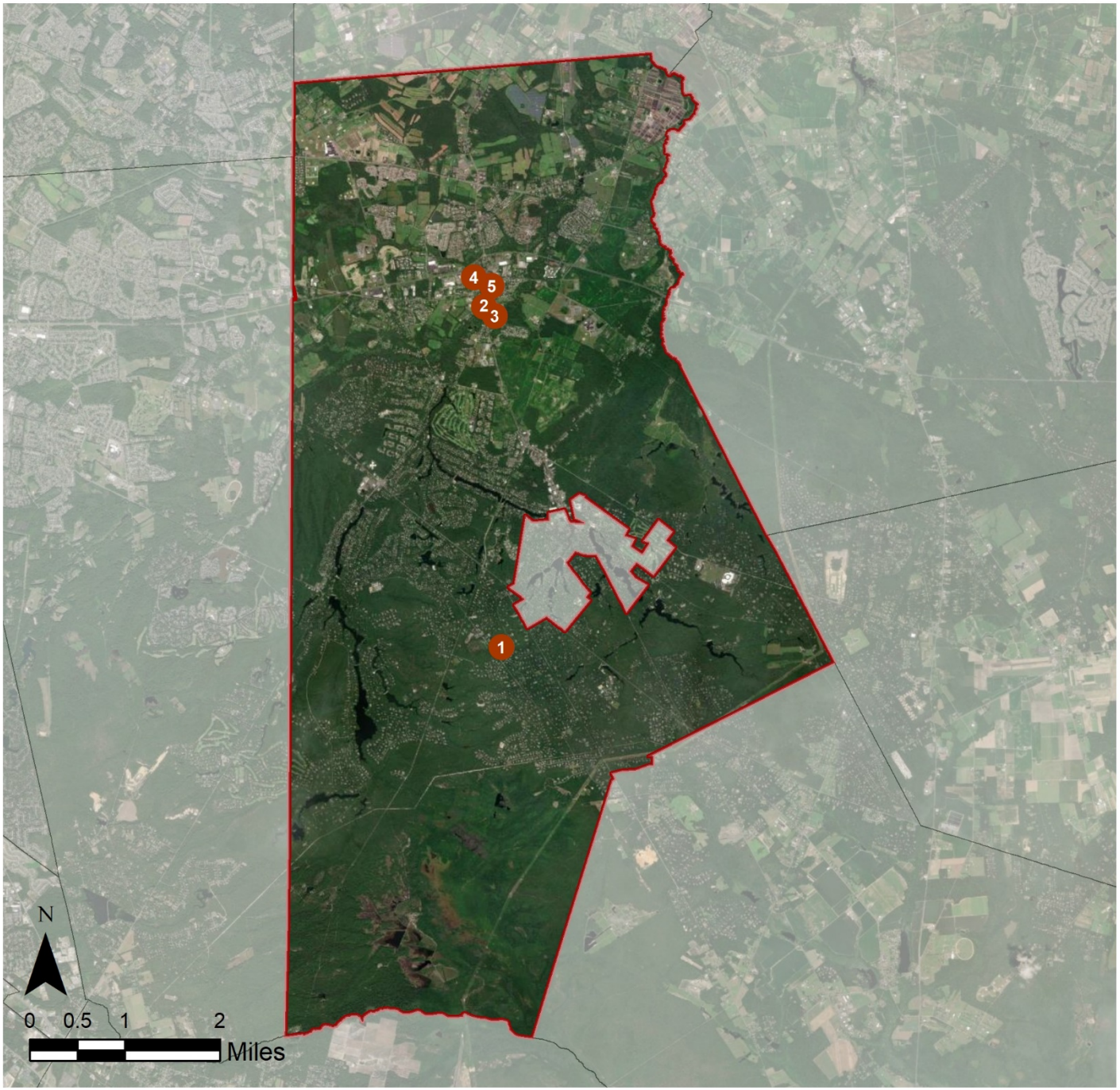
MEDFORD CITY: GREEN INFRASTRUCTURE SITES



SITES WITHIN THE HAYNES CREEK SUBWATERSHED

1. Bob Meyer Memorial Park

SITES WITHIN THE RANCOCAS CREEK SOUTH WEST BRANCH SUBWATERSHED

2. Chabad in Medford
3. Pinelands Branch Library
4. St. Mary of the Lakes School
5. Township of Medford Municipal Center

Bob Meyer Memorial Park

Subwatershed: Haynes Creek

Site Area: 551,175 sq. ft.

Address: 640 Gravelly Hollow Road
Medford, NJ 08055

Block and Lot: Block 6405.01, Lot 18

A rain garden can be installed in the low area east of the parking lot to capture, treat, and infiltrate the stormwater runoff from the parking area. Benefits include the filtering of the stormwater, providing a habitat to local wildlife, and creating an aesthetically pleasing educational park element. 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	117,295	5.7	59.2	538.5	0.091	3.22

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.041	7	3,060	0.11	395	$1,975

GREEN INFRASTRUCTURE RECOMMENDATIONS

Bob Meyer Memorial Park

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

0 30' 60'

Chabad in Medford

Subwatershed: Rancocas Creek Southwest Branch

Site Area: 58,280 sq. ft.

Address: 74 South Main Street Medford, NJ 08055

Block and Lot: Block 1705, Lots 8 & 9

A rain garden can be installed in the turfgrass area south of the driveway to capture runoff from the pavement and allow it to infiltrate. The bioretention system will also provide a habitat for the local wildlife. 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"
45	26,200	1.3	13.2	120.3	0.020	0.72

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	0.024	4	1,830	0.07	235	$1,175

GREEN INFRASTRUCTURE RECOMMENDATIONS

Chabad in Medford

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

0 25' 50'

Pinelands Branch Library

Subwatershed: Rancocas Creek South West Branch

Site Area: 17,370 sq. ft.

Address: 39 Allen Avenue
Medford, NJ 08055

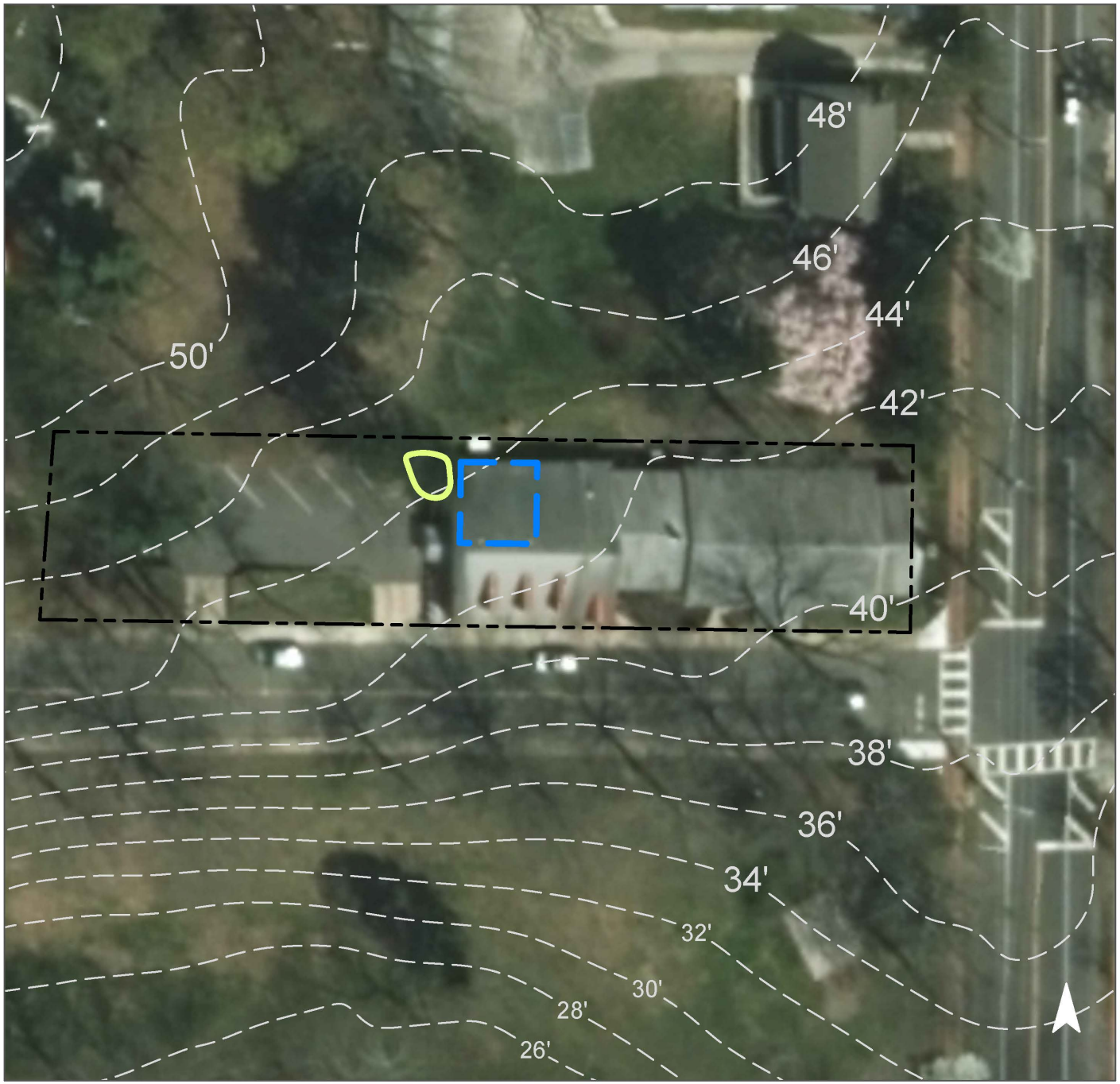
Block and Lot: Block 1705, Lots 6 & 7

A rain garden can be installed in the turfgrass area located at the northwest corner of the library by allowing the disconnected downspout to flow into the garden to capture rooftop runoff. The runoff would be filtered naturally as it permeates the ground through 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"
59	10,270	0.5	5.2	47.2	0.008	0.28

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	0.017	3	1,290	0.05	165	$825

GREEN INFRASTRUCTURE RECOMMENDATIONS



Pinelands Branch Library

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

0 25' 50'

St. Mary of the Lakes School

Subwatershed: Rancocas Creek Southwest Branch

Site Area: 510,260 sq. ft.

Address: 196 NJ-70
Medford, NJ 08055

Block and Lot: Block 1201, Lot 1.01

Rain gardens can be installed alongside the school at the northwest corner, northeast corner, and southwest corner of the building to capture stormwater runoff from the roof. A portion of the western parking lot can be replaced with pervious pavement to allow stormwater to infiltrate into the ground. 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"
51	261,125	12.6	131.9	1,198.9	0.203	7.16

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	0.143	24	10,680	0.40	1,375	$6,875
Pervious pavement	0.473	79	35,370	1.30	3,240	$81,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

St. Mary of the Lakes School

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

0 50' 100'

Township of Medford Municipal Center

Subwatershed: Rancocas Creek Southwest Branch

Site Area: 22,660 sq. ft.

Address: 17 North Main Street Medford, NJ 08055

Block and Lot: Block 1801 , Lot 4

A downspout planter box can be installed near the west entrance of the building to capture the stormwater from the downspout. A rain garden can be installed in the turfgrass area by the walkway to the east of the building to capture, treat, and infiltrate the stormwater runoff from the nearby parking lot.

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"
77	17,470	0.8	8.8	80.2	0.014	0.48

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	0.033	6	2,470	0.09	315	$1,575
Planter box	n/a	1	n/a	n/a	1 box	$1,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Township of Medford Municipal Center

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

0 25' 50'

Summary of Existing Conditions

	Subwatershed/Site Name/Total Site Info/GI Practice	Area (ac)	Area (SF)	Block	Lot	I.C. %	I.C. Area (ac)	I.C. Area (SF)	Existing Annual Loads (Commercial)			Runoff Volumes from I.C.		Runoff Volumes from I.C.	
									TP (lb/yr)	TN (lb/yr)	TSS (lb/yr)	Water Quality Storm (1.25" over 2-hours) (cu.ft.)	Annual (cu.ft.)	Water Quality Storm (1.25" over 2-hours) (Mgal)	Annual (Mgal)
	Haynes Creek Sites	**12.65**	**551,175**				**2.69**	**117,295**	**5.7**	**59.2**	**538.5**	**12,218**	**430,082**	**0.091**	**3.22**
1	**Bob Meyer Memorial Park**														
	Total Site Info	**12.65**	**551,175**	**6405.01**	**18**	**21.2809**	**2.69**	**117,295**	**5.7**	**59.2**	**538.5**	**12,218**	**430,082**	**0.091**	**3.22**
	Rancocas Creek Southwest Branch Sites	**13.97**	**608,570**				**7.23**	**315,065**	**15.2**	**159.1**	**1446.6**	**32,819**	**1,155,238**	**0.245**	**8.64**
2	**Chabad in Medford**														
	Total Site Info	**1.34**	**58,280**	**1705**	**8 & 9**	**44.9554**	**0.60**	**26,200**	**1.3**	**13.2**	**120.3**	**2,729**	**96,067**	**0.020**	**0.72**
3	**Pinelands Branch Library**														
	Total Site Info	**0.40**	**17,370**	**1705**	**6 & 7**	**59.1249**	**0.24**	**10,270**	**0.5**	**5.2**	**47.2**	**1,070**	**37,657**	**0.008**	**0.28**
4	**St. Mary of the Lakes School**														
	Total Site Info	**11.71**	**510,260**	**1201**	**1.01**	**51.1749**	**5.99**	**261,125**	**12.6**	**131.9**	**1198.9**	**27,201**	**957,458**	**0.203**	**7.16**
5	**Township of Medford Municipal Center**														
	Total Site Info	**0.52**	**22,660**	**1801**	**4**	**77.0962**	**0.40**	**17,470**	**0.8**	**8.8**	**80.2**	**1,820**	**64,057**	**0.014**	**0.48**

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 %
	Haynes Creek Sites	**1,570**	**0.04**	**0.041**	**7**	**3,060**	**0.11**				**$1,975**	**1%**
1	**Bob Meyer Memorial Park**											
	Bioretention system	1,570	0.04	0.041	7	3,060	0.11	395	$5	SF	$1,975	1%
	Total Site Info	**1,570**	**0.04**	**0.041**	**7**	**3,060**	**0.11**				**$1,975**	**1%**
	Rancocas Creek Southwest Branch Sites	**26,685**	**0.61**	**0.690**	**116**	**51,640**	**1.91**				**$92,450**	**8%**
2	**Chabad in Medford**											
	Bioretention system	935	0.02	0.024	4	1,830	0.07	235	$5	SF	$1,175	4%
	Total Site Info	**935**	**0.02**	**0.024**	**4**	**1,830**	**0.07**				**$1,175**	**4%**
3	**Pinelands Branch Library**											
	Bioretention system	660	0.02	0.017	3	1,290	0.05	165	$5	SF	$825	6%
	Total Site Info	**660**	**0.02**	**0.017**	**3**	**1,290**	**0.05**				**$825**	**6%**
4	**St. Mary of the Lakes School**											
	Bioretention systems	5,480	0.13	0.143	24	10,680	0.40	1,375	$5	SF	$6,875	2%
	Pervious pavement	18,145	0.42	0.473	79	35,370	1.30	3,240	$25	SF	$81,000	7%
	Total Site Info	**23,625**	**0.54**	**0.616**	**103**	**46,050**	**1.70**				**$87,875**	**9%**
5	**Township of Medford Municipal Center**											
	Bioretention system	1,265	0.03	0.033	6	2,470	0.09	315	$5	SF	$1,575	7%
	Planter box	200	0.00	n/a	1	n/a	n/a	1	$1,000	box	$1,000	1%
	Total Site Info	**1,465**	**0.03**	**0.033**	**6**	**2,470**	**0.09**				**$2,575**	**8%**