Draft

Impervious Cover Reduction Action Plan
for
Maurice River Township, Cumberland County, New Jersey

Prepared for Maurice River Township by the
Rutgers Cooperative Extension Water Resources Program

June 14, 2018

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Introduction

Located in Cumberland County, New Jersey, Maurice River Township covers approximately 95.2 square miles. Figures 1 and 2 illustrate that Maurice River Township is dominated by forest. A total of 4.2% of the municipality's land use is classified as urban. Of the urban land in Maurice River Township, rural residential is the dominant land use (Figure 3).

The New Jersey Department of Environmental Protection's (NJDEP) 2012 land use/land cover geographical information system (GIS) data layer categorizes Maurice River Township into many unique land use areas, assigning a percent impervious cover for each delineated area. These impervious cover values were used to estimate the impervious coverage for Maurice River Township. Based upon the 2012 NJDEP land use/land cover data, approximately 0.9% of Maurice River Township has impervious cover. This level of impervious cover suggests that the streams in Maurice River Township are sensitive streams. [1]

Methodology

Maurice River Township contains portions of ten 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.

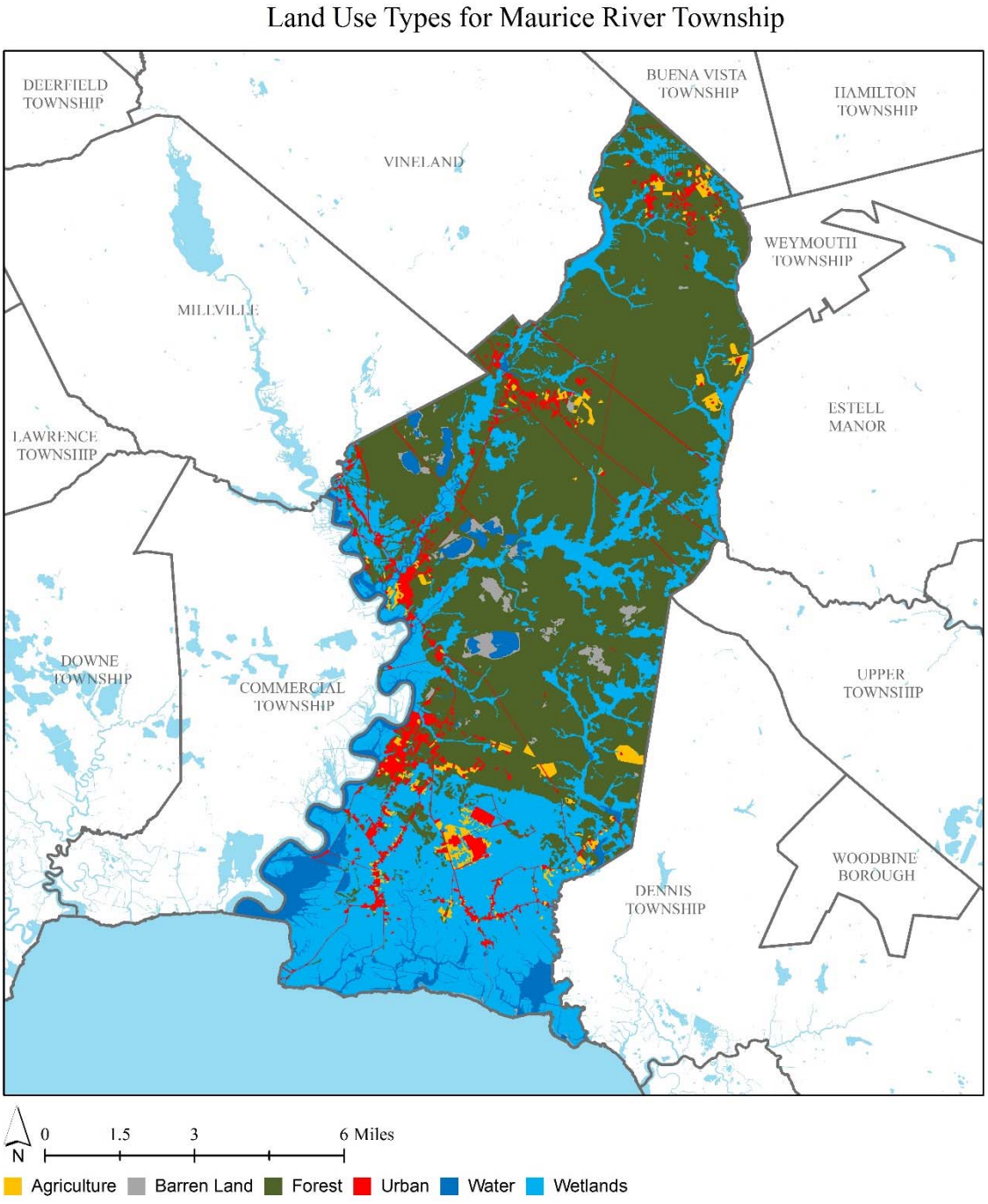


Figure 1: Map illustrating the land use in Maurice River Township

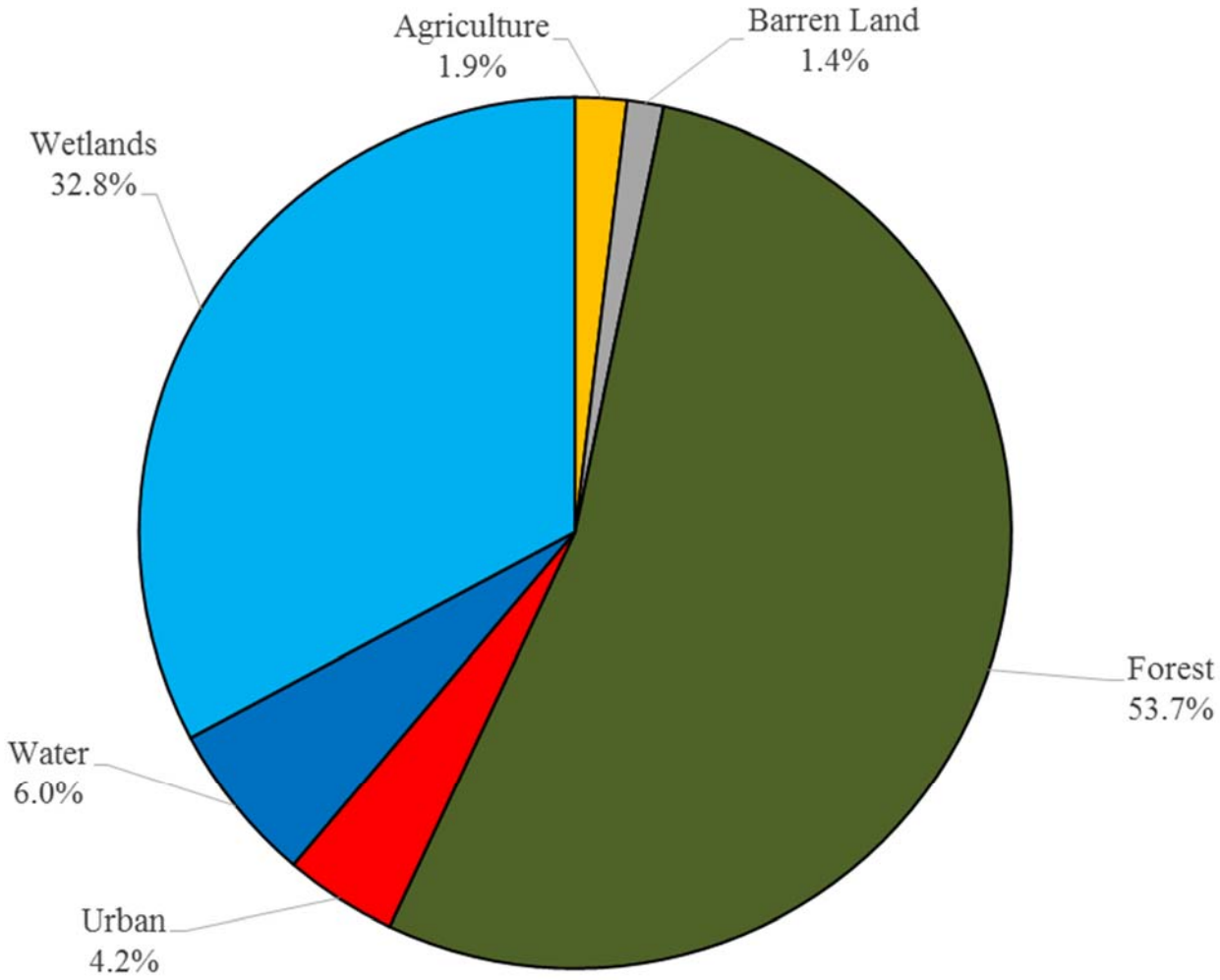


Figure 2: Pie chart illustrating the land use in Maurice River Township

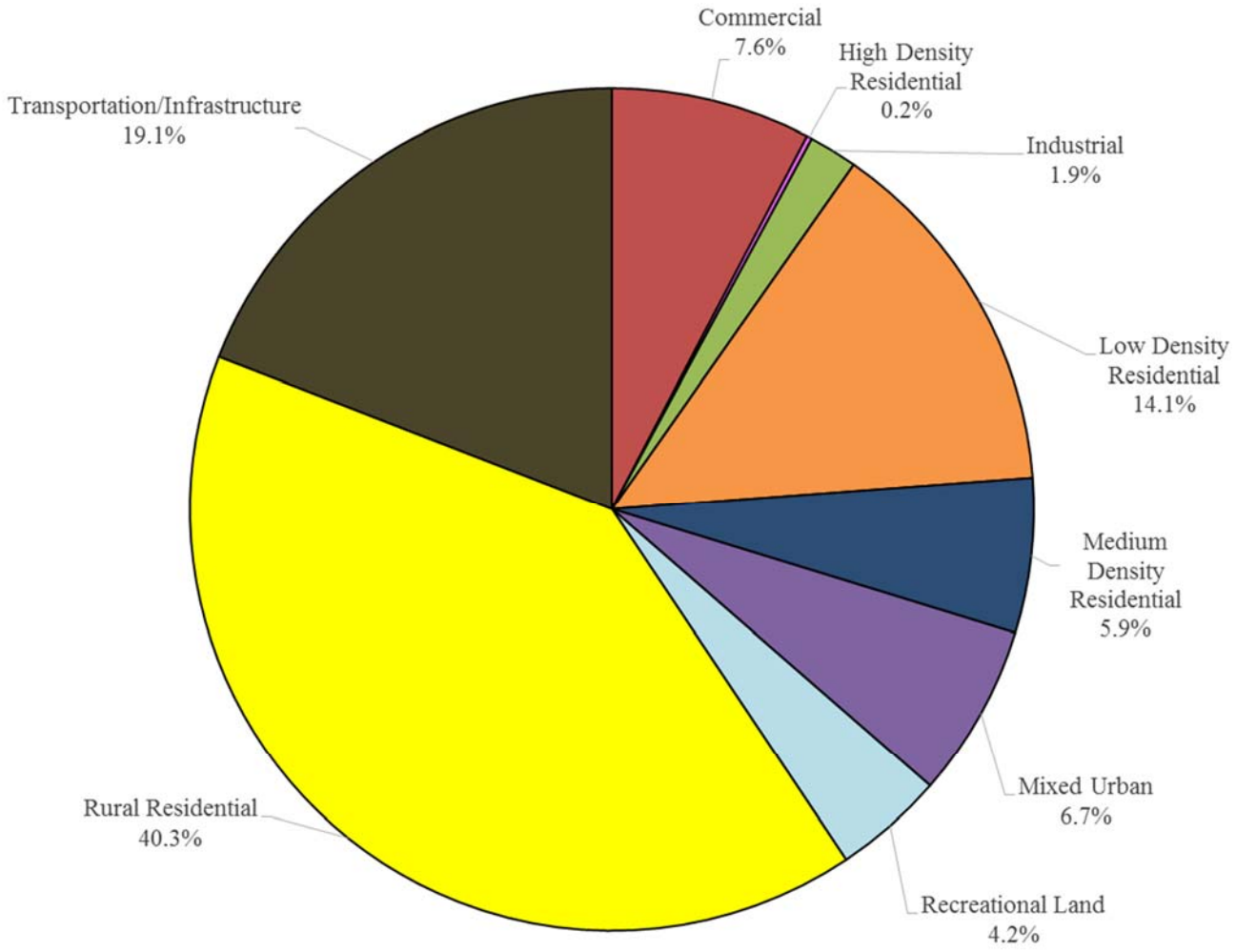


Figure 3: Pie chart illustrating the various types of urban land use in Maurice River Township

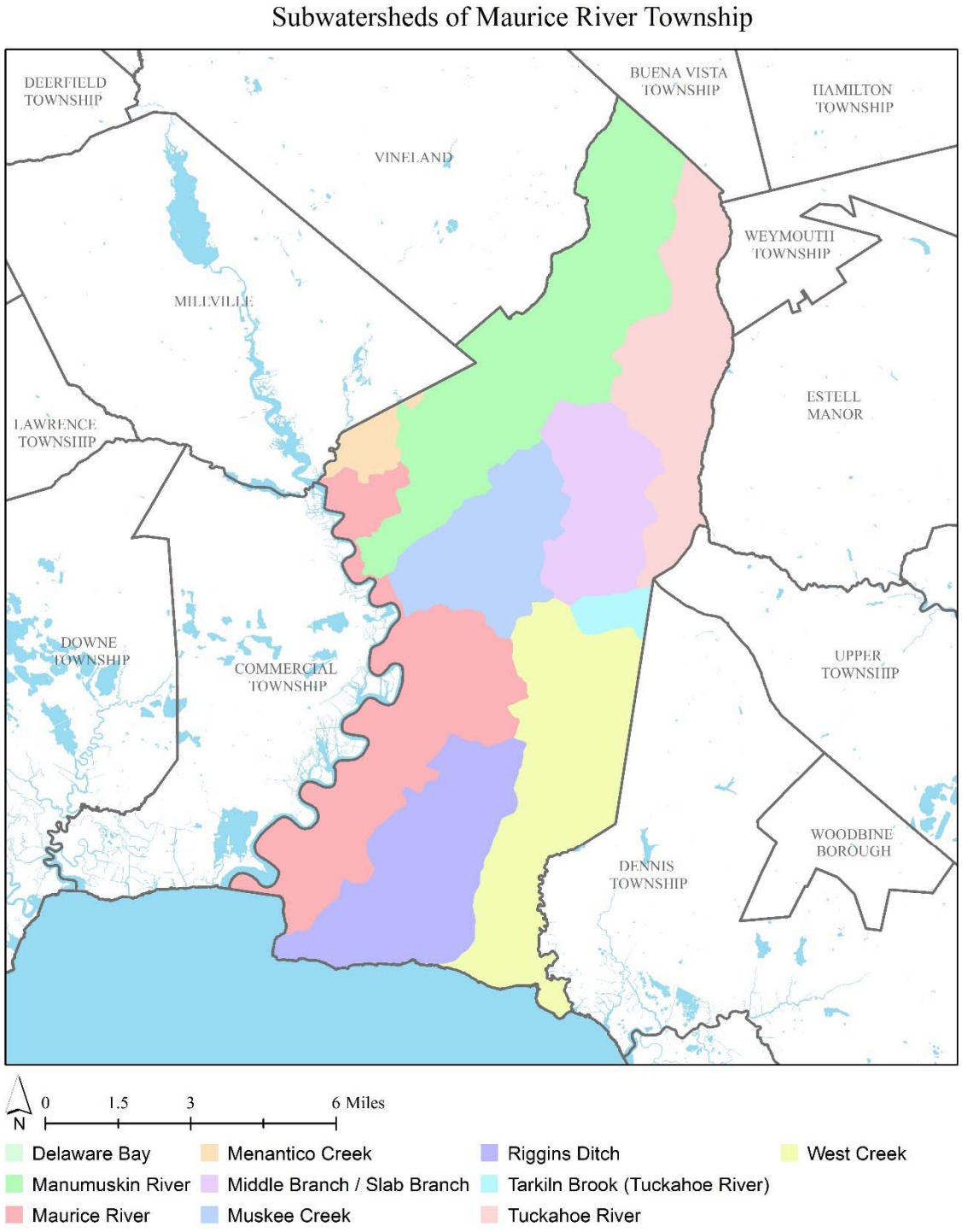


Figure 4: Map of the subwatersheds in Maurice River Township

For each potential project site, specific aerial loading coefficients for commercial land use were used to determine the annual runoff loads for total phosphorus (TP), total nitrogen (TN), and total suspended solids (TSS) from impervious surfaces (Table 1). These are the same aerial loading coefficients that NJDEP uses in developing total maximum daily loads (TMDLs) for impaired waterways of the state. The percentage of impervious cover for each site was extracted from the 2012 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 Maurice River Township using the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey, which utilizes regional and statewide soil data to predict soil types in an area. Several key soil parameters were examined (e.g., natural drainage class, saturated hydraulic conductivity of the most limiting soil layer (K_{sat}), depth to water table, and hydrologic soil group) to evaluate the suitability of each site's soil for green infrastructure practices. In cases where multiple soil types were encountered, the key soil parameters were examined for each soil type expected at a site.

For each potential project site, drainage areas were determined for each of the green infrastructure practices proposed at the site. These green infrastructure practices were designed to manage the 2-year design storm, enabling these practices to capture 95% of the annual rainfall. Runoff volumes were calculated for each proposed green infrastructure practice. The reduction in TSS loading was calculated for each drainage area for each proposed green infrastructure practice using the aerial loading coefficients in Table 1. The maximum volume reduction in stormwater runoff for each green infrastructure practice for a storm was determined by calculating the volume of runoff captured from the 2-year design storm. For each green infrastructure practice, peak discharge reduction potential was determined through hydrologic modeling in HydroCAD. For each green infrastructure practice, a cost estimate is provided. These costs are based upon the square footage of the green infrastructure practice and the real cost of green infrastructure practice implementation in New Jersey.

Table 1: Aerial Loading Coefficients[2]

Land Cover	TP load (lbs/acre/yr)	TN load (lbs/acre/yr)	TSS load (lbs/acre/yr)
High, Medium Density Residential	1.4	15	140
Low Density, Rural Residential	0.6	5	100
Commercial	2.1	22	200
Industrial	1.5	16	200
Urban, Mixed Urban, Other Urban	1.0	10	120
Agriculture	1.3	10	300
Forest, Water, Wetlands	0.1	3	40
Barrenland/Transitional Area	0.5	5	60

[2] New Jersey Department of Environmental Protection (NJDEP), Stormwater Best Management Practice Manual, 2004.

Green Infrastructure Practices

Green infrastructure is an approach to stormwater management that is cost-effective, sustainable, and environmentally friendly. Green infrastructure projects capture, filter, absorb, and reuse stormwater to maintain or mimic natural systems and to treat runoff as a resource. As a general principal, green infrastructure practices use soil and vegetation to recycle stormwater runoff through infiltration and evapotranspiration. When used as components of a stormwater management system, green infrastructure practices such as bioretention, green roofs, porous pavement, rain gardens, and vegetated swales can produce a variety of environmental benefits. In addition to effectively retaining and infiltrating rainfall, these practices can simultaneously help filter air pollutants, reduce energy demands, mitigate urban heat islands, and sequester carbon while also providing communities with aesthetic and natural resource benefits[3]. A wide range of green infrastructure practices have been evaluated for the potential project sites in Maurice River Township. Each practice is discussed below.

Disconnected downspouts

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

Pervious pavements

There are several types of permeable pavement systems including porous asphalt, pervious concrete, permeable pavers, and grass pavers. These surfaces are hard and support vehicle traffic but also allow water to infiltrate through the surface. They have an underlying stone layer to store stormwater runoff and allow it to slowly seep into the ground.

[3] United States Environmental Protection Agency (USEPA), 2013. Watershed Assessment, Tracking, and Environmental Results, New Jersey Water Quality Assessment Report. http://ofmpub.epa.gov/waters10/attains_state.control?p_state=NJ

Bioretention systems/rain gardens

These are landscaped features that are designed to capture, treat, and infiltrate stormwater runoff. These systems can easily be incorporated into existing landscapes, improving aesthetics and creating wildlife habitat while managing stormwater runoff. Bioretention systems also can be used in soils that do not quickly infiltrate by incorporating an underdrain into the system.

Downspout planter boxes

These are wooden boxes with plants installed at the base of a downspout that provide an opportunity to beneficially reuse rooftop runoff.

Rainwater harvesting systems (cistern or rain barrel)

These systems capture rainwater, mainly from rooftops, in cisterns or rain barrels. The water can then be used for watering gardens, washing vehicles, or for other non-potable uses.

Bioswale

Bioswales are landscape features that convey stormwater from one location to another while removing pollutants and providing water an opportunity to infiltrate.

Stormwater planters

Stormwater planters are vegetated structures that are built into the sidewalk to intercept stormwater runoff from the roadway or sidewalk. Many of these planters are designed to allow the water to infiltrate into the ground while others are designed simply to filter the water and convey it back into the stormwater sewer system.

Tree filter boxes

These are pre-manufactured concrete boxes that contain a special soil mix and are planted with a tree or shrub. They filter stormwater runoff but provide little storage capacity. They are typically designed to quickly filter stormwater and then discharge it to the local sewer system.

Potential Project Sites

Appendix A contains information on potential project sites where green infrastructure practices could be installed as well as information on existing site conditions. The recommended green infrastructure practices and the drainage area that the green infrastructure practices can treat are identified for each potential project site. For each practice, the recharge potential, TSS removal potential, maximum volume reduction potential per storm, the peak reduction potential, and estimated costs are provided. This information is also provided so that proposed development projects that cannot satisfy the New Jersey stormwater management requirements for major development can use one of the identified projects to offset a stormwater management deficit. [4]

[4] New Jersey Administrative Code, N.J.A.C. 7:8, Stormwater Management, Statutory Authority: N.J.S.A. 12:5-3, 13:1D-1 et seq., 13:9A-1 et seq., 13:19-1 et seq., 40:55D-93 to 99, 58:4-1 et seq., 58:10A-1 et seq., 58:11A-1 et seq. and 58:16A-50 et seq., *Date last amended: April 19, 2010*.

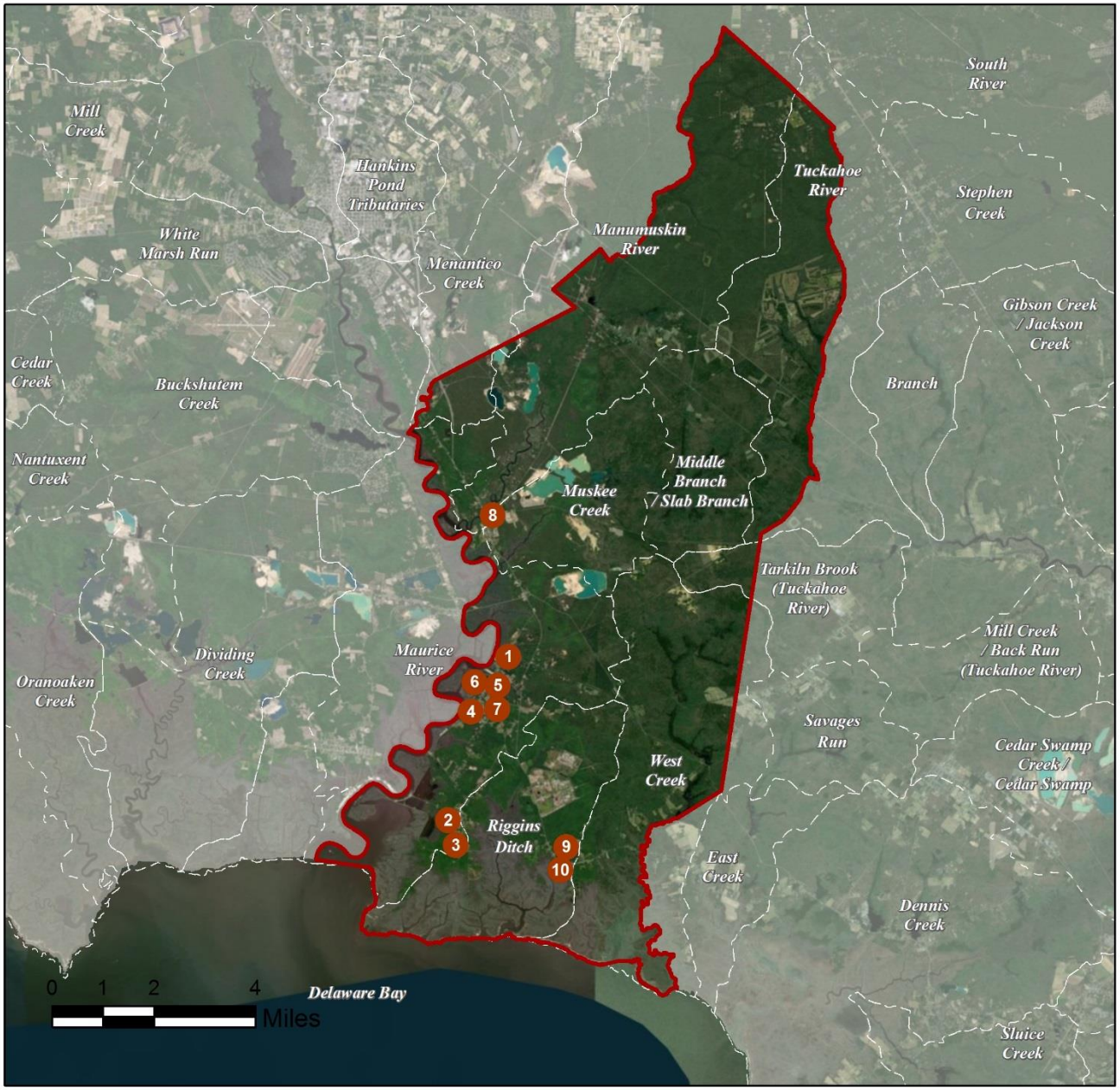
Conclusion

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. Green Infrastructure Sites

MAURICE RIVER TOWNSHIP: GREEN INFRASTRUCTURE SITES



SITES WITHIN THE MAURICE RIVER SUBWATERSHED

1. Dorchester United Methodist Church
2. Heislerville Post Office
3. Heislerville United Methodist Church
4. Leesburg Post Office
5. Leesburg Volunteer Fire Company & City Hall
6. Maurice River Road Company
7. Maurice River Township Municipal Court

SITES WITHIN THE MUSKEE CREEK SUBWATERSHED

8. Calvary Bible Fellowship Church

SITES WITHIN THE RIGGINS DITCH SUBWATERSHED

9. Delmont Post Office
10. Delmont United Methodist Church

b. Proposed Green Infrastructure Concepts

Dorchester United Methodist Church

Subwatershed: Maurice River

Site Area: 16,217 sq. ft.

Address: 453 Main Street
Dorchester, NJ 08316

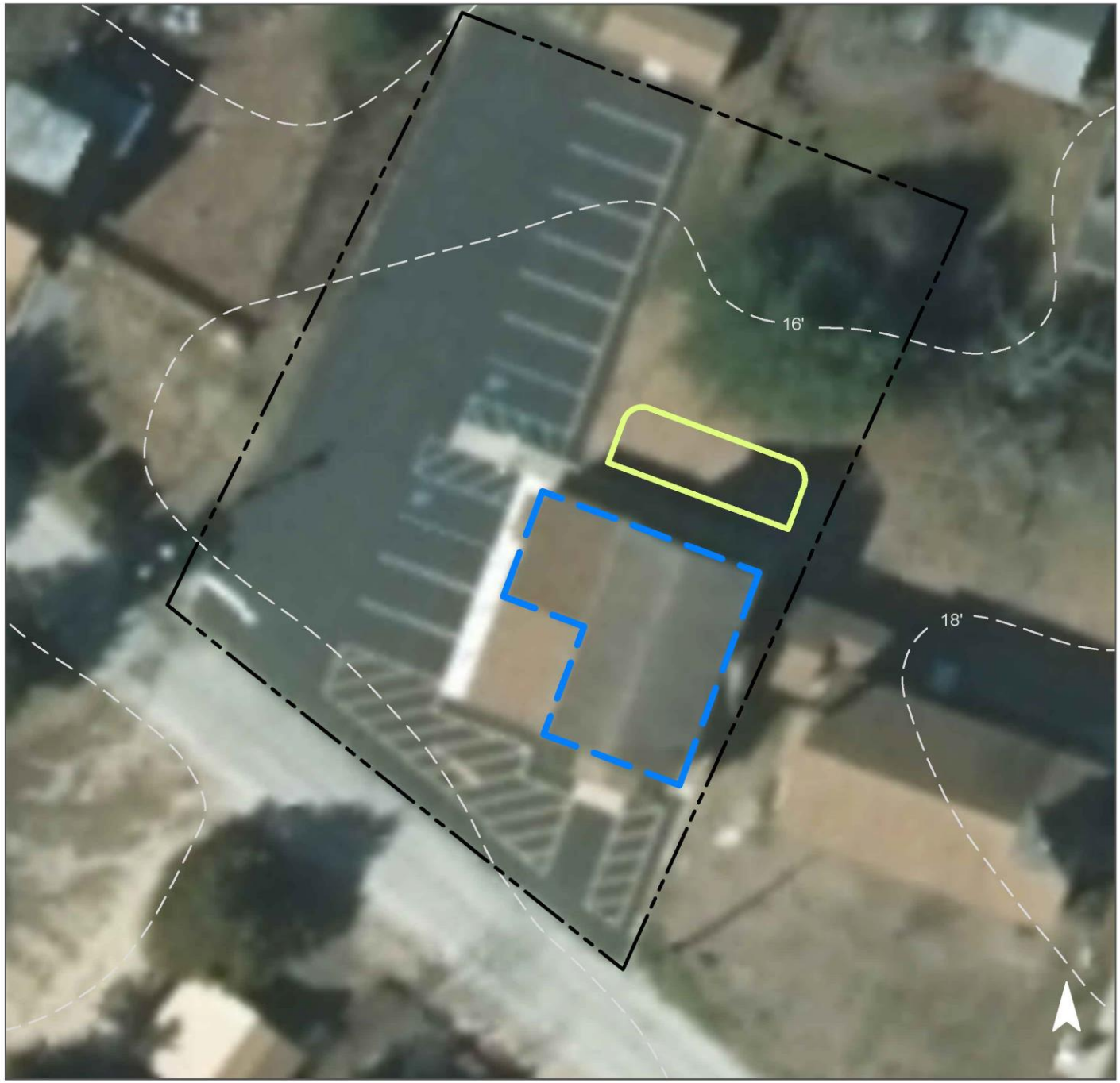
Block and Lot: Block 273, Lot 1

A rain garden can be installed adjacent to the entrance to capture rainwater runoff from the roof. Rain gardens are used to reduce sediment and nutrient loading to the local waterway and increase groundwater recharge. 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"
63	10,182	0.5	5.1	46.7	.008	.28

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.043	7	3,160	0.12	415	$2,075

GREEN INFRASTRUCTURE RECOMMENDATIONS



Dorchester United Methodist

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

0 15' 30'

Heislerville Post Office

Subwatershed: Maurice River

Site Area: 287,659 sq. ft.

Address: 222 Main Street
Heislerville, NJ 08324

Block and Lot: Block 311, Lot 100

A rain garden can be installed in the turfgrass area along the south side of the building to capture, treat, and infiltrate stormwater runoff from the roof. Porous pavement can be installed in the parking lot to promote groundwater recharge and filter 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"
5	14,731	0.7	7.4	67.6	0.011	0.40

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.029	5	2,100	0.08	275	$1,375
Pervious pavement	0.120	20	8,800	0.33	1,050	$26,250

GREEN INFRASTRUCTURE RECOMMENDATIONS

Heislerville Post Office

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

0 15' 30'

Heislerville United Methodist Church

Subwatershed: Maurice River

Site Area: 34,331 sq. ft.

Address: 238 Main Street
Heislerville, NJ 08324

Block and Lot: Block 315, Lot 16

A rain garden can be installed in the front of the building. A connected downspout can be disconnected and redirected into the rain garden. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
20	6,982	0.3	3.5	32.1	0.005	0.19

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.019	3	1,380	0.05	180	$900

GREEN INFRASTRUCTURE RECOMMENDATIONS

Hesilerville United Methodist Church

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

0 15' 30'

Leesburg Post Office

Subwatershed: Maurice River

Site Area: 14,235 sq. ft.

Address: 174 High Street
Leesburg, NJ 08327

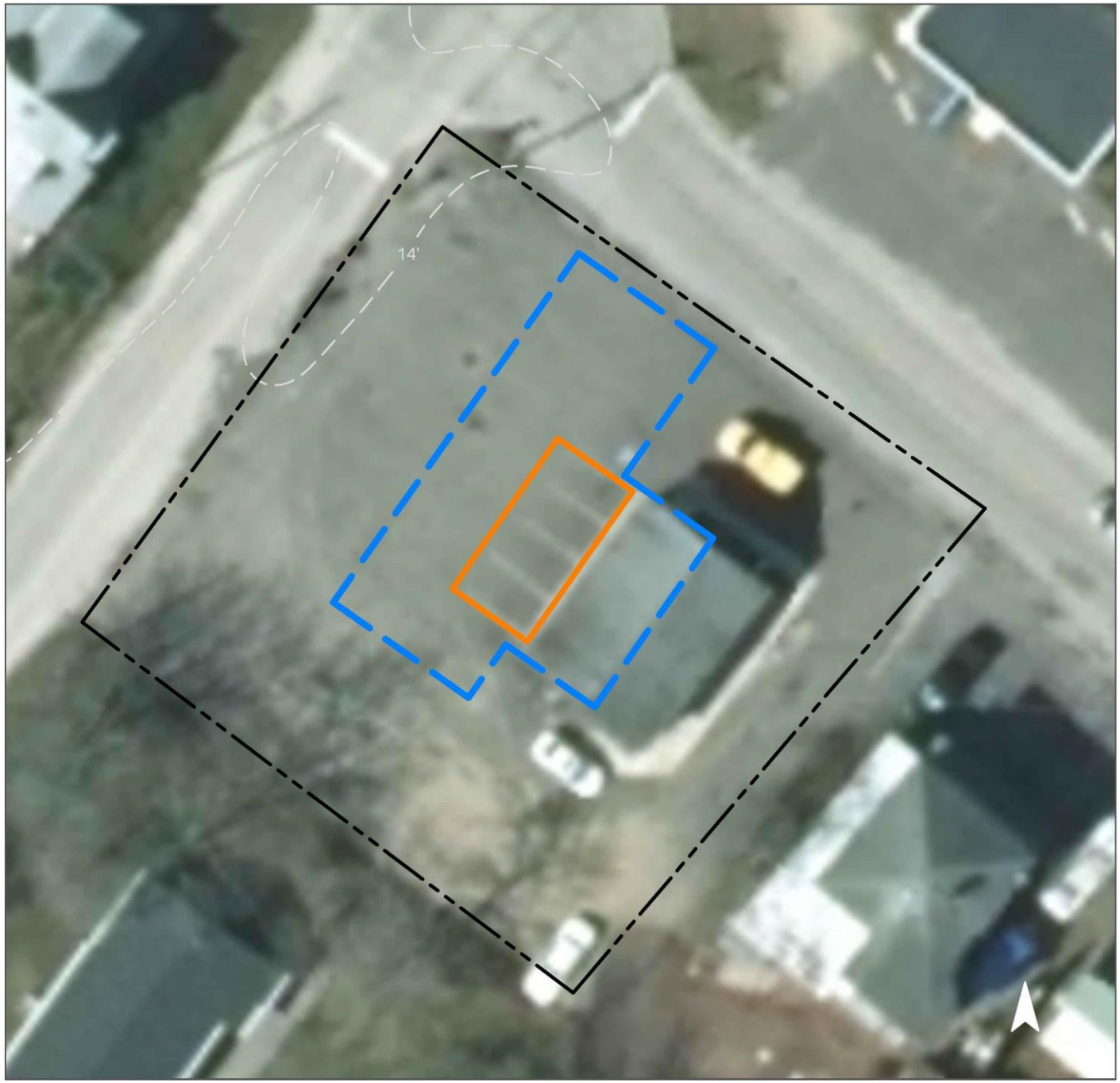
Block and Lot: Block 296, Lot 1.01

Pervious pavement can be installed in the parking lot to collect stormwater from the three downspouts from the eastern side of the building. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
67	9,652	0.5	4.8	43.9	0.007	0.26

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavement	0.094	16	6,880	0.26	650	$16,250

GREEN INFRASTRUCTURE RECOMMENDATIONS



Leesburg Post Office

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

0 15' 30'

Leesburg Volunteer Fire Company & City Hall

Subwatershed: Maurice River

Site Area: 20,078 sq. ft.

Address: 550 Main Street
Leesburg, NJ 08327

Block and Lot: Block 286, Lot 31

Pervious pavement can be installed on the northeast side of the parking lot to capture and infiltrate the stormwater runoff from the roof. On the south side of the building a connected downspout can be connected to a cistern to capture roof runoff for use in washing cars, watering plants, or for other non-potable purposes. 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"
72	14,359	0.7	7.3	65.9	0.011	0.39

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavement	0.067	11	4,930	0.19	1,940	$48,500
Rainwater harvesting	0.049	8	1,500	0.06	1,500 (gal)	$3,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Leesburg Volunteer Fire Company & City Hall

- pervious pavement
- rainwater harvesting
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 25' 50'

Maurice River Road Company

Subwatershed: Maurice River

Site Area: 95,783 sq. ft.

Address: 552 Main Street
Leesburg, NJ 08327

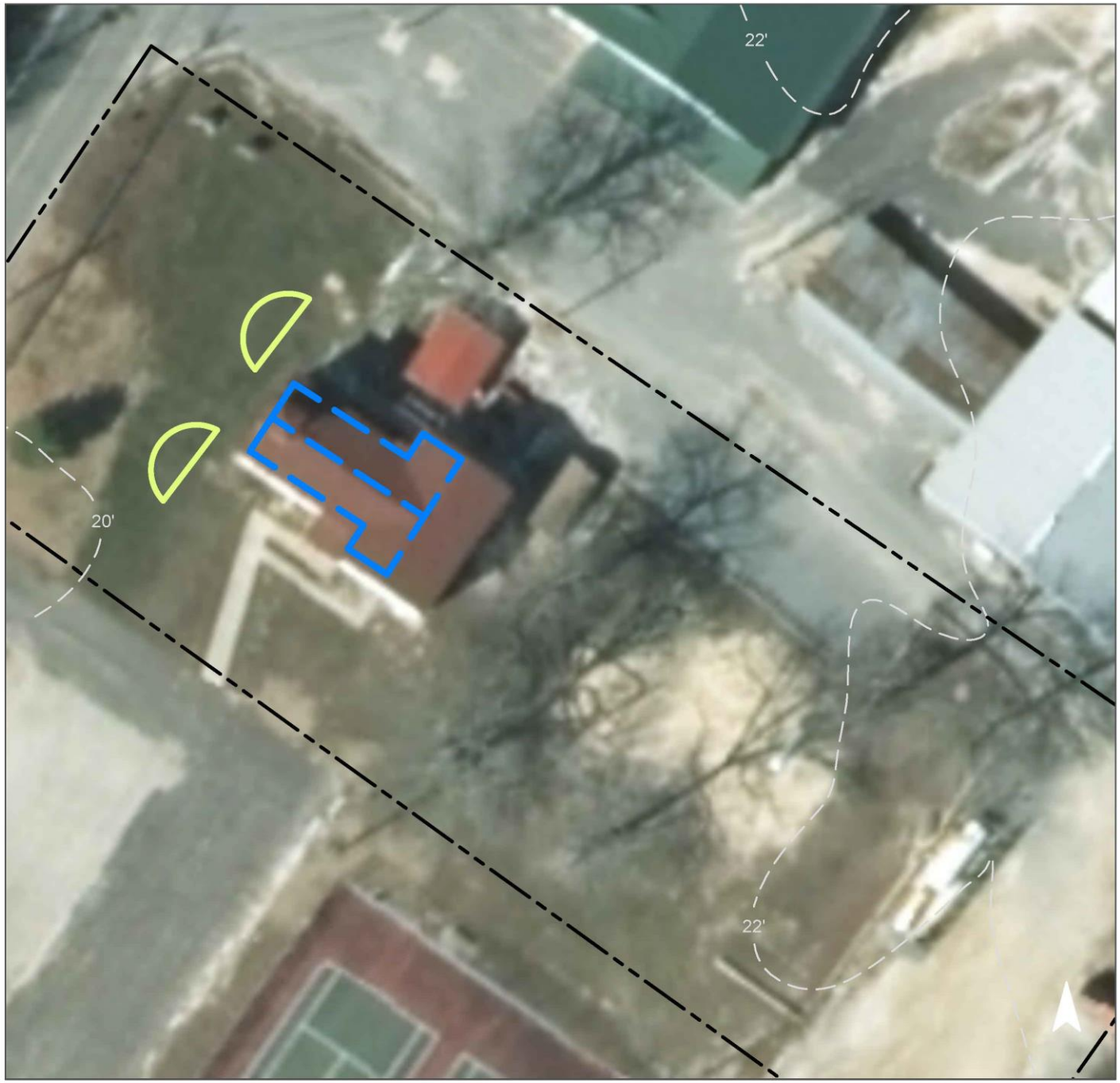
Block and Lot: Block 286, Lot 21

Two rain gardens can be installed on the western side of the building near the entrance to capture, treat, and infiltrate stormwater runoff from the roof. These systems can easily be incorporated into existing landscapes, provide aesthetic value, and create wildlife habitat while managing stormwater runoff. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
33	31,854	1.5	16.1	146.3	0.025	0.87

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	0.031	5	2,300	0.09	300	$1,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



Maurice River Road Company

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

0 20' 40'

Maurice River Township Municipal Court

Subwatershed: Maurice River

Site Area: 210,722 sq. ft.

Address: 590 Main Street
Leesburg, NJ 08372

Block and Lot: Block 286, Lot 21.01

A rain garden can be installed in the existing detention basin if possible to increase filtration and absorption of the water from the area. Another rain garden can be installed on the southeast side of the building where the connected downspouts can be disconnected and redirected into the rain garden. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
37	78,542	3.8	39.7	360.6	0.061	2.15

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.141	24	10,360	0.39	1,355	$6,775

GREEN INFRASTRUCTURE RECOMMENDATIONS

Maurice River Township Municipal Court

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

0 50' 100'

Calvary Bible Fellowship Church

Subwatershed: Muskee River

Site Area: 9,005 sq. ft.

Address: 41 Broadway Street
Millville, NJ 08332

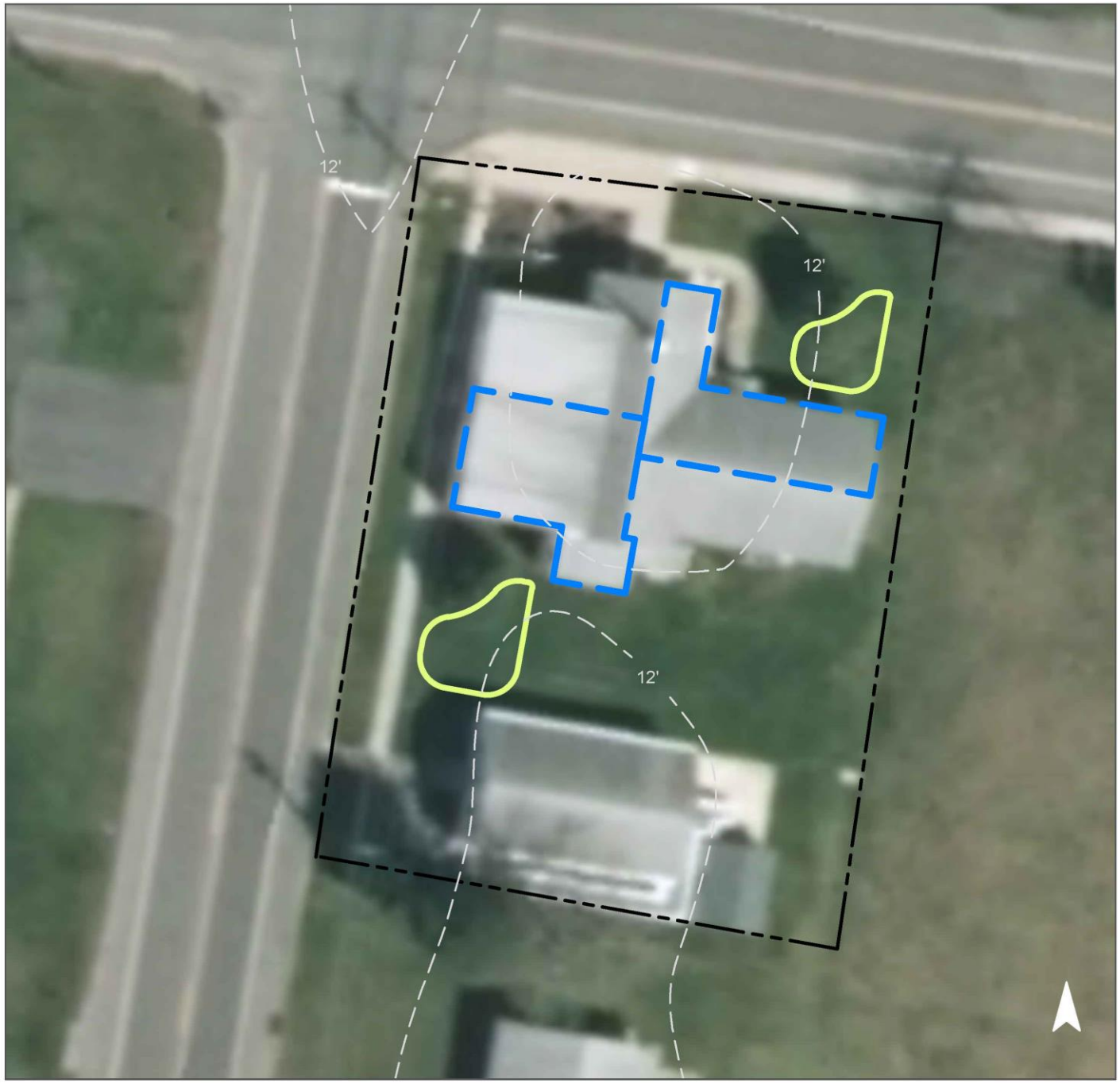
Block and Lot: Block 230, Lot 34.01

A rain garden can be installed on the north side of the building near the entrance. The rain garden will collect stormwater from two downspouts. Another rain garden can be installed on the south side of the building. There are three downspouts on the left side of the proposed garden and four from the building on the right that can be directed into the rain garden. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
42	3,748	0.2	1.9	17.2	0.003	0.10

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	0.049	8	3,580	0.13	470	$2,350

GREEN INFRASTRUCTURE RECOMMENDATIONS



Calvary Bible Fellowship Church

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

0 15' 30'

Delmont Post Office

Subwatershed: Riggins Ditch

Site Area: 93,835 sq. ft.

Address: 4507 NJ-47
Delmont, NJ 08314

Block and Lot: Block 291, Lot

A rain garden can be installed in the turfgrass close to the road to capture, treat, and infiltrate stormwater runoff from the roadway before entering the catch basin. Cisterns can be installed at the downspouts to capture rooftop runoff. The water can then be used to wash cars, water landscaping, or for other non-potable purposes. 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"
19	17,867	0.2	1.9	17.2	0.003	0.10

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.066	11	4,850	0.18	635	$3,175
Rainwater harvesting	0.118	20	3,700	0.14	3,700 (gal)	$7,400

GREEN INFRASTRUCTURE RECOMMENDATIONS

Delmont Post Office

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

0 25' 50'

Delmont United Methodist Church

Subwatershed: Riggins Ditch

Site Area: 11,438 sq. ft.

Address: 4512 NJ-47
Delmont, NJ 08314

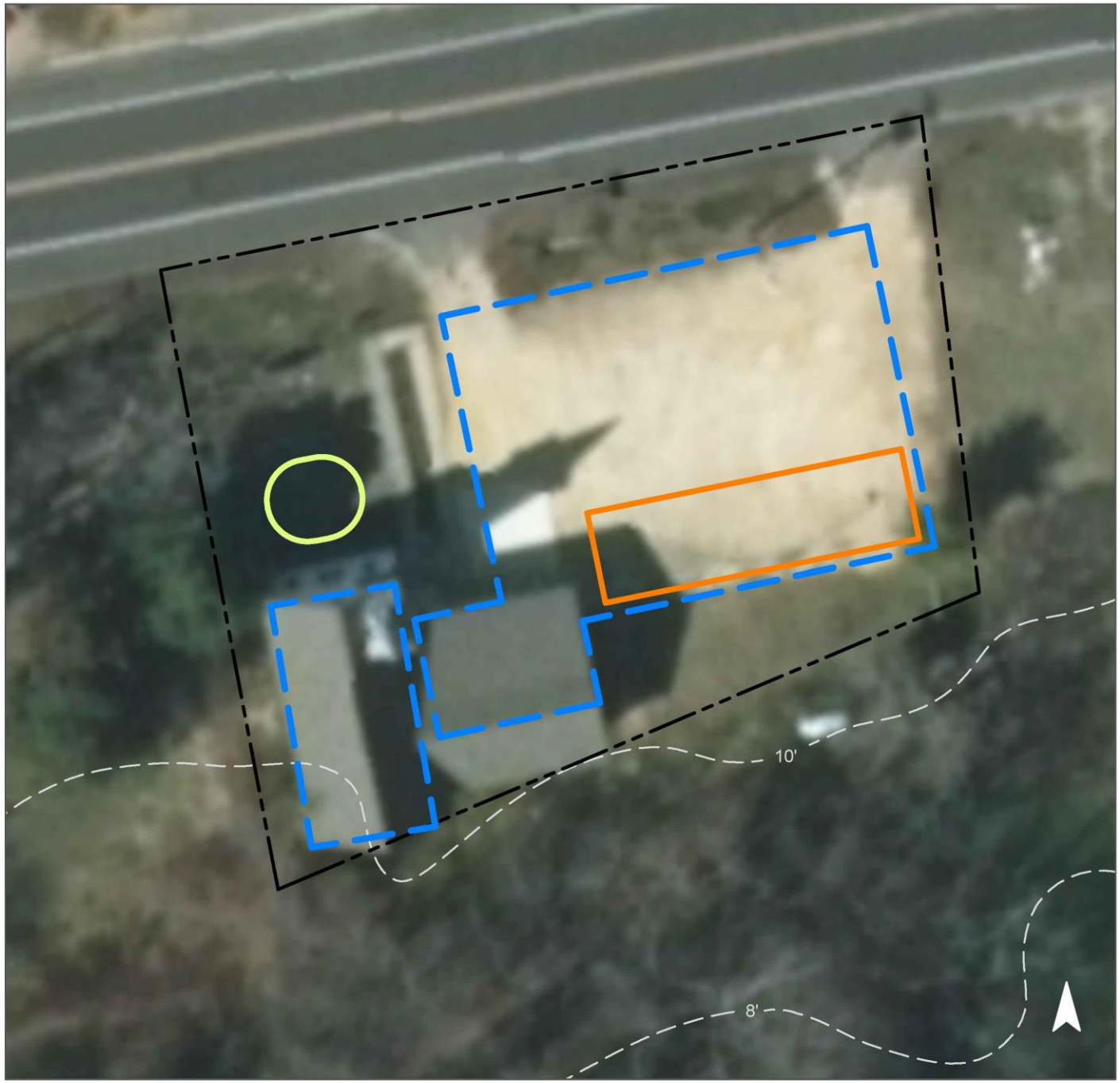
Block and Lot: Block 322, Lot 3

A rain garden can be installed in this area by connecting the downspout on the western side of the building to the location. A section of parking spaces can be converted to pervious pavement to capture and infiltrate stormwater runoff from the roof and parking lot. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
73	8,386	0.4	4.2	38.5	0.007	0.23

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 system	0.031	5	2,270	0.09	300	$1,500
Pervious pavement	0.164	27	12,040	0.45	1,130	$28,250

GREEN INFRASTRUCTURE RECOMMENDATIONS



Delmont United Methodist Church

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

0 15' 30'

c. Summary of Existing Conditions

Summary of Existing Site Conditions

	Subwatershed/Site Name/Total Site Info/GI Practice	Area (ac)	Area (SF)	Block	Lot	I.C. %	I.C. Area (ac)	I.C. Area (SF)	Existing Annual Loads (Commercial) TP (lb/yr)	TN (lb/yr)	TSS (lb/yr)	Runoff Volumes from I.C. Water Quality Storm (1.25" over 2-hours) (Mgal)	Annual (Mgal)
	MAURICE RIVER SUBWATERSHED	**15.59**	**679,025**				**3.82**	**166,213**	**8.3**	**83.9**	**763.1**	**0.130**	**4.56**
1	**Dorchester United Methodist Church**												
	Total Site Info	0.37	16,217	273	1	63	0.23	10,182	0.5	5.1	46.7	0.008	0.28
2	**Heislerville Post Office**												
	Total Site Info	6.60	287,659	311	100.02	5	0.34	14,731	0.7	7.4	67.6	0.011	0.40
3	**Heislerville United Methodist Church**												
	Total Site Info	0.79	34,331	315	16	20	0.16	6,982	0.3	3.5	32.1	0.005	0.19
4	**Leesburg Post Office**												
	Total Site Info	0.33	14,235	296	1.01	67	0.22	9,562	0.5	4.8	43.9	0.007	0.26
5	**Leesburg Volunteer Fire Company & City Hall**												
	Total Site Info	0.46	20,078	286	31	72	0.33	14,359	0.7	7.3	65.9	0.011	0.39
6	**Maurice River Road Company**												
	Total Site Info	2.20	95,783	286	21	33	0.73	31,854	1.5	16.1	146.3	0.025	0.87
7	**Maurice River Township Municipal Court**												
	Total Site Info	4.84	210,722	286	21.01	37	1.80	78,542	3.8	39.7	360.6	0.061	2.15
	MUSKEE CREEK SUBWATERSHED	**0.21**	**9,005**				**0.09**	**3,748**	**0.2**	**1.9**	**17.2**	**0.003**	**0.10**
8	**Calvary Bible Fellowship Church**												
	Total Site Info	0.21	9,005	230	34.01	42	0.09	3,748	0.2	1.9	17.2	0.003	0.10
	RIGGINS DITCH SUBWATERSHED	**2.42**	**105,272**				**0.60**	**26,253**	**1.3**	**13.3**	**120.5**	**0.020**	**0.72**
9	**Delmont Post Office**												
	Total Site Info	2.15	93,835	291	96	19	0.41	17,867	0.9	9.0	82.0	0.014	0.49
10	**Delmont United Methodist Church**												
	Total Site Info	0.26	11,438	322	3	73	0.19	8,386	0.4	4.2	38.5	0.007	0.23

d. Summary of Proposed Green Infrastructure Practices

Summary of Proposed Green Infrastructure Practices

	Subwatershed/Site Name/Total Site Info/GI Practice	Potential Management Area Area (SF)	Potential Management Area Area (ac)	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Max Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cfs)	Size of BMP	Unit Cost ($/unit)	Unit	Total Cost ($)	I.C. Treated %
	MAURICE RIVER SUBWATERSHED	**22,750**	**0.52**	**0.593**	**99**	**41,410**	**1.57**				**$106,625**	**13.7%**
1	**Dorchester United Methodist Church**											
	Bioretention system	1,650	0.04	0.043	7	3,160	0.12	415	$5	SF	$2,075	16.2%
	Total Site Info	**1,650**	**0.04**	**0.043**	**7**	**3,160**	**0.12**				**$2,075**	**16.2%**
2	**Heislerville Post Office**											
	Bioretention system	1,100	0.03	0.029	5	2,100	0.08	275	$5	SF	$1,375	11.5%
	Pervious pavement	4,600	0.11	0.120	20	8,800	0.33	1,050	$25	SF	$26,250	48.1%
	Total Site Info	**5,700**	**0.13**	**0.149**	**25**	**10,900**	**0.41**				**$27,625**	**59.6%**
3	**Heislerville United Methodist Church**											
	Bioretention system	720	0.02	0.019	3	1,380	0.05	180	$5	SF	$900	10.3%
	Total Site Info	**720**	**0.02**	**0.019**	**3**	**1,380**	**0.05**				**$900**	**10.3%**
4	**Leesburg Post Office**											
	Pervious pavement	3,600	0.08	0.094	16	6,880	0.26	650	$25	SF	$16,250	37.6%
	Total Site Info	**3,600**	**0.08**	**0.094**	**16**	**6,880**	**0.26**				**$16,250**	**37.6%**
5	**Leesburg Volunteer Fire Company & City Hall**											
	Pervious pavement	2,580	0.06	0.067	11	4,930	0.19	1,940	$25	SF	$48,500	18.0%
	Rainwater harvesting	1,880	0.04	0.049	8	1,500	0.06	1,500	$2	gal	$3,000	13.1%
	Total Site Info	**4,460**	**0.10**	**0.116**	**19**	**6,430**	**0.25**				**$51,500**	**31.1%**
6	**Maurice River Road Company**											
	Bioretention systems	1,200	0.03	0.031	5	2,300	0.09	300	$5	SF	$1,500	3.8%
	Total Site Info	**1,200**	**0.03**	**0.031**	**5**	**2,300**	**0.09**				**$1,500**	**3.8%**
7	**Maurice River Township Municipal Court**											
	Bioretention systems	5,420	0.12	0.141	24	10,360	0.39	1,355	$5	SF	$6,775	6.9%
	Total Site Info	**5,420**	**0.12**	**0.141**	**24**	**10,360**	**0.39**				**$6,775**	**6.9%**
	MUSKEE CREEK SUBWATERSHED	**1,870**	**0.04**	**0.049**	**8**	**3,580**	**0.13**				**$2,350**	**49.9%**
8	**Calvary Bible Fellowship Church**											
	Bioretention systems	1,870	0.04	0.049	8	3,580	0.13	470	$5	SF	$2,350	49.9%
	Total Site Info	**1,870**	**0.04**	**0.049**	**8**	**3,580**	**0.13**				**$2,350**	**49.9%**

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	Unit Cost ($/unit)	Unit	Total Cost ($)	I.C. Treated %
	RIGGINS DITCH SUBWATERSHED	**14,560**	**0.33**	**0.379**	**64**	**22,860**	**0.86**				**$40,325**	**55.5%**
9	**Delmont Post Office**											
	Bioretention system	2,540	0.06	0.066	11	4,850	0.18	635	$5	SF	$3,175	14.2%
	Rainwater harvesting	4,530	0.10	0.118	20	3,700	0.14	3,700	$2	gal	$7,400	25.4%
	Total Site Info	**7,070**	**0.16**	**0.184**	**31**	**8,550**	**0.32**				**$10,575**	**39.6%**
10	**Delmont United Methodist Church**											
	Bioretention system	1,190	0.03	0.031	5	2,270	0.09	300	$5	SF	$1,500	14.2%
	Pervious pavement	6,300	0.14	0.164	27	12,040	0.45	1,130	$25	SF	$28,250	75.1%
	Total Site Info	**7,490**	**0.17**	**0.195**	**33**	**14,310**	**0.54**				**$29,750**	**89.3%**