RUTGERS
New Jersey Agricultural
Experiment Station

DRAFT

Impervious Cover Reduction Action Plan
for
Pilesgrove, Salem County, New Jersey

Prepared by
Rutgers Cooperative Extension Water Resources Program

March 22, 2015

Introduction

Located in Salem County in central New Jersey, Pilesgrove Township covers over 50 square miles. Pilesgrove Township is dominated by agricultural land uses (Figure 1). Only 12.7% of the municipality's land use is classified as urban (Figure 2). Of the urban land in Pilesgrove Township, rural residential is the dominant land use type (Figure 3). The New Jersey Department of Environmental Protection's (NJDEP) 2007 land use/land cover geographical information system (GIS) data layer categorizes Pilesgrove Township into many unique land use types, assigning a percent impervious cover for each delineated area. These impervious cover values were used to estimate the impervious coverage for Pilesgrove Township. Based upon the 2007 NJDEP land use/land cover data, approximately 1.7% of Pilesgrove Township has impervious cover. This level of impervious cover suggests that the streams in Pilesgrove Township are likely considered to be sensitive streams.[1]

Methodology

Pilesgrove Township contains portions of six watersheds (Figure 4). For this 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 conducted at each of these opportunity sites to determine if a viable option existed to reduce impervious cover or 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 were eliminated from consideration.

For each potential site, commercial land use specific aerial loading coefficients 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 TMDLs for impaired waterways of the state. The percentage of impervious cover for each site was extracted from the 2007 NJDEP land use/land

[1] Schueler, T. 1994. The Importance of Imperviousness. *Watershed Protection Techniques* 1(3): 100-111.

cover dataset. 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.

For each project site, drainage areas were determined for proposed 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. These runoff volumes were calculated for each individual 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 were determined based upon the square footage of the green infrastructure practice and real cost of green infrastructure practice implementation in New Jersey.

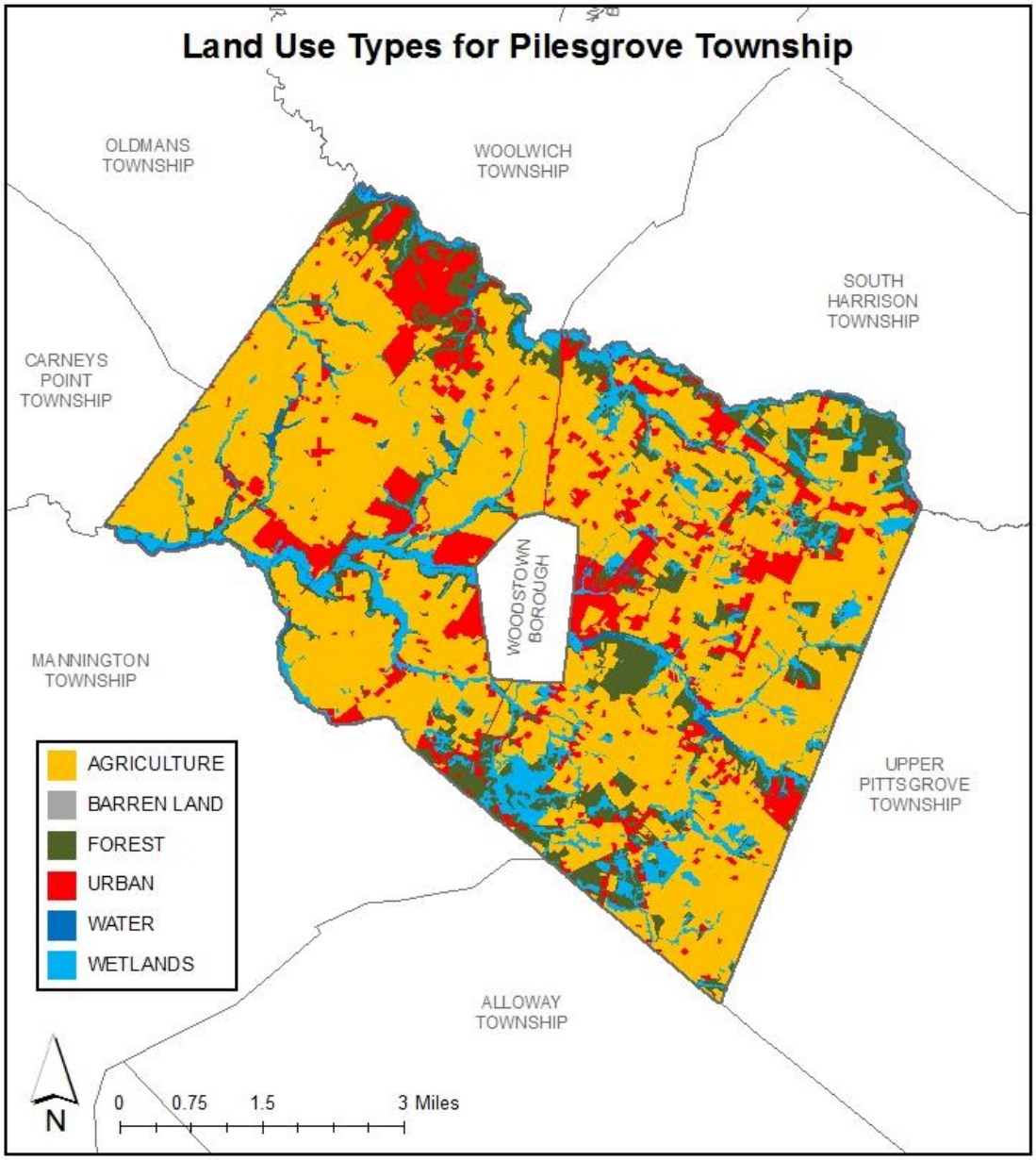


Figure 1: Map illustrating land use in Pilesgrove Township

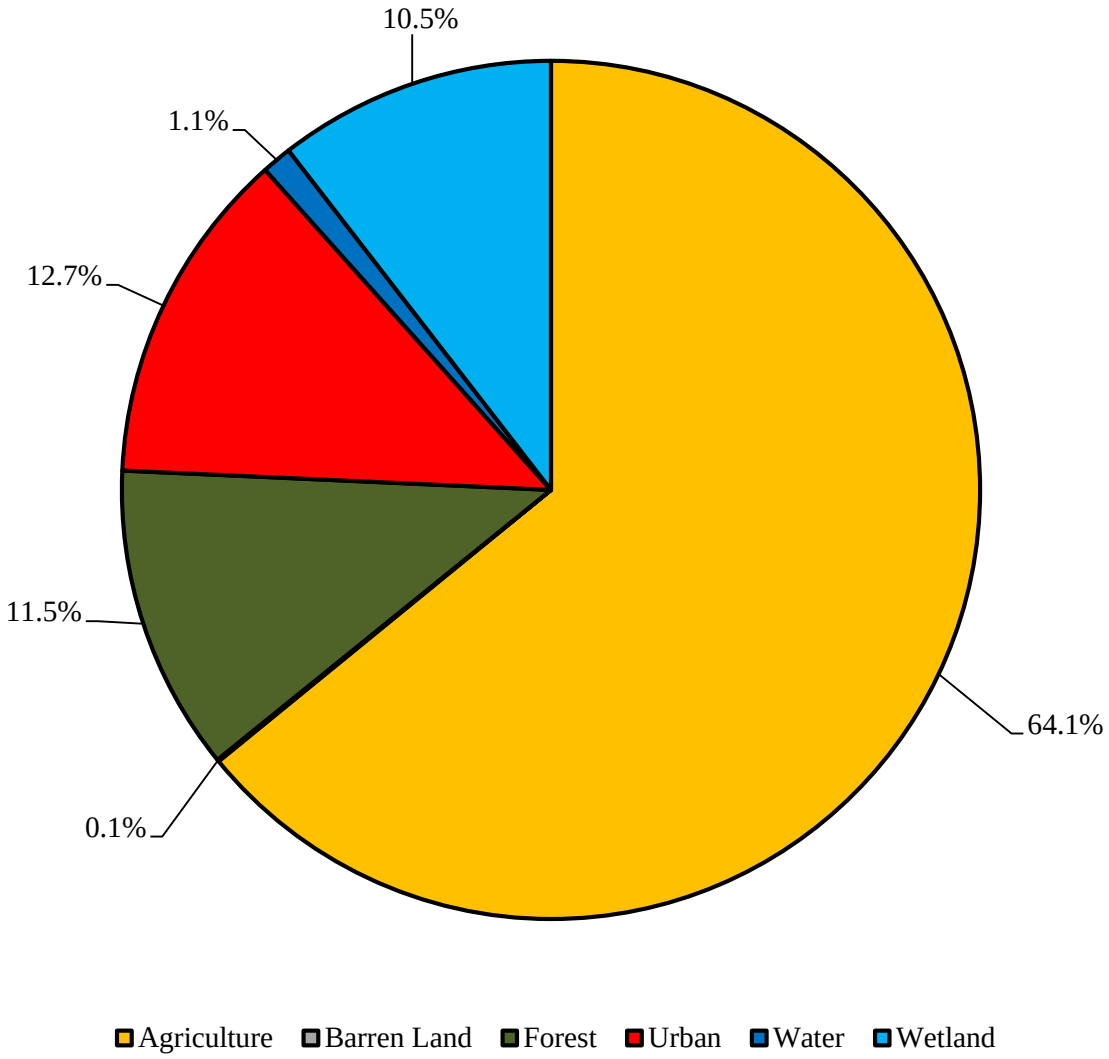


Figure 2: Pie chart illustrating land use in Pilesgrove Township

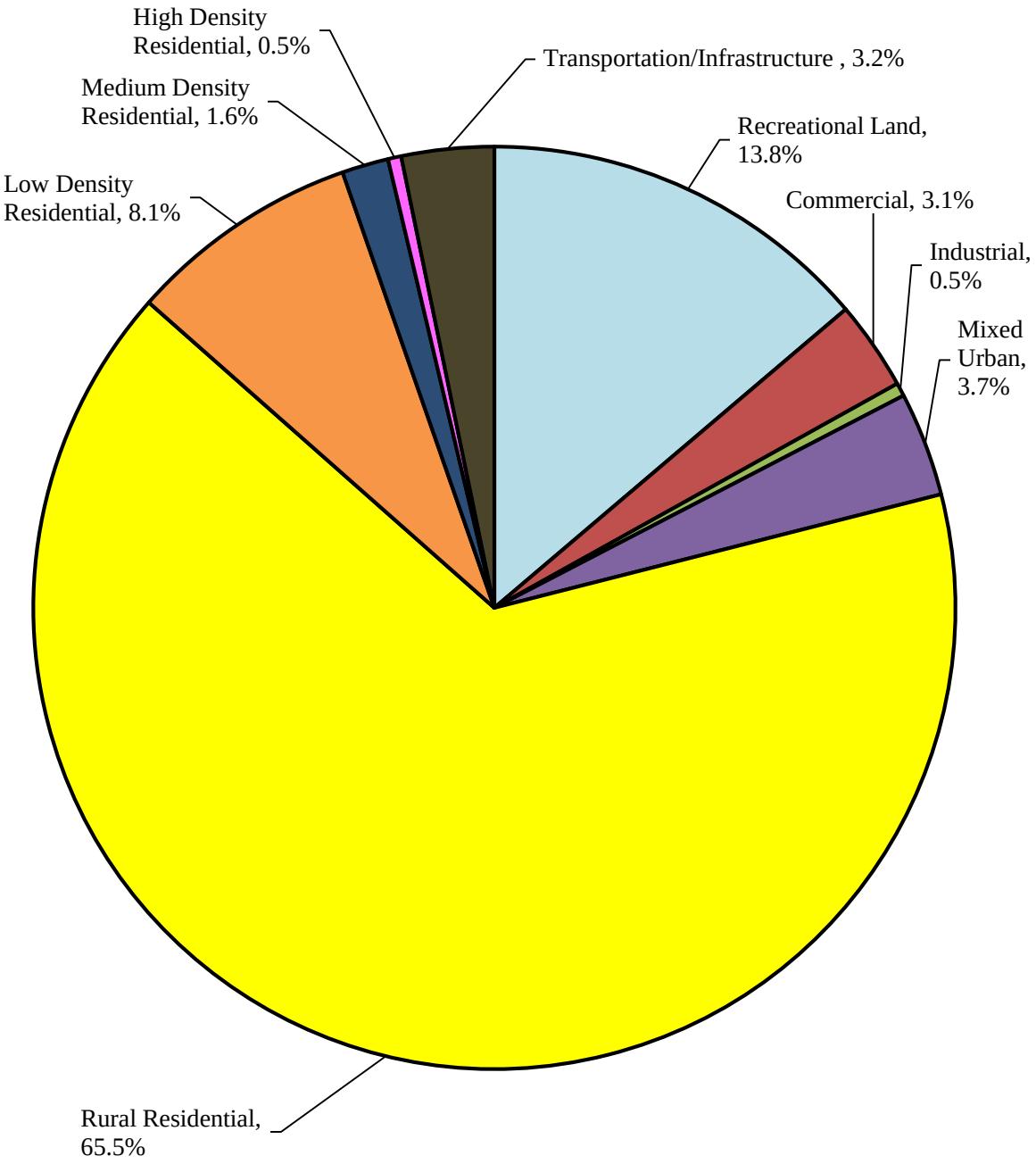


Figure 3: Pie chart illustrating the various types of urban land use in Pilesgrove Township

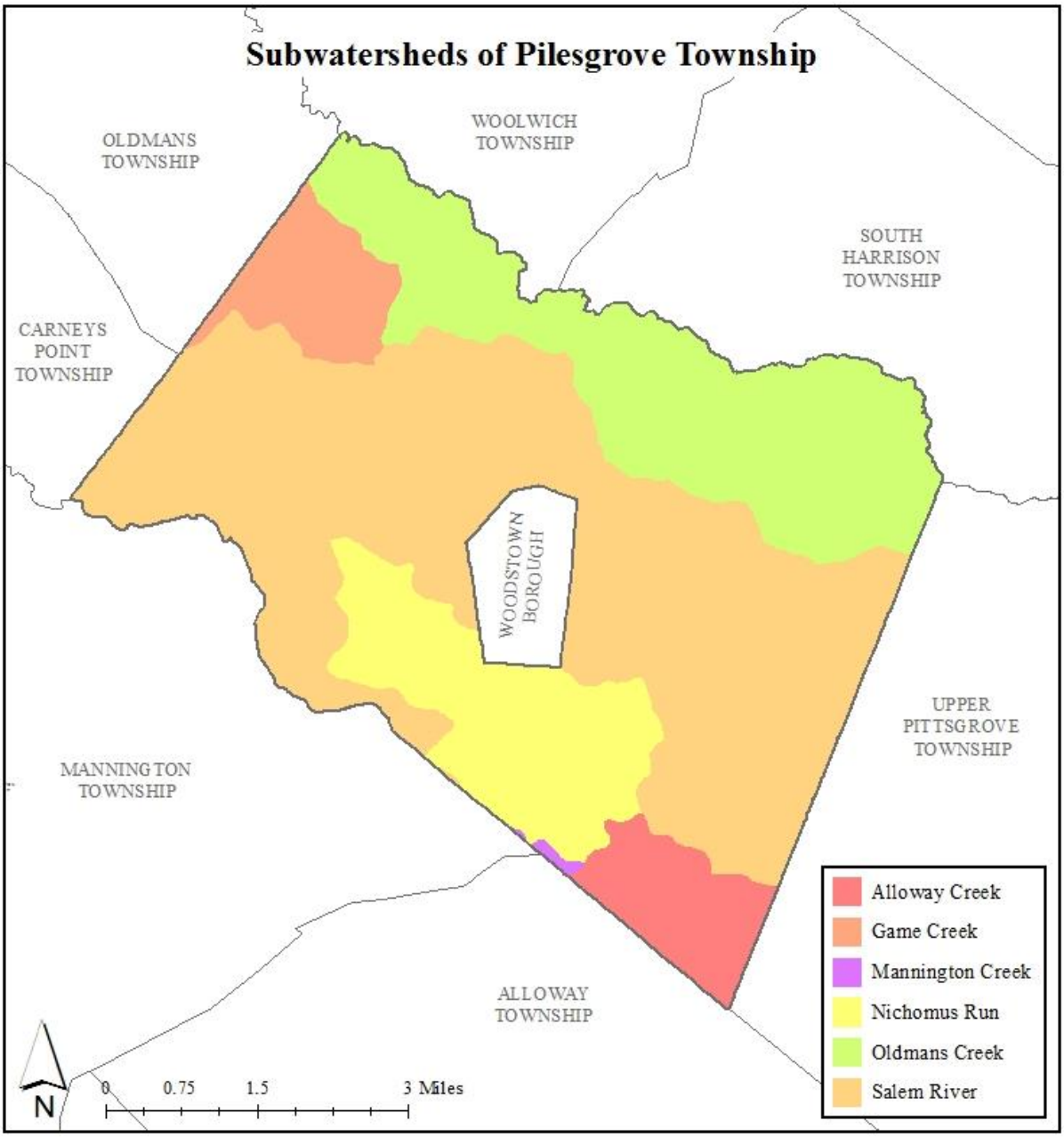


Figure 4: Map of the subwatersheds in Pilesgrove Township

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 technologies 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 (USEPA, 2013). A wide range of green infrastructure practices were evaluated for the potential project sites in Woodstown Borough. Each practice is discussed below.

Disconnected downspouts

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

Permeable pavements

There are several types of permeable pavements 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.




Bioretention systems, also known as 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

Wooden boxes with plants installed at the base of a downspout that provides an opportunity to beneficially reuse rooftop runoff are called downspout planter boxes.

Rainwater harvesting systems (cistern or rain barrel)

These systems capture rainwater, mainly off rooftops, in cisterns or rain barrels. The water can then be used to water gardens, wash 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 then discharge it to the local sewer system.

Potential Project Sites

Attachment 1 contains sites where green infrastructure projects could be installed. Each project identifies the recommend green infrastructure practices and the drainage area that the green infrastructure practice can treat. 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.

Table 1: Aerial Loading Coefficients

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
Barren Land/Transitional Area	0.5	5	60

Ref: NJDEP Stormwater Best Management Practice Manual, 2004.

Conclusion

This impervious cover reduction action plan is meant to provide the municipality with a blueprint for implementing green infrastructure strategies 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 schools, 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 report as a starting point. The municipality can quickly convert this impervious cover reduction action plan into a stormwater mitigation plan and incorporate into the municipal stormwater control ordinance.

Attachment 1: Potential Project Sites

	Watershed/Site Name/Total Site Info/GI Practice	Area (ac)	Area (SF)	Lot	Block	Land Use	Aerial Loading Rates TP (lb/ac/yr)	TN (lb/ac/yr)	TSS (lb/ac/yr)	Existing Annual Loads TP (lb/yr)	TN (lb/yr)	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) (cu.ft.)	Annual (cu.ft.)	Runoff Volumes from I.C. Water Quality Storm (1.25" over 2-hours) (Mgal)	Annual (Mgal)	Potential Management Area Area (SF)	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 %
	Salem River Watershed	**129.55**	**5,643,006**											**28.03**	**1,243,014**					**196,681**	**4.52**	**4.724**	**791**	**359,354**	**11.99**				**$477,338**	**15.8%**
1	Woodstown NJ State Police Station																													
	Total Site Info	2.77	120,550	11.01	24	Commercial	2.1	22	200	1.8	18.6	169.4	30.60	0.85	36,889	3,843	135,260	0.029	1.01	**12,730**	**0.29**	**0.332**	**56**	**24,310**	**0.81**	**2,423**			**$37,428**	**34.5%**
	Porous Pavement or Grass Pavers																			8,100	0.19	0.211	35	15,469	0.52	1,266	25	SF	$31,641	22.0%
	Bioretention Systems																			4,630	0.11	0.121	20	8,841	0.29	1,158	5	SF	$5,788	12.6%
2	Sunoco Gas Station																													
	Total Site Info	0.43	18,770	12	25	Commercial	2.1	22	200	0.7	7.6	68.9	80.00	0.34	15,016	1,564	55,059	0.012	0.41	**2,600**	**0.06**	**0.068**	**11**	**4,967**	**0.17**	**650**			**$3,250**	**17.3%**
	Bioretention Systems																			2,600	0.06	0.068	11	4,967	0.17	650	5	SF	$3,250	17.3%
3	Fulton Bank of New Jersey																													
	Total Site Info	2.53	110,387	11.01	25	Commercial	2.1	22	200	3.4	35.5	322.5	63.63	1.61	70,238	7,316	257,539	0.055	1.93	**14,466**	**0.33**	**0.377**	**63**	**27,623**	**0.92**	**2,449**			**$51,166**	**20.6%**
	Porous Pavement or Grass Pavers																			12,455	0.29	0.325	54	23,786	0.79	1,946	25	SF	$48,652	17.7%
	Bioretention Systems																			2,011	0.05	0.052	9	3,837	0.13	503	5	SF	$2,514	2.9%
4	Richmans Ice Cream																													
	Total Site Info	19.18	835,667	17	29	Commercial	2.1	22	200	8.1	85.1	773.8	20.17	3.87	168,533	17,556	617,954	0.131	4.62	---	---	---	---	---	---	---	---	---	---	---
5	The Church of Jesus Christ of Latter-day Saints																													
	Total Site Info	8.30	361,643	10.03	30	Commercial	2.1	22	200	3.9	41.2	374.9	22.58	1.87	81,664	8,507	299,435	0.064	2.24	**11,910**	**0.27**	**0.310**	**52**	**22,739**	**0.76**	**2,978**			**$14,888**	**14.6%**
	Bioretention Systems																			11,910	0.27	0.310	52	22,739	0.76	2,978	5	SF	$14,888	14.6%
6	Sharptown United Methodist Church																													
	Total Site Info	1.47	63,841	7	53	Commercial	2.1	22	200	2.3	23.9	217.4	74.18	1.09	47,360	4,933	173,653	0.037	1.30	**17,570**	**0.40**	**0.458**	**77**	**33,548**	**1.12**	**4,393**			**$21,963**	**37.1%**
	Bioretention Systems																			17,570	0.40	0.458	77	33,548	1.12	4,393	5	SF	$21,963	37.1%
7	Dollar General																													
	Total Site Info	1.00	43,628	1.04	63	Commercial	2.1	22	200	2.0	20.8	189.5	94.59	0.95	41,269	4,299	151,320	0.032	1.13	**2,960**	**0.07**	**0.077**	**13**	**5,655**	**0.19**	**463**			**$11,563**	**7.2%**
	Porous Pavement or Grass Pavers																			2,960	0.07	0.077	13	5,655	0.19	463	25	SF	$11,563	7.2%
8	The Corner																													
	Total Site Info	0.51	22,294	4	63	Commercial	2.1	22	200	0.9	9.9	90.0	87.88	0.45	19,592	2,041	71,837	0.015	0.54	**12,045**	**0.28**	**0.314**	**53**	**23,001**	**0.77**	**1,914**			**$46,134**	**61.5%**
	Porous Pavement or Grass Pavers																			11,700	0.27	0.305	51	658	0.75	1,828	25	SF	$45,703	59.7%
	Downspout Planter Boxes																			345	0.01	0.009	2	22,343	0.02	86	5	SF	$431	1.8%
9	Salem County Public Works																													
	Total Site Info	21.63	942,413	1	67	Commercial	2.1	22	200	9.2	96.3	875.6	20.24	4.38	190,705	19,865	699,252	0.149	5.23	**1,130**	**0.03**	**0.014**	**2**	**2,154**	**0.07**	**5,000**			**$10,000**	**0.6%**
	Rainwater harvesting system (cistern or rain barrel)																			1,130	0.03	0.014	2	2,154	0.07	5,000	2	SF	$10,000	0.6%
10	Now & Then Consignment and Antiques Mall																													
	Total Site Info	2.50	108,738	11	35	Commercial	2.1	22	200	4.2	43.6	396.1	79.34	1.98	86,271	8,987	316,327	0.067	2.37	**18,740**	**0.43**	**0.265**	**44**	**35,784**	**1.20**	**5,610**			**$13,050**	**21.7%**
	Rainwater harvesting system (cistern or rain barrel)																			16,300	0.37	0.201	34	31,124	1.04	5,000	2	SF	$10,000	18.9%
	Bioretention Systems																			2,440	0.06	0.064	11	4,660	0.16	610	5	SF	$3,050	2.8%
11	William Roper Early Childhood Learning Center																													
	Total Site Info	---	?	?	36	Commercial	2.1	22	200	---	---	---	---	---	22,009	2,293	80,700	0.017	0.60	---	---	---	---	---	---	---	---	---	---	---
12	Pilesgrove Municipal Building																													
	Total Site Info	4.47	194,917	12	38	Commercial	2.1	22	200	6.5	68.0	618.3	69.09	3.09	134,659	14,027	493,750	0.105	3.69	**20,150**	**0.46**	**0.381**	**64**	**22,268**	**0.74**	**7,413**			**$22,063**	**15.0%**
	Rainwater harvesting system (cistern or rain barrel)																			10,500	0.24	0.130	22	3,837	0.13	5,000	2	SF	$10,000	7.8%
	Bioretention Systems																			9,650	0.22	0.251	42	18,431	0.61	2,413	5	SF	$12,063	7.2%
13	Woodstown Mini Storage																													
	Total Site Info	3.27	142,440	18.03	39	Commercial	2.1	22	200	3.0	31.7	288.6	44.13	1.44	62,864	6,548	230,501	0.049	1.72	**2,900**	**0.07**	**0.076**	**13**	**5,535**	**0.18**	**453**			**$11,328**	**4.6%**
	Porous Pavement or Grass Pavers																			2,900	0.07	0.076	13	5,535	0.18	453	25	SF	$11,328	4.6%
14	Wood Lanes																													
	Total Site Info	2.72	118,567	12.05	40	Commercial	2.1	22	200	4.0	41.6	377.8	69.41	1.89	82,292	8,572	301,737	0.064	2.26	**33,680**	**0.77**	**0.878**	**147**	**64,313**	**2.15**	**5,670**			**$120,008**	**40.9%**
	Porous Pavement and Grass Pavers																			29,330	0.67	0.764	128	56,003	1.87	4,583	25	SF	$114,570	35.6%
	Bioretention Systems																			4,350	0.10	0.113	19	8,310	0.28	1,088	5	SF	$5,438	5.3%
15	Franklin Bank																													
	Total Site Info	2.74	119,518	12.06	40	Commercial	2.1	22	200	3.2	33.1	300.9	54.84	1.50	65,539	6,827	240,310	0.051	1.80	**15,790**	**0.36**	**0.411**	**69**	**30,152**	**1.01**	**3,012**			**$46,247**	**24.1%**
	Porous Pavement or Grass Pavers																			9,980	0.23	0.260	44	19,059	0.64	1,559	25	SF	$38,984	15.2%
	Bioretention Systems																			5,810	0.13	0.151	25	11,093	0.37	1,453	5	SF	$7,263	8.9%
16	Lighthouse Christian Center																													
	Total Site Info	2.89	125,820	2.03	80	Commercial	2.1	22	200	2.1	21.6	196.4	33.99	0.98	42,766	4,455	156,809	0.033	1.17	**10,720**	**0.25**	**0.279**	**47**	**20,473**	**0.68**	**2,457**			**$19,722**	**25.1%**
	Porous Pavement or Grass Pavers																			2,380	0.05	0.062	10	4,548	0.15	372	25	SF	$9,297	5.6%
	Bioretention Systems																			8,340	0.19	0.217	36	15,925	0.53	2,085	5	SF	$10,425	19.5%
17	Woodstown Veterinary Hospital																													
	Total Site Info	1.56	67,784	2.04	80	Commercial	2.1	22	200	1.3	13.2	119.6	38.43	0.60	26,047	2,713	95,506	0.020	0.71	**1,110**	**0.03**	**0.029**	**5**	**2,117**	**0.07**	**278**			**$1,388**	**4.3%**
	Bioretention Systems																			1,110	0.03	0.029	5	2,117	0.07	278	5	SF	$1,388	4.3%
18	Camp Crockett County Park																													
	Total Site Info	51.56	2,246,029	14	81	Commercial	2.1	22	200	2.4	24.9	226.4	2.20	1.13	49,301	5,136	180,770	0.038	1.35	**18,180**	**0.42**	**0.456**	**76**	**34,715**	**1.15**	**8,660**			**$47,142**	**36.9%**
	Rainwater harvesting system (cistern or rain barrel)																			1,280	0.03	0.016	3	2,446	0.08	5,000	2	SF	$10,000	2.6%
	Porous Pavement or Grass Pavers																			6,030	0.14	0.157	26	11,512	0.38	942	25	SF	$23,555	12.2%
	Bioretention Systems																			10,870	0.25	0.283	47	20,757	0.69	2,718	5	SF	$13,588	22.0%

	Watershed/Site Name/Total Site Info/GI Practice	Area (ac)	Area (SF)	Lot	Block	Land Use	Aerial Loading Rates TP (lb/ac/yr)	Aerial Loading Rates TN (lb/ac/yr)	Aerial Loading Rates TSS (lb/ac/yr)	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) (cu.ft.)	Runoff Volumes from I.C. Annual (cu.ft.)	Runoff Volumes from I.C. Water Quality Storm (1.25" over 2-hours) (Mgal)	Runoff Volumes from I.C. Annual (Mgal)	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 %
	Nichomus Run Watershed	**22.42**	**976,566**											**10.84**	**472,211**					**175,540**	**4.03**	**4.574**	**766**	**335,201**	**11.18**				**$666,047**	**37.2%**
1	Acme																													
	Total Site Info	6.81	296,686	5	64	Commercial	2.1	22	200	12.7	133.5	1213.4	89.08	6.07	264,274	27,529	969,005	0.206	7.25	**107,590**	**2.47**	**2.803**	**469**	**205,453**	**6.85**	**17,285**			**$406,833**	**40.7%**
	Porous Pavement or Grass Pavers																			102,530	2.35	2.671	447	195,789	6.53	16,020	25	SF	$400,508	38.8%
	Bioretention Systems																			5,060	0.12	0.132	22	9,664	0.32	1,265	5	SF	$6,325	1.9%
2	Rite Aid																													
	Total Site Info	2.10	91,552	5.02	64	Commercial	2.1	22	200	3.2	33.2	302.1	71.87	1.51	65,796	6,854	241,252	0.051	1.80	**29,970**	**0.69**	**0.781**	**131**	**57,229**	**1.91**	**4,683**			**$117,070**	**45.5%**
	Porous Pavement or Grass Pavers																			29,970	0.69	0.781	131	57,229	1.91	4,683	25	SF	$117,070	45.5%
3	Wendy's																													
	Total Site Info	1.41	61,425	5.04	64	Commercial	2.1	22	200	3.0	31.0	282.0	100.00	1.41	61,425	6,398	225,225	0.048	1.68	**22,610**	**0.52**	**0.589**	**99**	**43,175**	**1.44**	**3,533**			**$88,320**	**36.8%**
	Porous Pavement or Grass Pavers																			22,610	0.52	0.589	99	43,175	1.44	3,533	25	SF	$88,320	36.8%
4	Joe's Pizza / Donna's Hallmark Shop																													
	Total Site Info	2.01	87,689	5.05	64	Commercial	2.1	22	200	2.9	30.7	278.9	69.26	1.39	60,736	6,327	222,699	0.047	1.67	**13,030**	**0.30**	**0.340**	**57**	**24,878**	**0.83**	**2,036**			**$50,898**	**21.5%**
	Porous Pavement or Grass Pavers																			13,030	0.30	0.340	57	24,878	0.83	2,036	25	SF	$50,898	21.5%
5	Tri-County Veterinary Hospital																													
	Total Site Info	10.08	439,214	7.02	65	Commercial	2.1	22	200	1.0	10.1	91.7	4.55	0.46	19,980	2,081	73,260	0.016	0.55	**2,340**	**0.05**	**0.061**	**10**	**4,466**	**0.15**	**585**			**$2,925**	**11.7%**
	Bioretention Systems																			2,340	0.05	0.061	10	4,466	0.15	585	5	SF	$2,925	11.7%
	Oldmans Creek Watershed	**24.87**	**1,083,421**											**7.50**	**326,513**					**47,880**	**1.10**	**1.159**	**194**	**91,437**	**3.05**				**$168,995**	**14.7%**
1	Woodstown Preschool Academy																													
	Total Site Info	2.84	123,844	3.03	9	Commercial	2.1	22	200	1.0	10.5	95.3	16.75	0.48	20,748	2,161	76,076	0.016	0.57	**6,840**	**0.16**	**0.178**	**30**	**13,069**	**0.44**	**1,166**			**$23,956**	**33.0%**
	Porous Pavement or Grass Pavers																			5,800	0.13	0.151	25	11,079	0.37	906	25	SF	$22,656	28.0%
	Bioretention Systems																			1,040	0.02	0.027	5	1,990	0.07	260	5	SF	$1,300	5.0%
2	R E Pierson Construction Co. Inc.																													
	Total Site Info	22.03	959,577	11	3.01	Commercial	2.1	22	200	14.7	154.4	1403.9	31.86	7.02	305,765	31,851	1,121,138	0.238	8.39	**41,040**	**0.94**	**0.981**	**164**	**78,368**	**2.61**	**10,402**			**$145,039**	**13.4%**
	Rainwater harvesting system (cistern or rain barrel)																			6,470	0.15	0.080	13	12,357	0.41	5,000	2	SF	$10,000	2.1%
	Porous Pavement or Grass Pavers																			34,570	0.79	0.901	151	66,011	2.20	5,402	25	SF	$135,039	11.3%

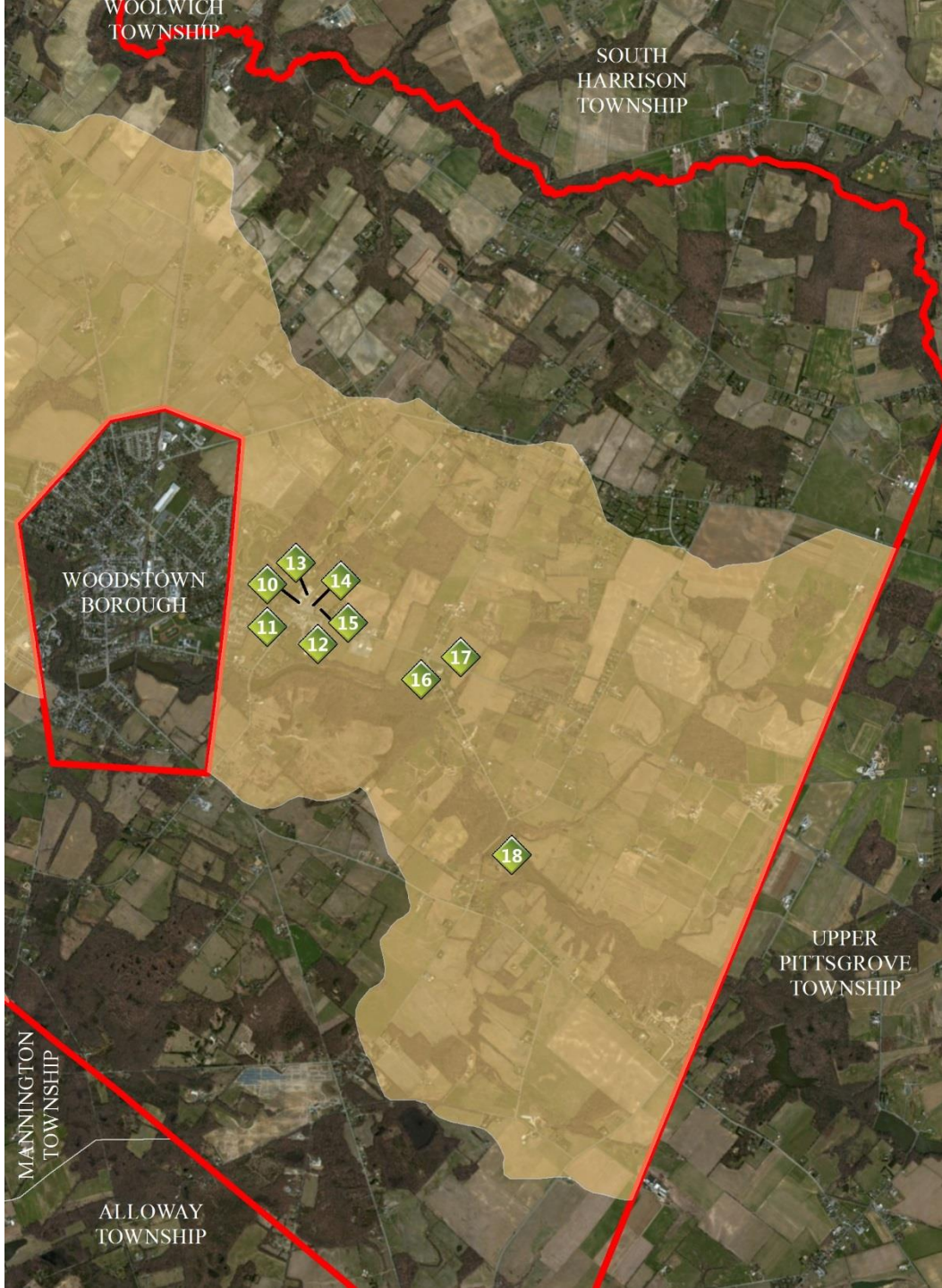
Salem River Watershed (West)

1. Woodstown NJ State Police Station
2. Sunoco Gas Station
3. Fulton Bank of New Jersey
4. Richmans Ice Cream
5. The Church of Jesus Christ of Latter-day Saints
6. Sharptown United Methodist Church
7. Dollar General
8. The Corner
9. Salem County Public Works

RUTGERS
New Jersey Agricultural Experiment Station

Salem River Watershed (East)

10. Now & Then Consignment and Antiques Mall
11. William Roper Early Childhood Learning Center
12. Pilesgrove Municipal Building
13. Woodstown Mini Storage
14. Wood Lanes
15. Franklin Bank
16. Lighthouse Christian Center
17. Woodstown Veterinary Hospital
18. Camp Crockett County Park



RUTGERS
New Jersey Agricultural Experiment Station

Woodstown NJ State Police Station

769 US 40 Pilesgrove, NJ 08098
Block 24, Lot 11.01
120,550 sq. ft.

Bioretention systems installed in grass would receive runoff from the roof and driveway via curb cuts. The rear parking lot could be retrofitted with porous pavement. A preliminary soil assessment for this site suggested that more soil testing would be required to determine the existing soil's suitability for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
31%	36,889	1.78	18.63	169.37	0.03	1.01

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.121	20	8,841	0.29
Porous pavement	0.211	35	15,469	0.52

Estimated cost is $5,788 for 1,158 sq. ft. of bioretention systems. Estimated cost is $31,641 for 1,266 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement.

RUTGERS
New Jersey Agricultural Experiment Station

Woodstown NJ State Police Station

769 US 40 Pilesgrove, NJ 08098
Block 24, Lot 11.01
120,550 sq. ft.

Sunoco Gas Station

25 Robinson Rd. Pilesgrove, NJ 08098
Block 25, Lot 12
18,770 sq. ft.

Stormwater runoff from the entire roof can be captured in a bioretention system. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
80%	15,016	0.72	7.58	68.94	0.01	0.41

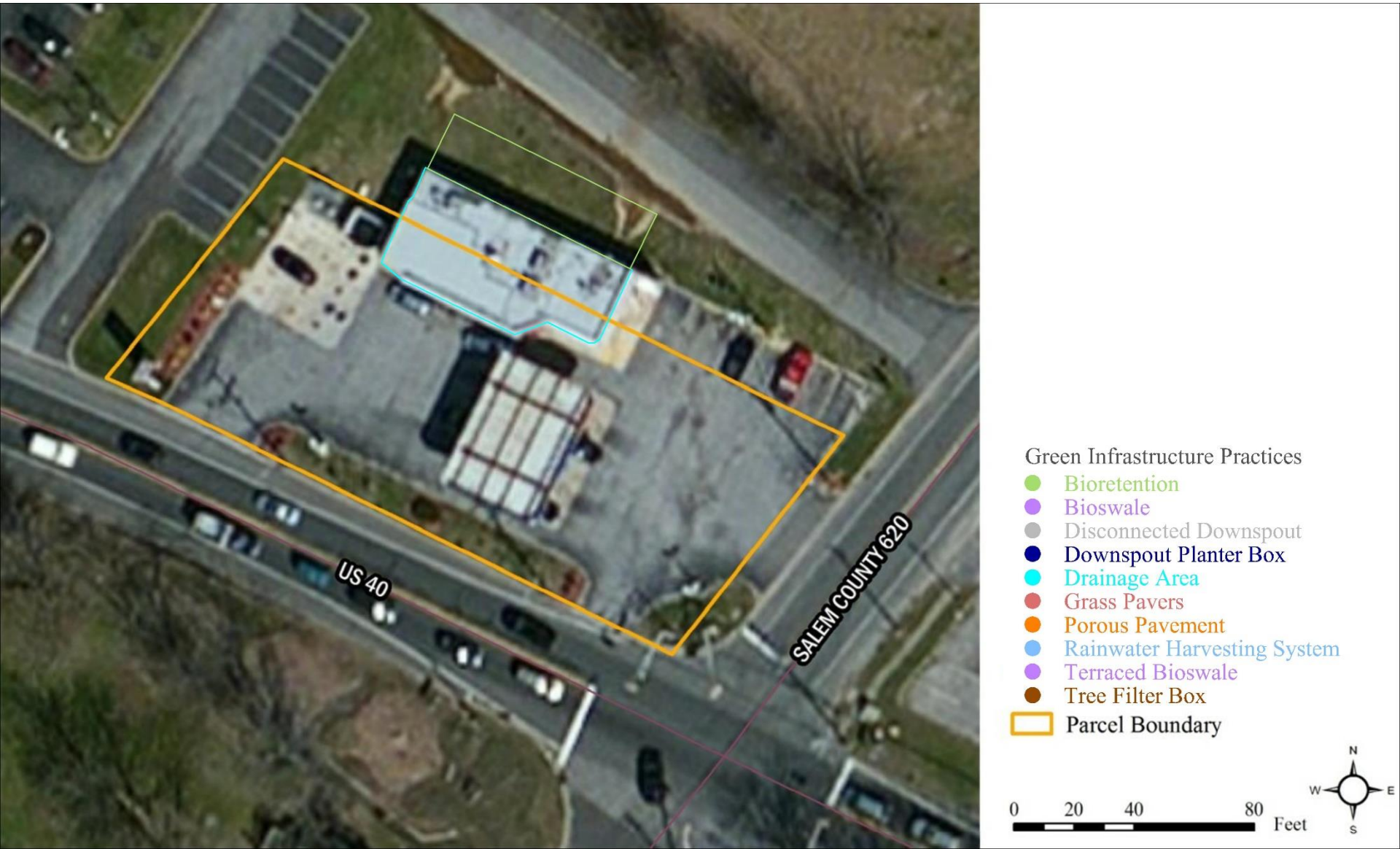
Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.068	11	4,967	0.17

Estimated cost is $3,250 for 650 sq. ft. of bioretention systems.

RUTGERS
New Jersey Agricultural Experiment Station

Sunoco Gas Station

25 Robinson Rd. Pilesgrove, NJ 08098
Block 25, Lot 12
18,770 sq. ft.



Fulton Bank of New Jersey

843 US 40 Pilesgrove, NJ 08098
Block 25, Lot 11.01
110,387 sq. ft.

Stormwater runoff from the sidewalk and parking lot can be discharged to porous pavement. A bioretention system can be installed to capture roof runoff. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
64%	70,238	3.39	35.47	322.49	0.06	1.93

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.052	9	3,837	0.13
Porous pavement	0.325	54	23,786	0.79

Estimated cost is $2,514 for 503 sq. ft. of bioretention systems. Estimated cost is $$48,652 for 1,946 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement.

RUTGERS
New Jersey Agricultural Experiment Station

Fulton Bank of New Jersey

843 US 40 Pilesgrove, NJ 08098
Block 25, Lot 11.01
110,387 sq. ft.

Richmans Ice Cream

1106-1126 Kings Hwy Pilesgrove, NJ 08098
Block 29, Lot 17
835,667 sq. ft.

This site is currently abandoned. When redeveloped, there is potential for implementation of green infrastructure practices. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

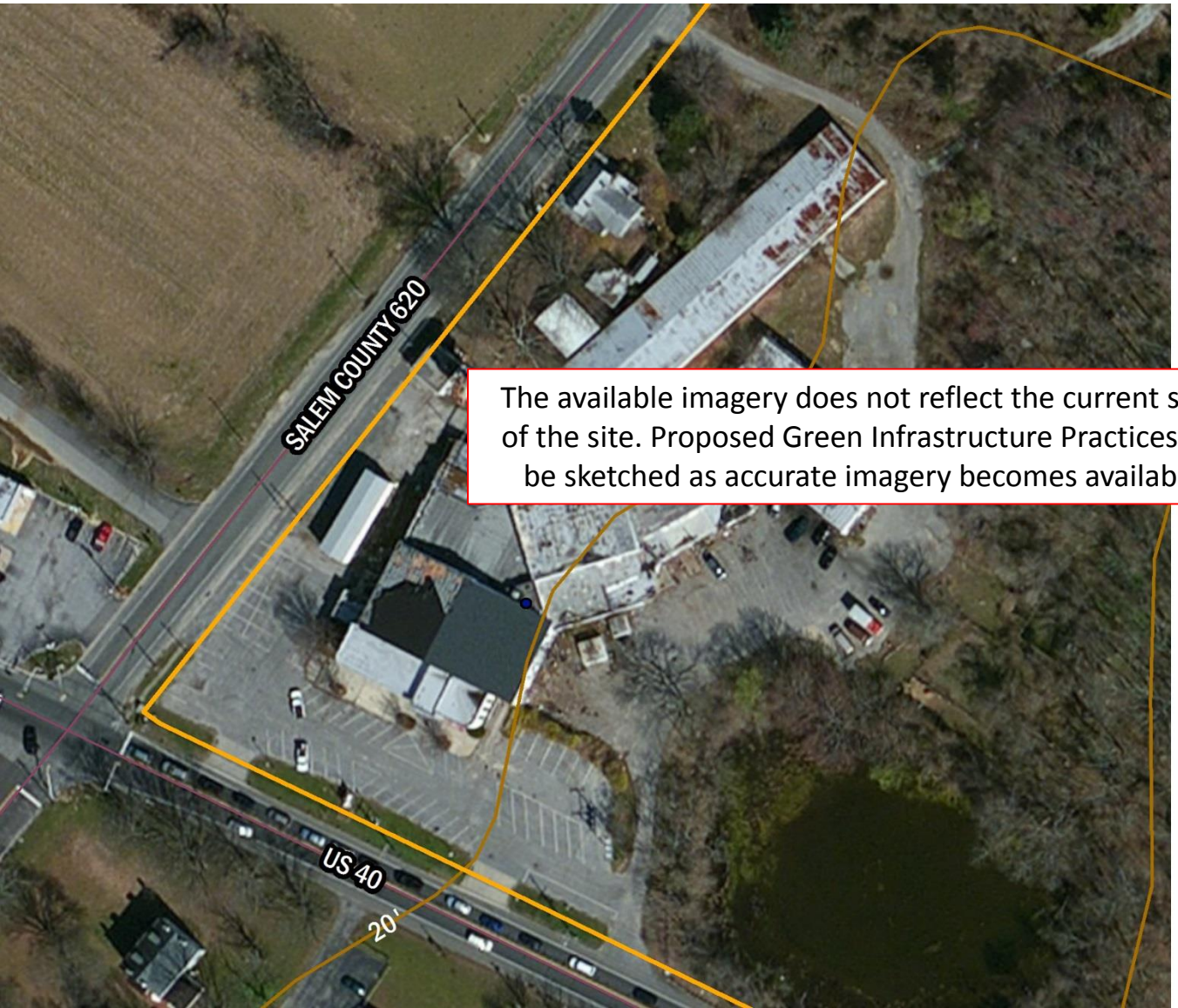
Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
20%	168,533	8.12	85.12	773.80	0.13	4.62

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)

RUTGERS
New Jersey Agricultural Experiment Station

Richmans Ice Cream

1106-1126 Kings Hwy Pilesgrove, NJ 08098
Block 29, Lot 17
835,667 sq. ft.



The Church of Jesus Christ of Latter-day Saints

1194 Kings Hwy Pilesgrove, NJ 08098
Block 30, Lot 10.03
361,643 sq. ft.

Stormwater runoff from the roof can be captured in bioretention systems. A bioretention system can be installed to intercept road runoff before it reaches the nearby river. A preliminary soil assessment for this site suggested that more soil testing would be required to determine the existing soil's suitability for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
23%	81,664	3.94	41.24	374.95	0.064	2.24

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.310	52	22,739	0.76

Estimated cost is $14,888 for 2,978 sq. ft. of bioretention systems.

RUTGERS
New Jersey Agricultural Experiment Station

The Church of Jesus Christ of Latter-day Saints

1194 Kings Hwy Pilesgrove, NJ 08098
Block 30, Lot 10.03
361,643 sq. ft.

Green Infrastructure Practices
- Bioretention
- Bioswale
- Disconnected Downspout
- Downspout Planter Box
- Drainage Area
- Grass Pavers
- Porous Pavement
- Rainwater Harvesting System
- Terraced Bioswale
- Tree Filter Box
- Parcel Boundary

N
W E
S

0 70 140 280 Feet

Sharptown United Methodist Church

24 Church St. Pilesgrove, NJ 08098
Block 53, Lot 7
63,841 sq. ft.

Much of the parking lot and rooftops can be discharged to bioretention systems and/or porous pavement. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
74%	47,360	2.28	23.92	217.45	0.04	1.30

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.458	77	33,548	1.12

Estimated cost is $21,963 for 4,393 sq. ft. of bioretention systems.

RUTGERS
New Jersey Agricultural Experiment Station

Sharptown United Methodist Church

24 Church St. Pilesgrove, NJ 08098
Block 53, Lot 7
63,841 sq. ft.

Dollar General

1016 US 40 Pilesgrove, NJ 08098
Block 63, Lot 1.04
43,628 sq. ft.

Stormwater runoff from the roof can be discharged to a section of porous pavement with a two-foot stone reservoir under the pavement.. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
95%	41,269	2	20.84	189.48	0.03	1.13

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Porous pavement	0.077	13	5,655	0.19

Estimated cost is $11,563 for 463 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement.

RUTGERS
New Jersey Agricultural Experiment Station

Dollar General

1016 US 40 Pilesgrove, NJ 08098
Block 63, Lot 1.04
43,628 sq. ft.

The Corner

1002 US 40 Pilesgrove, NJ 08098
Block 63, Lot 4
22,294 sq. ft.

Much of the parking lot can be replaced with porous pavement. Downspout planter boxes can be implemented to capture runoff from multiple rooftops. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
88%	19,592	0.94	9.89	89.95	0.02	0.54

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Downspout planter boxes	0.009	2	658	0.02
Porous pavement	0.305	51	22,343	0.75

Estimated cost is $431 for 86 sq. ft. of downspout planter boxes. Estimated cost is $45,703 for 1,828 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement.

RUTGERS
New Jersey Agricultural Experiment Station

The Corner

1002 US 40 Pilesgrove, NJ 08098
Block 63, Lot 4
22,294 sq. ft.

Salem County Public Works

153 Cemetery Rd. Woodstown, NJ 08098
Block 67, Lot 1
942,413 sq. ft.

The downspout can be disconnected and routed to a rainwater harvesting system for washing trucks. A preliminary soil assessment for this site suggested that more soil testing would be required to determine the existing soil's suitability for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
20%	190,705	9.19	96.32	875.6	0.15	5.23

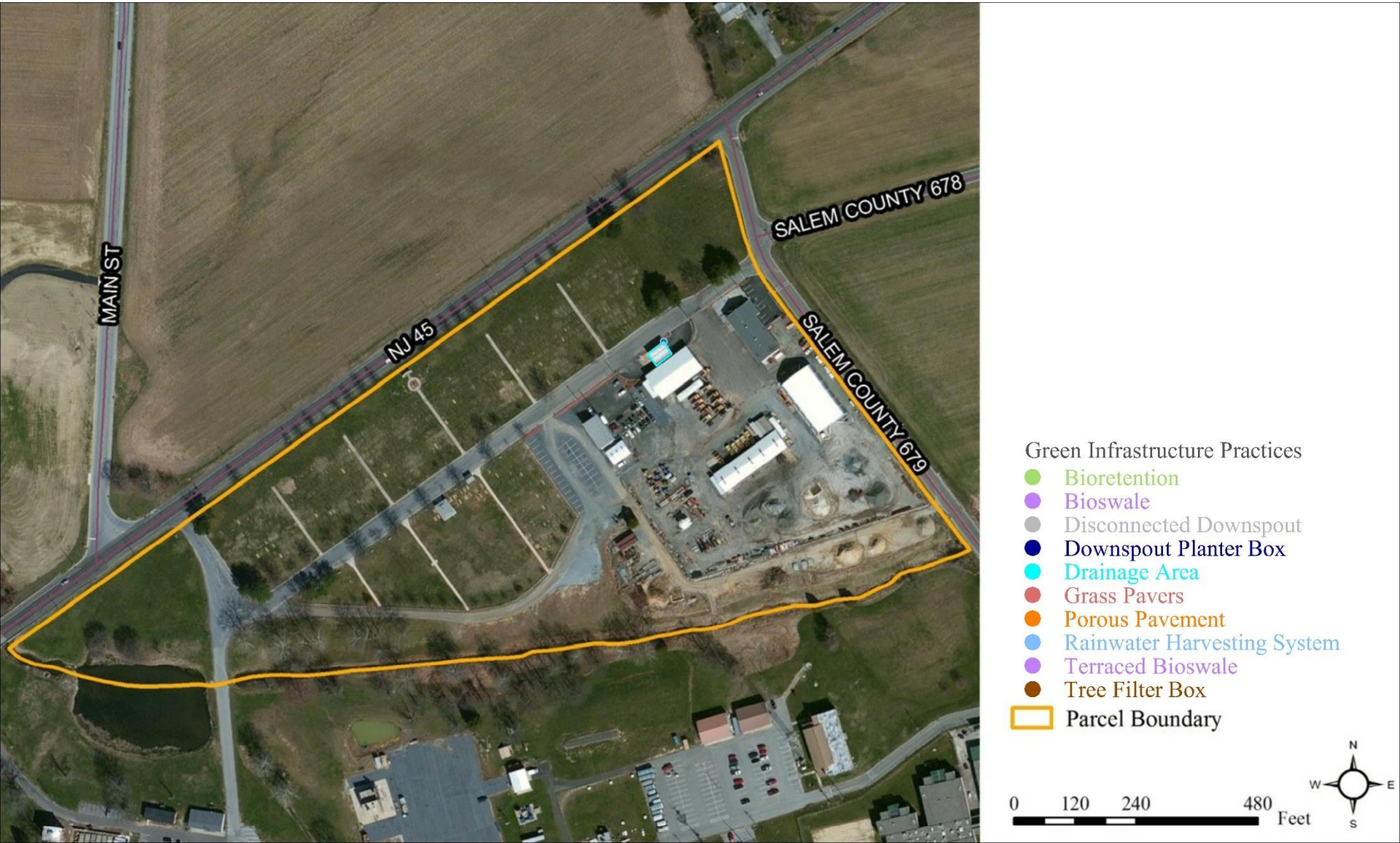
Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Rainwater harvesting systems	0.000	2	2,154	0.07

Estimated cost is $10,000 for rainwater harvesting systems.

RUTGERS
New Jersey Agricultural Experiment Station

Salem County Public Works

153 Cemetery Rd. Woodstown, NJ 08098
Block 67, Lot 1
942,413 sq. ft.



Now & Then Consignment and Antique Mall / Self-Service Carwash

1167 US 40 Pilesgrove, NJ 08098
Block 35, Lot 11
108,738 sq. ft.

The entire roof of the building could be routed to a rainwater harvesting system. Bioretention islands could intercept runoff from the front driveway. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
79%	86,271	4.16	43.57	396.10	0.07	2.37

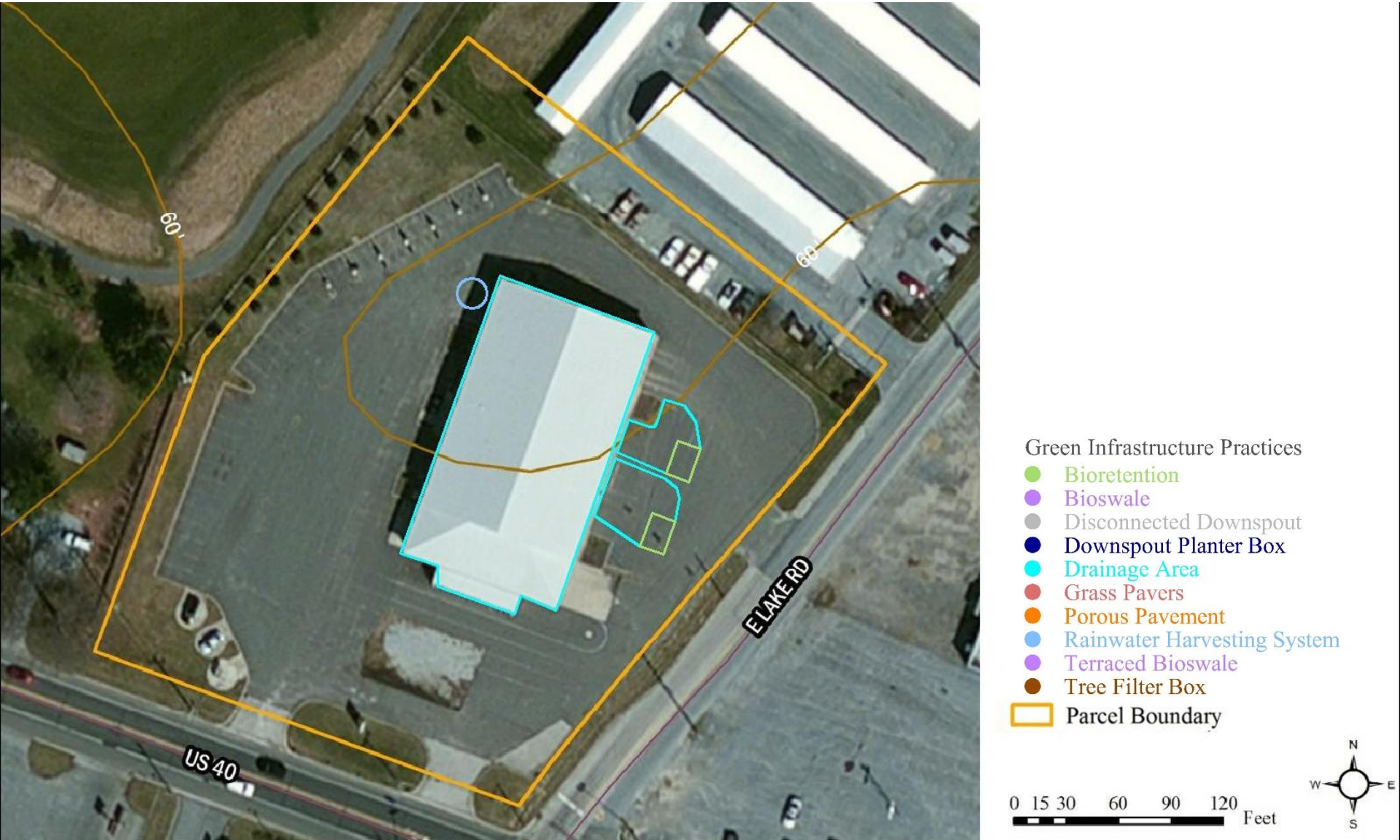
Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.064	11	4,660	0.16
Rainwater harvesting systems	0.000	36	31,124	1.04

Estimated cost is $3,050 for 610 sq. ft. of bioretention systems. Estimated cost is $10,000 for rainwater harvesting systems.

RUTGERS
New Jersey Agricultural Experiment Station

Now & Then Consignment and Antique Mall / Self-Service Carwash

1167 US 40 Pilesgrove, NJ 08098
Block 35, Lot 11
108,738 sq. ft.



William Roper Early Childhood Learning Center

211 East Lake Ave. Pilesgrove, NJ 08098
Block 36, Lot ?
? sq. ft.

Stormwater runoff from the rooftops and parking lots can be diverted to bioretention systems and porous pavement. A preliminary soil assessment for this site suggested that more soil testing would be required to determine the existing soil's suitability for green infrastructure.

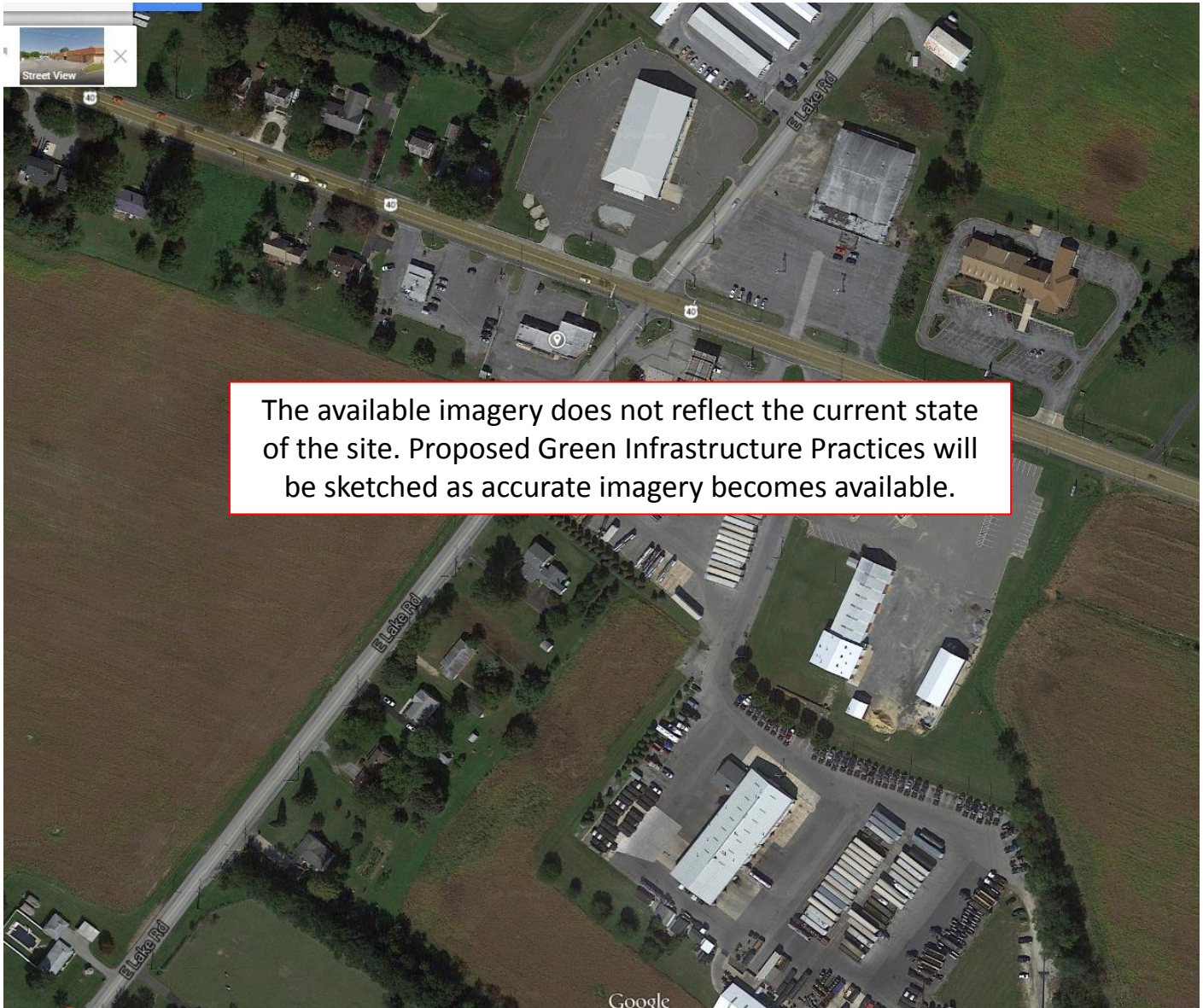
Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems				
Porous pavement				

RUTGERS
New Jersey Agricultural Experiment Station

William Roper Early Childhood Learning Center

211 East Lake Ave. Pilesgrove, NJ 08098
Block 36, Lot ?
? sq. ft.



The available imagery does not reflect the current state of the site. Proposed Green Infrastructure Practices will be sketched as accurate imagery becomes available.

Pilesgrove Municipal Building

1180 US 40 Pilesgrove, NJ 08098
Block 38, Lot 12
194,917 sq. ft.

Runoff from the parking lots could be collected in bioretention systems. Rainwater harvesting systems could collect the runoff from building rooftops. A preliminary soil assessment for this site suggested that more soil testing would be required to determine the existing soil's suitability for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
69%	134,659	6.49	68.01	618.27	0.10	3.69

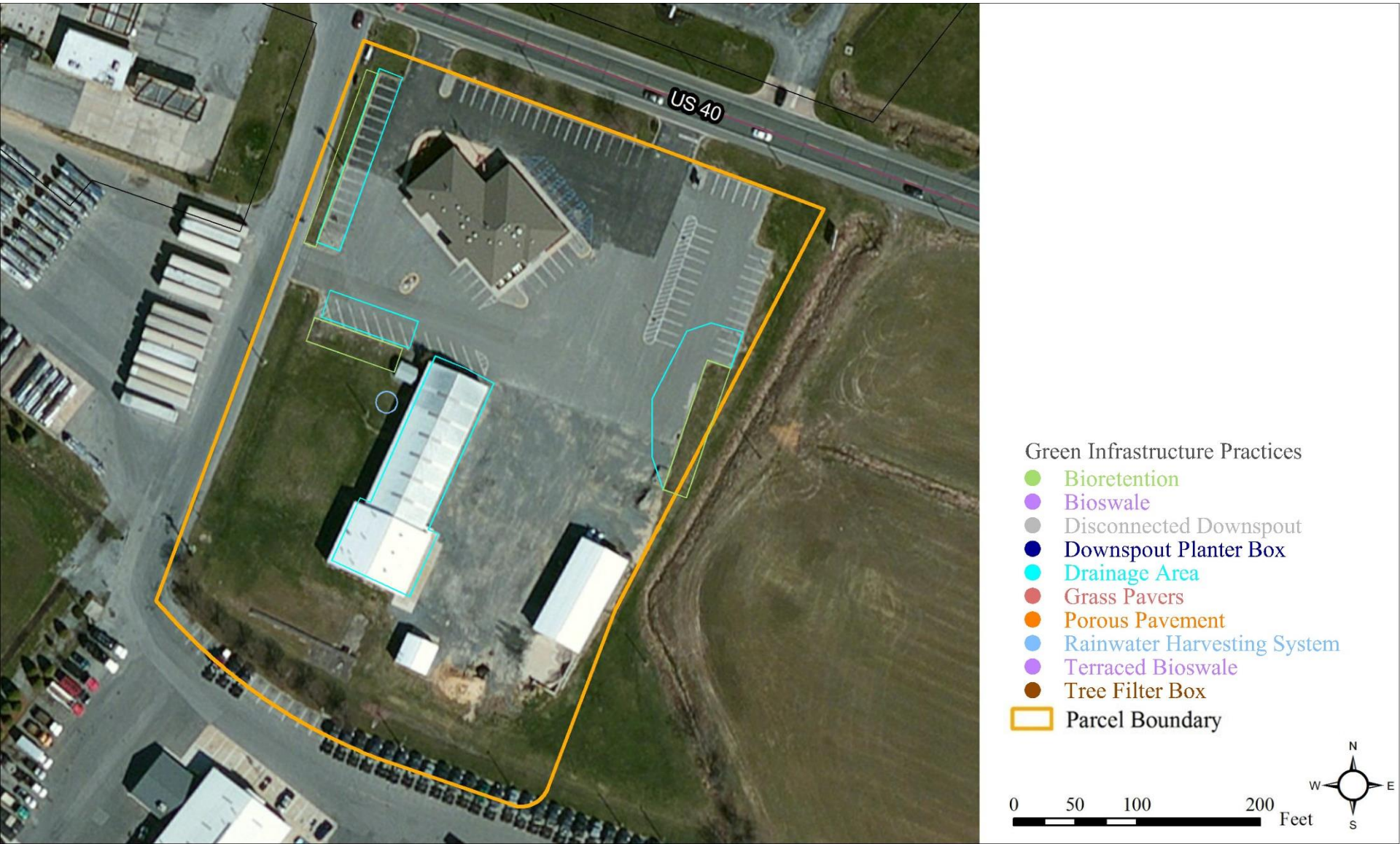
Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.251	42	18,431	0.61
Rainwater harvesting systems	0.000	23	3,837	0.13

Estimated cost is $12,063 for 2,413 sq. ft. of bioretention systems. Estimated cost is $10,000 for rainwater harvesting systems.

RUTGERS
New Jersey Agricultural Experiment Station

Pilesgrove Municipal Building

1180 US 40 Pilesgrove, NJ 08098
Block 38, Lot 12
194,917 sq. ft.



Woodstown Mini Storage

231 East Lake Rd. Woodstown, NJ 08098
Block 39, Lot 18.03
142,440 sq. ft.

Portions of the paved driveway throughout this site could be repaved with porous pavement to enhance stormwater infiltration. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
44%	62,864	4.16	43.57	396.1	0.07	2.37

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Porous pavement	0.076	13	5,535	0.18

Estimated cost is $11,328 for 453 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement.

RUTGERS
New Jersey Agricultural Experiment Station

Woodstown Mini Storage

231 East Lake Rd. Woodstown, NJ 08098
Block 39, Lot 18.03
142,440 sq. ft.

Wood Lanes

1173 US 40 Pilesgrove, NJ 08098
Block 40, Lot 12.05
118,567 sq. ft.

Grass pavers could be installed along the western edge of the building to treat its runoff. The parking lot could be retrofitted with bioretention islands and porous pavement. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
69%	82,292	3.97	41.56	377.83	0.06	2.26

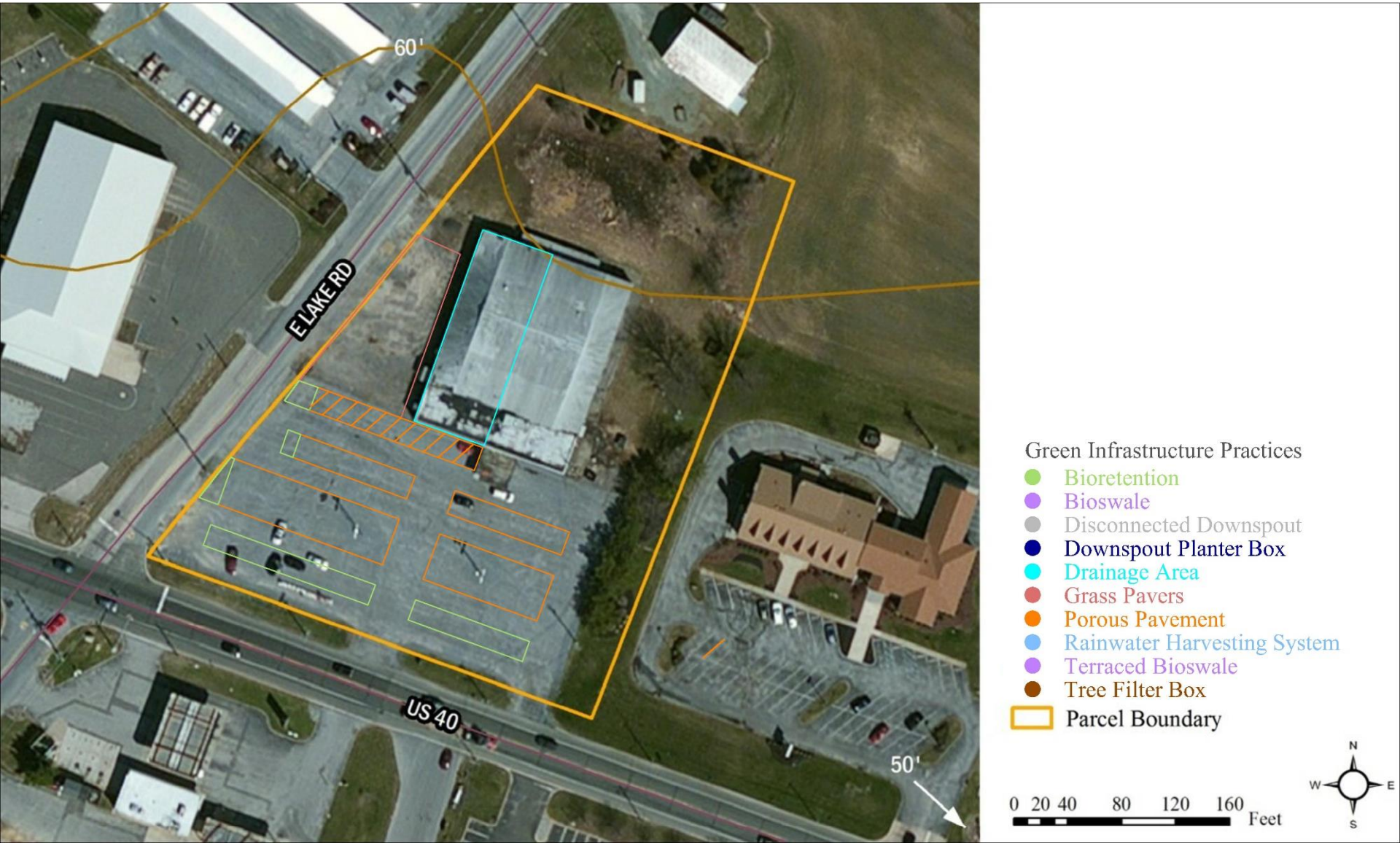
Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.113	19	8,310	0.28
Grass pavers	0.412	69	30,227	1.01
Porous pavement	0.352	59	25,776	0.86

Estimated cost is $5,438 for 1,088 sq. ft. of bioretention systems. Estimate cost is $114,570 for 4,583 sq. ft. of grass pavers and porous pavement with a two-foot stone reservoir under the pavement.

RUTGERS
New Jersey Agricultural Experiment Station

Wood Lanes

1173 US 40 Pilesgrove, NJ 08098
Block 40, Lot 12.05
118,567 sq. ft.



Franklin Bank

1179 US 40 Pilesgrove, NJ 08098
Block 40, Lot 12.06
119,518 sq. ft.

All of the parking spaces could be repaved with porous pavement. The building and portions of the paved lot could be routed to bioretention systems. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
55%	65,539	3.16	33.10	300.92	0.05	1.80

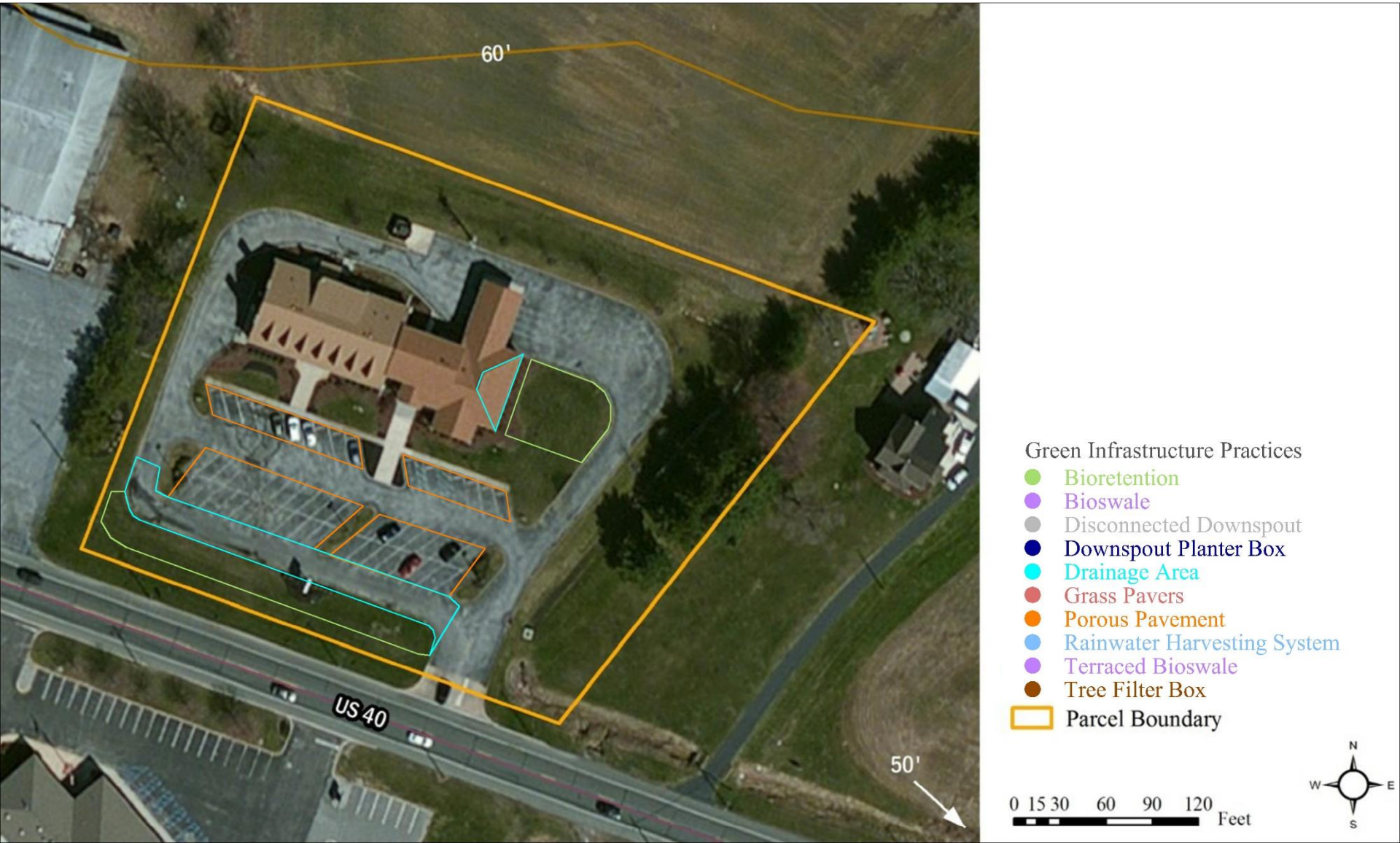
Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.151	25	11,093	0.37
Porous pavement	0.260	44	19,059	0.64

Estimated cost is $7,263 for 1,453 sq. ft. of bioretention systems. Estimate cost is $38,984 for 1,559 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement.

RUTGERS
New Jersey Agricultural Experiment Station

Franklin Bank

1179 US 40 Pilesgrove, NJ 08098
Block 40, Lot 12.06
119,518 sq. ft.



Lighthouse Christian Center

90 Fox Rd. Pilesgrove, NJ 08098
Block 80, Lot 2.03
125,820 sq. ft.

Bioretention systems could be installed in grass areas to treat runoff from the building and its paved lot. Grass pavers could replace compacted and eroded unpaved surfaces to enhance infiltration. A preliminary soil assessment for this site suggested that more soil testing would be required to determine the existing soil's suitability for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
34%	42,766	2.06	21.6	196.35	0.03	1.17

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.217	36	15,925	0.53
Grass pavers	0.062	10	4,548	0.15

Estimated cost is $10,425 for 2,085 sq. ft. of bioretention systems. Estimate cost is $9,297 for 372 sq. ft. of grass pavers.

RUTGERS
New Jersey Agricultural Experiment Station

Lighthouse Christian Center

90 Fox Rd. Pilesgrove, NJ 08098
Block 80, Lot 2.03
125,820 sq. ft.

Woodstown Veterinary Hospital

1250 US 40 Woodstown, NJ 08098
Block 80, Lot 2.04
67,784 sq. ft.

A bioretention system could be installed in the front lawn to treat the driveway's runoff and enhance the site's aesthetic appeal. A preliminary soil assessment for this site suggested that more soil testing would be required to determine the existing soil's suitability for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
38%	26,047	1.26	13.16	119.59	0.02	0.71

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.029	5	2,117	0.07

Estimated cost is $1,388 for 278 sq. ft. of bioretention systems.

RUTGERS
New Jersey Agricultural Experiment Station

Woodstown Veterinary Hospital

1250 US 40 Woodstown, NJ 08098
Block 80, Lot 2.04
67,784 sq. ft.

Camp Crockett County Park

148 Avis Mill Rd. Pilesgrove, NJ 08098
Block 81, Lot 14
2,246,029 sq. ft.

The site's paved surfaces could be repaved with porous pavement. Buildings could use rainwater harvesting systems to collect their runoff. Bioretention systems could be implemented to intercept runoff before it reaches the nearby lake. A preliminary soil assessment for this site suggested that more soil testing would be required to determine the existing soil's suitability for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
2%	49,301	2.38	24.9	226.36	0.04	1.35

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.283	47	20,757	0.69
Porous pavement	0.157	26	11,512	0.38
Rainwater harvesting systems	0.000	3	2,446	0.08

Estimated cost is $13,588 for 2,718 sq. ft. of bioretention systems. Estimated cost is $23,555 for 942 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement. Estimated cost is $10,000 for rainwater harvesting systems.

RUTGERS
New Jersey Agricultural Experiment Station

Camp Crockett County Park

148 Avis Mill Rd. Pilesgrove, NJ 08098
Block 81, Lot 14
2,246,029 sq. ft.

Camp Crockett County Park

148 Avis Mill Rd. Pilesgrove, NJ 08098
Block 81, Lot 14
2,246,029 sq. ft.

10-ft Contour Interval

Parcel Boundary

0 115230 460 690 920 Feet

N
W E
S

Nichomus Run Watershed

1. Acme
2. Rite Aid
3. Wendy's
4. Joe's Pizza / Donna's Hallmark Shop
5. Tri-County Veterinary Hospital

RUTGERS
New Jersey Agricultural Experiment Station

Acme

857 NJ 45 Pilesgrove, NJ 08098
Block 64, Lot 5
296,686 sq. ft.

Parking spaces could be repaved with porous pavement to intercept runoff prior to storm drains, thereby reducing loads to storm sewers. Bioretention systems could also be utilized to collect runoff. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
89%	264,274	12.74	133.47	1,213.37	0.21	7.25

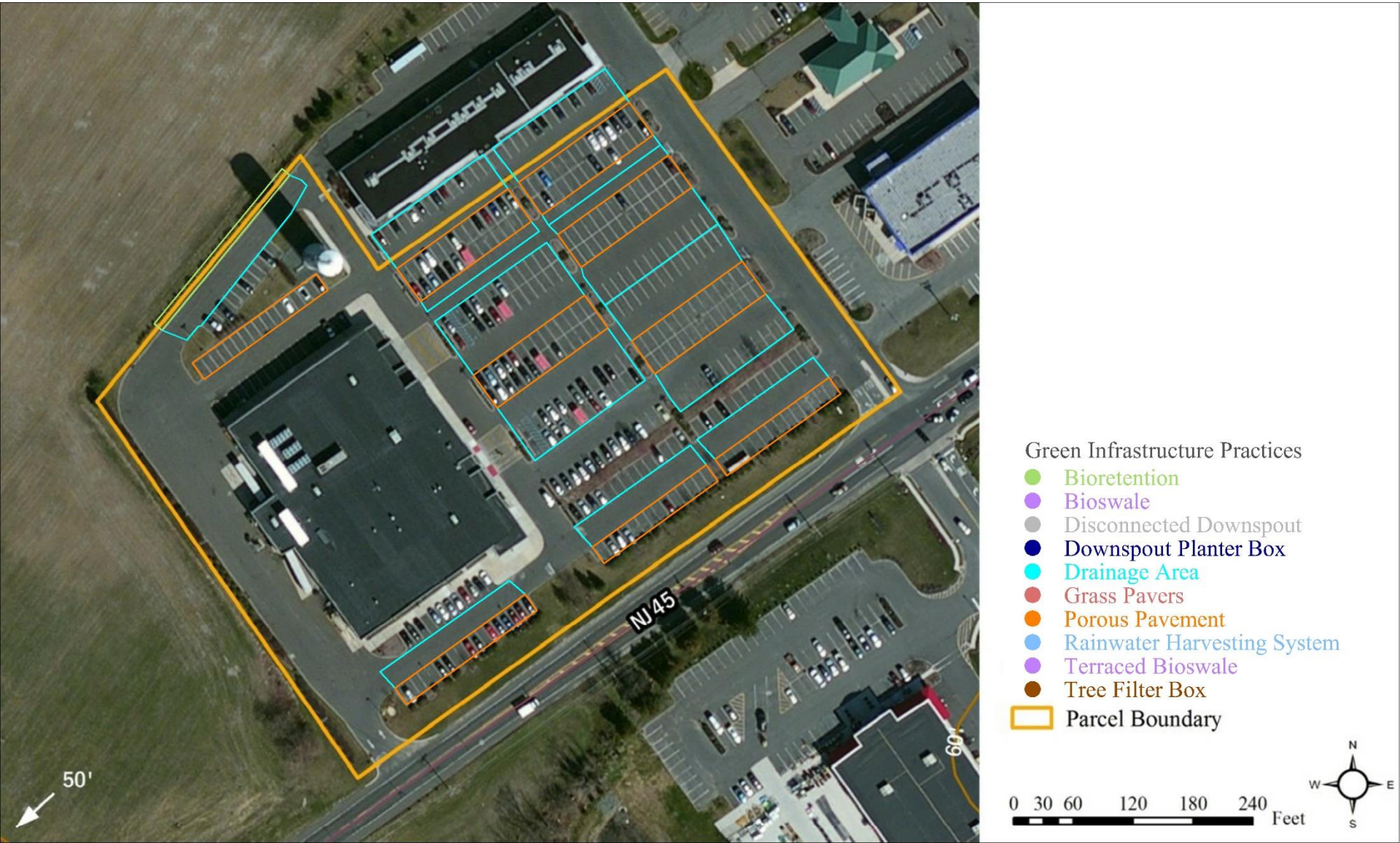
Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.132	22	9,664	0.32
Porous pavement	2.671	447	195,789	6.53

Estimated cost is $6,325 for 1,265 sq. ft. of bioretention systems. Estimated cost is $400,508 for 16,020 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement.

RUTGERS
New Jersey Agricultural Experiment Station

Acme

857 NJ 45 Pilesgrove, NJ 08098
Block 64, Lot 5
296,686 sq. ft.



Rite Aid

865 NJ 45 Pilesgrove, NJ 08098
Block 64, Lot 5.02
91,552 sq. ft.

Parking spaces could be repaved with porous pavement to intercept runoff prior to storm drains, thereby reducing loads to storm sewers. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
72%	65,796	3.17	33.23	302.09	0.05	1.80

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Porous pavement	0.781	131	57,229	1.91

Estimated cost is $117,070 for 4,683 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement.

Rite Aid

865 NJ 45 Pilesgrove, NJ 08098
Block 64, Lot 5.02
91,552 sq. ft.

Wendy's

861 US 40 Pilesgrove, NJ 08098
Block 64, Lot 5.04
61,425 sq. ft.

Parking spaces could be repaved with porous pavement to intercept runoff prior to storm drains, thereby reducing loads to storm sewers. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
75%	46,269	2.23	23.37	212.44	0.04	1.27

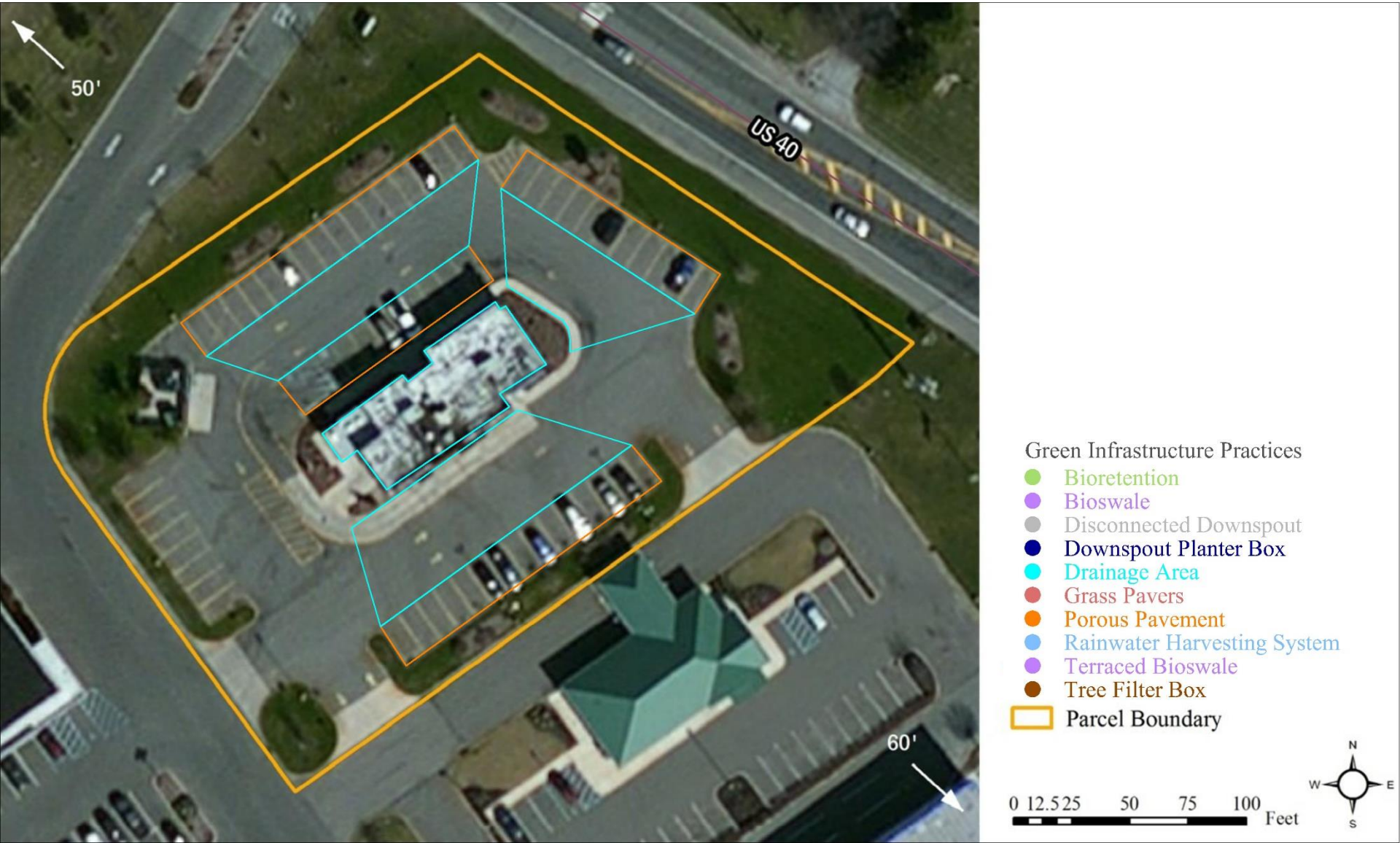
Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Porous pavement	0.589	99	43,175	1.44

Estimated cost is $88,320 for 3,533 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement.

RUTGERS
New Jersey Agricultural Experiment Station

Wendy's

861 US 40 Pilesgrove, NJ 08098
Block 64, Lot 5.04
61,425 sq. ft.



Joe's Pizza / Donna's Hallmark Shop

859 NJ 45 Pilesgrove, NJ 08098
Block 64, Lot 5.05
87,689 sq. ft.

Parking spaces could be repaved with porous pavement to intercept runoff prior to storm drains, thereby reducing loads to storm sewers. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
69%	60,736	2.93	30.67	278.86	0.05	1.67

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Porous pavement	0.340	57	24,878	0.83

Estimated cost is $50,898 for 2,036 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement.

RUTGERS
New Jersey Agricultural Experiment Station

Joe’s Pizza / Donna’s Hallmark Shop

859 NJ 45 Pilesgrove, NJ 08098
Block 64, Lot 5.05
87,689 sq. ft.

Tri-County Veterinary Hospital

816 US 40, Pilesgrove, NJ 08098
Block 65, Lot 7.02
439,214 sq. ft.

One or more bioretention systems could be installed along the rear parking lot to manage its stormwater runoff. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
5%	19,980	0.96	10.09	91.73	0.02	0.55

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.061	10	4,466	0.15

Estimated cost is $2,925 for 585 sq. ft. of bioretention systems.

RUTGERS
New Jersey Agricultural Experiment Station

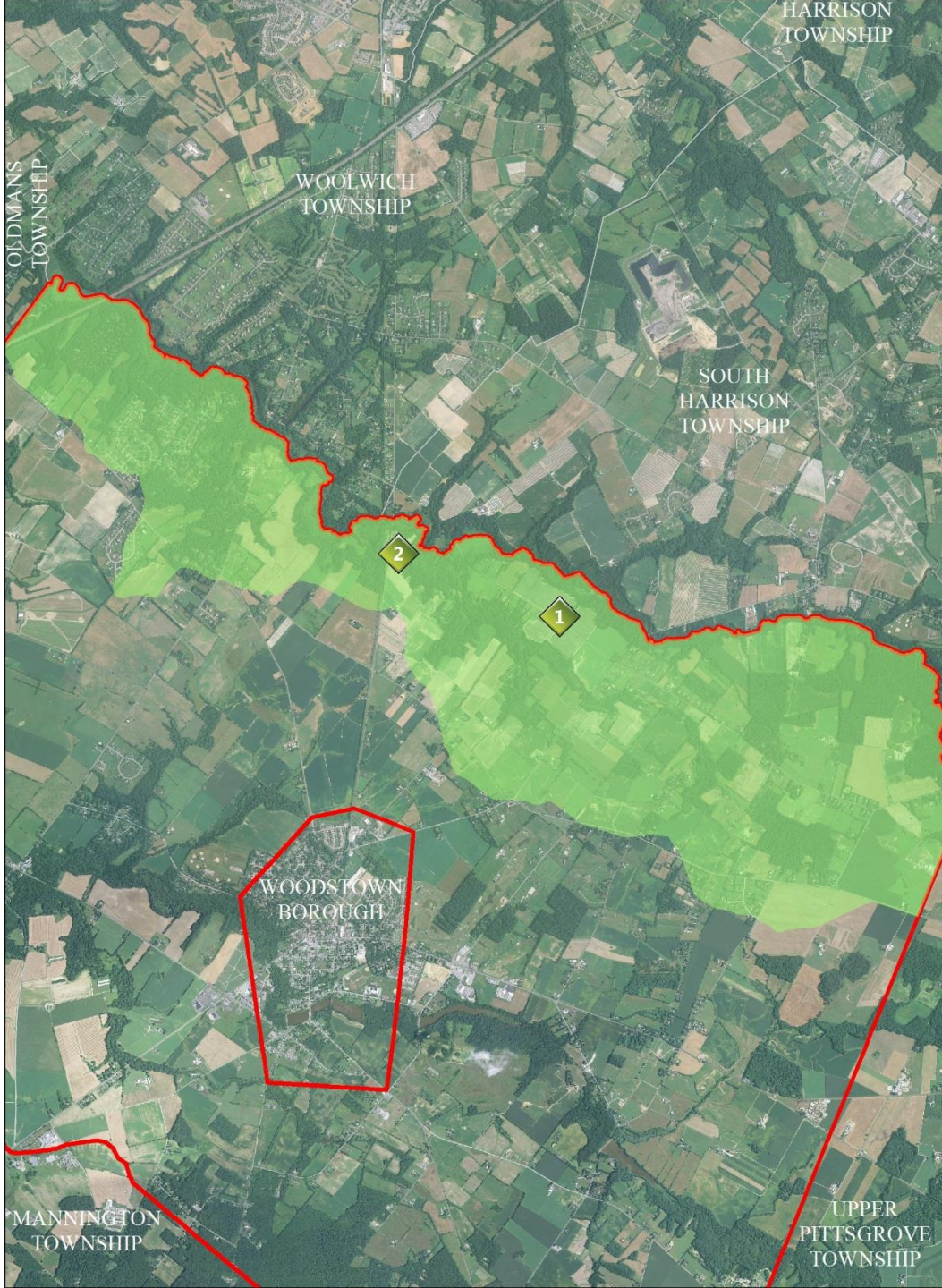
Tri-County Veterinary Hospital

816 US 40, Pilesgrove, NJ 08098
Block 65, Lot 7.02
439,214 sq. ft.

Oldmans Creek Watershed

1. Woodstown Preschool Academy

2. R E Pierson Construction Co. Inc.



RUTGERS
New Jersey Agricultural Experiment Station

Woodstown Preschool Academy

343 Lincoln Rd. Pilesgrove, NJ 08098
Block 9, Lot 3.03
123,844 sq. ft.

The buildings' downspouts could be routed to bioretention systems for improved infiltration and aesthetic appeal. The parking lot's runoff could be better managed by porous pavement. A preliminary soil assessment for this site suggested that the site's existing soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
17%	20,748	1	10.48	95.26	0.02	0.57

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Bioretention systems	0.027	5	1,990	0.07
Porous pavement	0.151	25	11,078	0.37

Estimated cost is $1,300 for 260 sq. ft. of bioretention systems. Estimated cost is $22,656 for 906 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement.

RUTGERS
New Jersey Agricultural Experiment Station

Woodstown Preschool Academy

343 Lincoln Rd. Pilesgrove, NJ 08098
Block 9, Lot 3.03
123,844 sq. ft.

R E Pierson Construction Co. Inc.

426 Swedesboro Rd. Pilesgrove, NJ 08098
Block 11, Lot 3.01
959,577 sq. ft.

Porous pavement would intercept runoff prior to storm drains, thereby reducing loads to storm sewers and reducing localized flooding. Several building could be retrofitted with rainwater harvesting systems. A preliminary soil assessment for this site suggested that more soil testing would be required to determine the existing soil's suitability for green infrastructure.

Impervious Cover		Existing Loads (lbs/year)			Runoff Volume (Mgal)	
%	Square Feet	TP	TN	TSS	For the 1.25” Water Quality Storm	For an Annual Rainfall of 44”
32%	305,765	14.74	154.43	1403.88	0.24	8.39

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	Total Suspended Solids Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu.ft./second)
Porous pavement	0.901	151	66,011	2.20
Rainwater harvesting systems	0.000	14	12,357	0.41

Estimated cost is $135,039 for 5,402 sq. ft. of porous pavement with a two-foot stone reservoir under the pavement. Estimated cost is $10,000 for rainwater harvesting systems.

RUTGERS
New Jersey Agricultural Experiment Station

R E Pierson Construction Co. Inc.

426 Swedesboro Rd. Pilesgrove, NJ 08098
Block 11, Lot 3.01
959,577 sq. ft.