS



YMCA and Perth Amboy Police Department

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

0 50' 100'

966 CONVERY BOULEVARD

Subwatershed: **Woodbridge Creek**

Site Area: **1,216,972 sq. ft.**

Address: **966 Convery Boulevard**
Perth Amboy, NJ 08861

Block and Lot: **Block 339, Lot 1**

Parking spaces can be replaced with porous asphalt to capture, and infiltrate stormwater runoff. A rain garden can also capture, treat, and infiltrate parking lot 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"
18	219,987	10.6	111.1	1,010.0	0.171	6.03

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 systems	0.359	60	26,322	0.99	1,792	$8,960
Pervious pavements	0.807	135	59,189	2.22	4,487	$112,175

GREEN INFRASTRUCTURE RECOMMENDATIONS

966 Convery Boulevard

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

0 40' 80'

1012 AMBOY AVENUE

Subwatershed: **Woodbridge Creek**

Site Area: **651,721 sq. ft.**

Address: **1012 Amboy Avenue**
Perth Amboy, NJ 08861

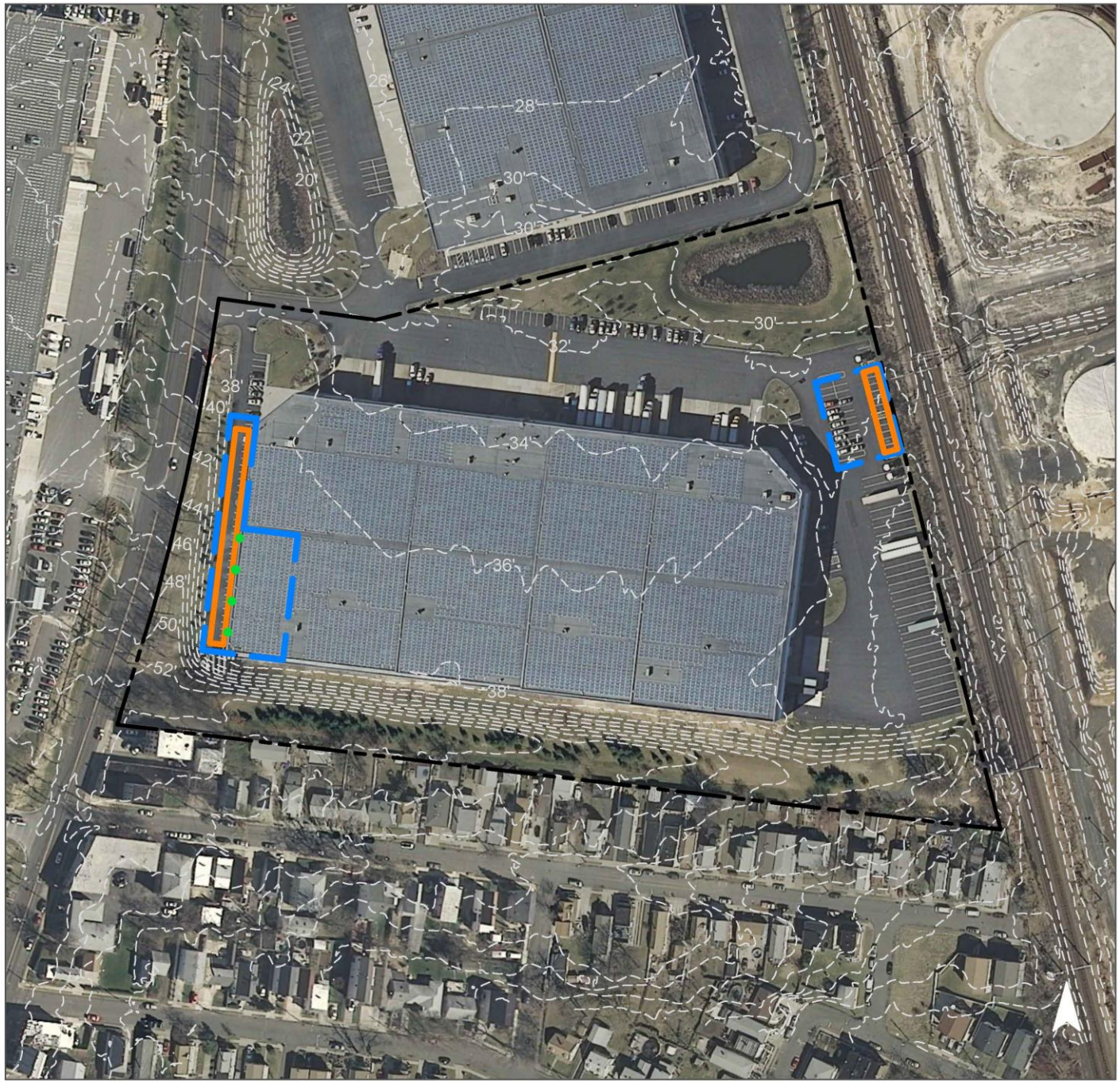
Block and Lot: **Block 468, Lot 1.03**

Parking spaces can be replaced with pervious pavement to capture and infiltrate stormwater while also reducing the amount of impervious cover. 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"
73	473,211	22.8	239.0	2,172.7	0.369	12.98

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
Pervious pavements	0.850	142	62,338	2.34	7,016	$175,400

GREEN INFRASTRUCTURE RECOMMENDATIONS



1012 Amboy Avenue

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

0 100' 200'

EDMUND HMIELESKI JR. EARLY CHILDHOOD CENTER

Subwatershed: Woodbridge Creek

Site Area: 240,687 sq. ft.

Address: 925 Amboy Avenue
Perth Amboy, NJ 08861

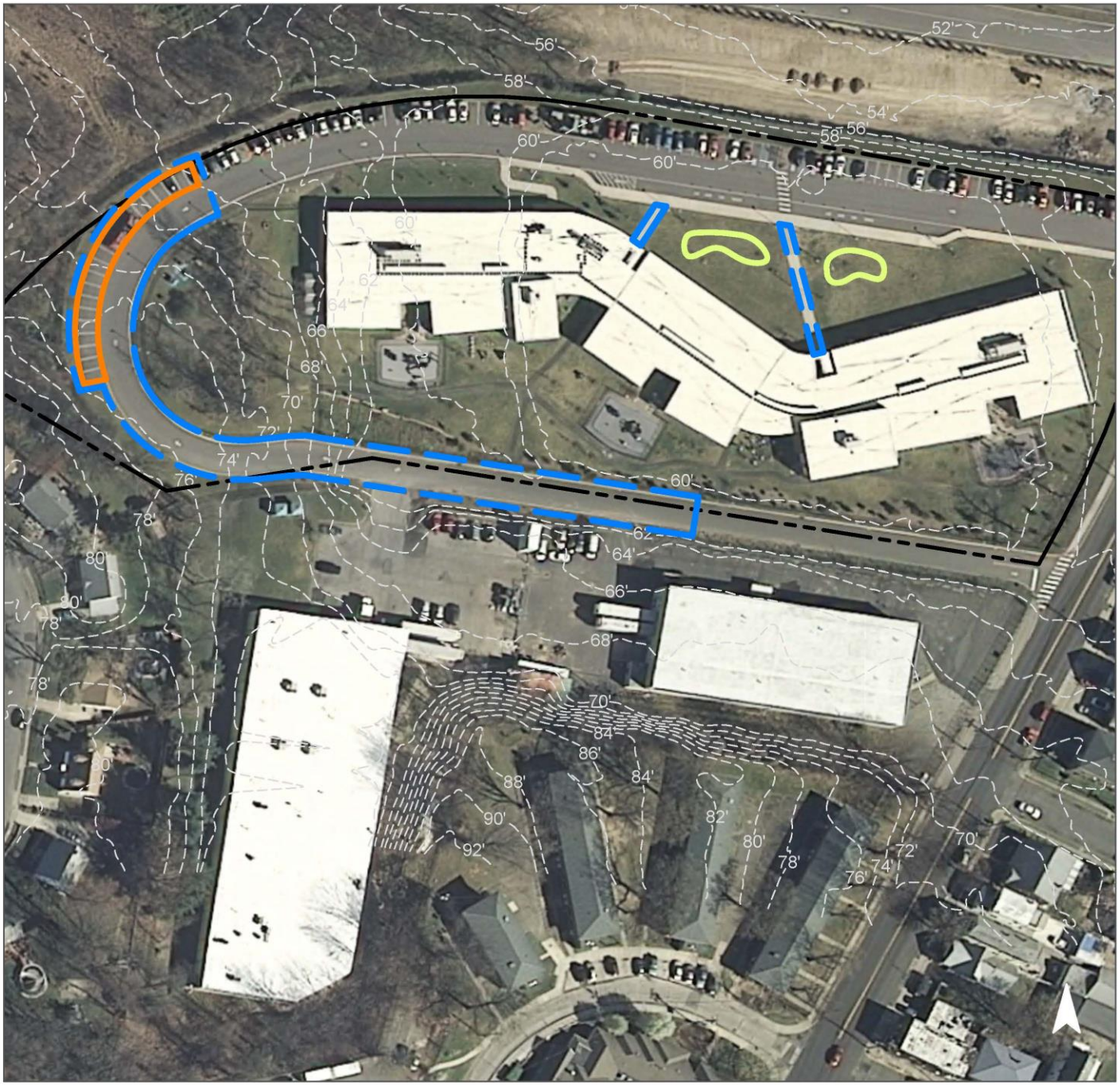
Block and Lot: Block 399, Lot 3.03

Demonstration rain gardens can be built around existing catch basins to capture, treat, and infiltrate runoff. Parking spaces on the west side of the site can also be replaced with porous asphalt to capture, and infiltrate stormwater runoff. A preliminary soil assessment suggests that 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"
64	153,358	7.4	77.5	704.1	0.119	4.21

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	0.029	5	2,124	0.08	1,862	$9,310
Pervious pavements	0.644	108	47,229	1.78	3,592	$89,800

GREEN INFRASTRUCTURE RECOMMENDATIONS



Edmund Hmieleski Jr. Early Childhood Center

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

0 60' 120'

JAMES J. FLYNN ELEMENTARY SCHOOL

Subwatershed: **Woodbridge Creek**

Site Area: **425,747 sq. ft.**

Address: **925 Amboy Avenue**
Perth Amboy, NJ 08861

Block and Lot: **Block 392.02, Lot 1**

Rain gardens can be installed in the northwest section of the site to capture, treat, and infiltrate runoff. A bioswale can also be installed to convey stormwater from the driveway to a rain garden, thereby removing pollutants and providing stormwater an opportunity to be infiltrated. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
55	234,371	11.3	118.4	1,076.1	0.183	6.43

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	0.235	39	17,219	0.65	2,509	$12,545
Bioswales	0.043	7	3,142	0.12	1,012	$5,060

GREEN INFRASTRUCTURE RECOMMENDATIONS

James J. Flynn Elementary School

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

0 100' 200'

d. Summary of Existing Conditions

Summary of Existing Site Conditions

Subwatershed/Site Name/Total Site Info/GI Practice	Area (ac)	Area (SF)	Block	Lot	Existing Annual Loads TP (lb/yr)	Existing Annual Loads TN (lb/yr)	Existing Annual Loads TSS (lb/yr)	I.C. %	I.C. Area (ac)	I.C. Area (SF)	Runoff Volumes from I.C. Water Quality Storm (1.25" over 2-hours) (Mgal)	Runoff Volumes from I.C. Annual (Mgal)
ARTHUR KILL SUBWATERSHED	**23.37**	**1,017,839**			**37.5**	**393.0**	**3,573.2**		**17.87**	**778,238**	**0.606**	**21.34**
Anthony V. Ceres School												
Total Site Info	2.56	111,348	228.02	2	5.1	53.2	483.4	95	2.42	105,276	0.082	2.89
Assumption Catholic School												
Total Site Info	1.82	79,150	327	1	3.1	32.0	290.7	80	1.45	63,320	0.049	1.74
Education Center												
Total Site Info	1.43	62,074	149	38	2.7	28.2	256.5	90	1.28	55,867	0.044	1.53
Ignacio Cruz Early Childhood Center												
Total Site Info	4.80	209,212	259	1.01	8.6	89.8	816.0	85	4.08	177,724	0.138	4.87
Perth Amboy High School												
Total Site Info	6.68	290,796	370	1.01	9.9	103.5	940.5	70	4.70	204,838	0.160	5.62
Perth Amboy Vocational School												
Total Site Info	6.09	265,259	244	2.01	8.3	86.5	786.1	65	3.93	171,213	0.133	4.70
LOWER RARITAN RIVER SUBWATERSHED	**37.46**	**1,631,972**			**50.7**	**530.6**	**4,824.1**		**24.12**	**1,050,679**	**0.819**	**28.82**
587 Fayette Street Plaza												
Total Site Info	0.89	38,841	97	15-26,28-30	1.4	14.7	133.4	75	0.67	29,059	0.023	0.80
Convery Plaza Shopping Center												
Total Site Info	8.69	378,506	96.04	1.01	16.4	171.7	1,561.4	90	7.81	340,063	0.265	9.33
Dr. Herbert N. Richardson 21st Century School												
Total Site Info	3.95	171,911	114	2.01	7.4	77.8	707.7	90	3.54	154,142	0.120	4.23
Public School No. 7												
Total Site Info	0.54	23,693	19	35	1.0	10.8	98.0	90	0.49	21,343	0.017	0.59
Raritan Bay Medical Center												
Total Site Info	0.75	32,828	198	1-9, 48-51	1.5	15.7	142.4	94	0.71	31,006	0.024	0.85

Summary of Existing Site Conditions

Subwatershed/Site Name/Total Site Info/GI Practice	Area (ac)	Area (SF)	Block	Lot	Existing Annual Loads			I.C. %	I.C. Area (ac)	I.C. Area (SF)	Runoff Volumes from I.C.	
					TP (lb/yr)	TN (lb/yr)	TSS (lb/yr)				Water Quality Storm (1.25" over 2-hours) (Mgal)	Annual (Mgal)
Robert N. Wilentz Elementary												
Total Site Info	4.15	180,965	9	1;2	7.4	77.6	705.6	85	3.53	153,675	0.120	4.21
Walgreens												
Total Site Info	1.20	52,174	197	1	2.4	25.0	227.3	95	1.14	49,495	0.039	1.36
Washington Park												
Total Site Info	7.10	309,374	191.01	1	3.1	32.2	292.4	21	1.46	63,682	0.050	1.75
YMCA and Perth Amboy Police Department												
Total Site Info	10.19	443,680	172	1.01	10.0	105.2	956.0	47	4.78	208,213	0.162	5.71
WOODBRIDGE CREEK SUBWATERSHED	**58.20**	**2,535,127**			**52.1**	**545.9**	**4,962.9**		**24.81**	**1,080,927**	**0.842**	**29.65**
966 Convery Boulevard												
Total Site Info	27.94	1,216,972	399	1	10.6	111.1	1,010.0	18	5.05	219,987	0.171	6.03
1012 Amboy Avenue												
Total Site Info	14.96	651,721	468	1.03	22.8	239.0	2,172.7	73	10.86	473,211	0.369	12.98
Edmund Hmieleski Jr. Early Childhood Center												
Total Site Info	5.53	240,687	399	3.03	7.4	77.5	704.1	64	3.52	153,358	0.119	4.21
James J. Flynn Elementary												
Total Site Info	9.77	425,747	392.02	1	11.3	118.4	1,076.1	55	5.38	234,371	0.183	6.43

e. Summary of Proposed Green Infrastructure Practices

Summary of Proposed Green Infrastructure Practices

	Subwatershed/Site Name/Total Site Info/GI Practice	Potential Management Area		Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Max Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cfs)	Size of BMP (SF)	Unit Cost ($)	Unit	Total Cost ($)	I.C. Treated %
		Area (SF)	Area (ac)									
	ARTHUR KILL SUBWATERSHED	**98,255**	**2.26**	**2.560**	**429**	**187,845**	**7.04**	**22,781**			**$675,310**	**12.6%**
1	**Anthony V. Ceres School**											
	Pervious pavements	5,057	0.12	0.132	22	9,672	0.36	1,600	25	SF	$40,000	4.8%
	Total Site Info	**5,057**	**0.12**	**0.132**	**22**	**9,672**	**0.36**	**1,600**			**$40,000**	**4.8%**
2	**Assumption Catholic School**											
	Bioretention systems/rain gardens	2,114	0.05	0.055	9	4,039	0.15	1,019	5	SF	$5,095	3.3%
	Pervious pavements	17,420	0.40	0.454	76	33,301	1.25	2,916	25	SF	$72,900	27.5%
	Total Site Info	**19,534**	**0.45**	**0.509**	**85**	**37,340**	**1.40**	**3,935**			**$77,995**	**30.8%**
3	**Education Center**											
	Pervious pavements	22,590	0.52	0.589	99	43,190	1.62	5,123	25	SF	$128,075	40.4%
	Stormwater planters	3,473	0.08	0.090	15	6,642	0.25	720	100	SF	$72,000	6.2%
	Total Site Info	**26,063**	**0.60**	**0.679**	**114**	**49,832**	**1.87**	**5,843**			**$200,075**	**46.7%**
4	**Ignacio Cruz Early Childhood Center**											
	Bioretention systems/rain gardens	8,701	0.20	0.227	38	16,636	0.63	5,437	5	SF	$27,185	4.9%
	Pervious pavements	7,432	0.17	0.194	32	14,212	0.53	1,692	25	SF	$42,300	4.2%
	Total Site Info	**16,133**	**0.37**	**0.420**	**70**	**30,848**	**1.16**	**7,129**			**$69,485**	**9.1%**
5	**Perth Amboy High School**											
	Bioretention systems/rain gardens	1,844	0.04	0.048	8	3,523	0.13	461	5	SF	$2,305	0.9%
	Stormwater planters	17,251	0.40	0.449	75	32,979	1.24	1,515	100	SF	$151,500	8.4%
	Total Site Info	**19,095**	**0.44**	**0.498**	**83**	**36,502**	**1.37**	**1,976**			**$153,805**	**9.3%**
6	**Perth Amboy Vocational School**											
	Pervious pavements	5,491	0.13	0.143	24	10,494	0.39	1,278	25	SF	$31,950	3.2%
	Stormwater planters	6,882	0.16	0.179	30	13,157	0.49	1,020	100	SF	$102,000	4.0%
	Total Site Info	**12,373**	**0.28**	**0.322**	**54**	**23,651**	**0.88**	**2,298**			**$133,950**	**7.2%**
	LOWER RARITAN RIVER SUBWATERSHED	**212,180**	**4.87**	**5.528**	**925**	**403,431**	**15.23**	**85,915**			**$2,207,075**	**20.2%**
7	**587 Fayette Street Plaza**											
	Pervious pavements	7,143	0.16	0.186	31	13,658	0.51	1,999	25	SF	$49,975	24.6%
	Total Site Info	**7,143**	**0.16**	**0.186**	**31**	**13,658**	**0.51**	**1,999**			**$49,975**	**24.6%**

Summary of Proposed Green Infrastructure Practices

	Subwatershed/Site Name/Total Site Info/GI Practice	Potential Management Area Area (SF)	Potential Management Area Area (ac)	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Max Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cfs)	Size of BMP (SF)	Unit Cost ($)	Unit	Total Cost ($)	I.C. Treated %
8	**Convery Plaza Shopping Center**											
	Pervious pavements	52,496	1.21	1.368	229	100,367	3.77	24,285	25	SF	$607,125	15.4%
	Total Site Info	**52,496**	**1.21**	**1.368**	**229**	**100,367**	**3.77**	**24,285**			**$607,125**	**15.4%**
9	**Dr. Herbert N. Richardson 21st Century School**											
	Bioretention systems/rain gardens	877	0.02	0.023	4	1,676	0.06	921	5	SF	$4,605	0.6%
	Pervious pavements	23,718	0.54	0.618	103	45,344	1.70	17,732	25	SF	$443,300	15.4%
	Total Site Info	**24,595**	**0.56**	**0.641**	**107**	**47,020**	**1.76**	**18,653**			**$447,905**	**16.0%**
10	**Public School No. 7**											
	Pervious pavements	9,939	0.23	0.259	43	18,999	0.71	6,391	25	SF	$159,775	46.6%
	Rainwater harvesting systems	2,206	0.05	0.057	10	2,000	0.16	2,000	2	gal	$4,000	10.3%
	Stormwater planters	8,019	0.18	0.209	35	15,334	0.58	720	100	SF	$72,000	37.6%
	Total Site Info	**20,164**	**0.46**	**0.525**	**88**	**36,333**	**1.45**	**9,111**			**$235,775**	**94.5%**
11	**Raritan Bay Medical Center**											
	Bioretention systems/rain gardens	1,103	0.03	0.029	5	2,109	0.08	276	5	SF	$1,380	3.6%
	Pervious pavements	4,090	0.09	0.107	18	7,817	0.29	916	25	SF	$22,900	13.2%
	Stormwater planters	630	0.01	0.016	3	1,204	0.05	324	100	SF	$32,400	2.0%
	Total Site Info	**5,823**	**0.13**	**0.152**	**25**	**11,130**	**0.42**	**1,516**			**$56,680**	**18.8%**
12	**Robert N. Wilentz Elementary**											
	Bioretention systems/rain gardens	10,252	0.24	0.267	45	19,598	0.74	1,927	5	SF	$9,635	6.7%
	Pervious pavements	18,252	0.42	0.476	80	34,894	1.31	3,735	25	SF	$93,375	11.9%
	Stormwater planters	7,254	0.17	0.189	32	13,868	0.52	1,500	100	SF	$150,000	4.7%
	Total Site Info	**35,758**	**0.82**	**0.932**	**156**	**68,360**	**2.57**	**7,162**			**$253,010**	**23.3%**
13	**Walgreens**											
	Pervious pavements	19,950	0.46	0.520	87	38,141	1.43	5,642	25	SF	$141,050	40.3%
	Total Site Info	**19,950**	**0.46**	**0.520**	**87**	**38,141**	**1.43**	**5,642**			**$141,050**	**40.3%**
14	**Washington Park**											
	Bioretention systems/rain gardens	725	0.02	0.019	3	1,384	0.05	543	5	SF	$2,715	1.1%
	Pervious pavements	12,860	0.30	0.335	56	24,587	0.92	7,344	25	SF	$183,600	20.2%
	Total Site Info	**13,585**	**0.31**	**0.354**	**59**	**25,971**	**0.97**	**7,887**			**$186,315**	**21.3%**

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 %
15	**YMCA and Perth Amboy Police Department**											
	Bioretention systems/rain gardens	2,239	0.05	0.058	10	4,279	0.16	613	5	SF	$3,065	1.1%
	Pervious pavements	30,427	0.70	0.793	133	58,172	2.19	9,047	25	SF	$226,175	14.6%
	Total Site Info	**32,666**	**0.75**	**0.851**	**142**	**62,451**	**2.35**	**9,660**			**$229,240**	**15.7%**
	WOODBRIDGE CREEK SUBWATERSHED	**113,801**	**2.61**	**2.965**	**496**	**217,563**	**8.18**	**22,270**			**$413,250**	**10.5%**
16	**966 Convery Boulevard**											
	Bioretention systems/rain gardens	13,768	0.32	0.359	60	26,322	0.99	1,792	5	SF	$8,960	6.3%
	Pervious pavements	30,958	0.71	0.807	135	59,189	2.22	4,487	25	SF	$112,175	14.1%
	Total Site Info	**44,726**	**1.03**	**1.165**	**195**	**85,511**	**3.21**	**6,279**			**$121,135**	**20.3%**
17	**1012 Amboy Avenue**											
	Pervious pavements	32,606	0.75	0.850	142	62,338	2.34	7,016	25	SF	$175,400	6.9%
	Total Site Info	**32,606**	**0.75**	**0.850**	**142**	**62,338**	**2.34**	**7,016**			**$175,400**	**6.9%**
18	**Edmund Hmieleski Jr. Early Childhood Center**											
	Bioretention systems/rain gardens	1,113	0.03	0.029	5	2,124	0.08	1,862	5	SF	$9,310	0.7%
	Pervious pavements	24,705	0.57	0.644	108	47,229	1.78	3,592	25	SF	$89,800	16.1%
	Total Site Info	**25,818**	**0.59**	**0.673**	**113**	**49,353**	**1.86**	**5,454**			**$99,110**	**16.8%**
19	**James J. Flynn Elementary**											
	Bioretention systems/rain gardens	9,008	0.21	0.235	39	17,219	0.65	2,509	5	SF	$12,545	3.8%
	Bioswales	1,643	0.04	0.043	7	3142	0.12	1,012	5	SF	$5,060	0.7%
	Total Site Info	**10,651**	**0.24**	**0.278**	**46**	**20,361**	**0.77**	**3,521**			**$17,605**	**4.5%**