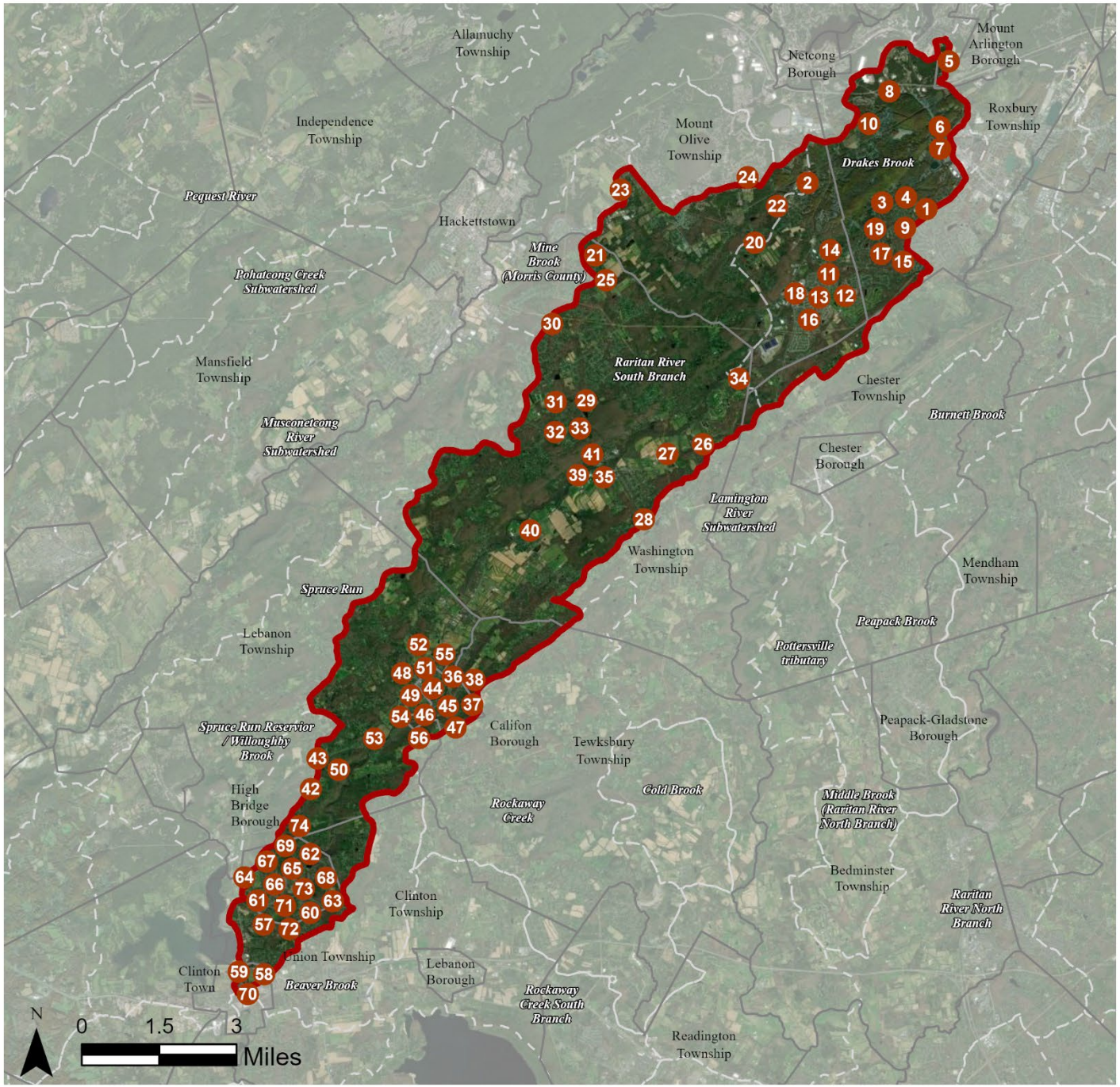
Appendix C

Concept Plans for Potential Green Infrastructure Projects

SOUTH BRANCH RARITAN RIVER WATERSHED: GREEN INFRASTRUCTURE SITES



1. American Christian School-South Campus
2. Fun-N-Friends Nursery School
3. Holy Wisdom Byzantine Catholic Church
4. Jefferson Elementary School
5. Lake Rogerene Fire Department
6. Ledgewood Baptist Church
7. Ledgewood Historic Park
8. Roxbury Township Clerk and Police Department
9. St. Dunstan's Episcopal Church
10. The Church of Jesus Christ of Latter-Day Saints
11. Calvary Bible Chapel
12. Chabad Jewish Center of Mount
13. Flanders Park
14. Flanders United Methodist Church & Thrift Shop
15. Kiwanis Park
16. Mountain View Elementary School
17. Roxbury Community Garden
18. St. Thomas Orthodox Church
19. Temple Shalom
20. Tinc Road School
21. Drakestown United Methodist Church
22. Mount Olive High School
23. Sandshore Elementary School
24. Turkey Brook Park
25. Benedict A. Cucinella School
26. Immanuel Lutheran Church
27. Long Valley Presbyterian Church
28. Old Farmers Road Elementary School
29. Schooleys Mountain Park Parking
30. St. Mark the Evangelist Roman Catholic Church
31. Washington Township Department of Public Works
32. Washington Township Police Department
33. Washington Township Public Library and Senior Citizen Center
34. West Morris Central High School
35. Zion Lutheran Church and Parish Center
36. Califon Borough Elementary School
37. Califon First Aid Squad
38. Califon Island Park
39. Long Valley Middle School
40. St. Luke Parish
41. Washington Township Municipal Building
42. Body of Christ Ministries
43. Bunnyvale Library
44. Califon General Store
45. Califon Municipal Office
46. Califon Train Station
47. Califon United Methodist Church
48. Califon Wine and Spirits
49. Coughlin Funeral Home
50. Groendyke Associates
51. James M. Murray CPA
52. Lower Valley Presbyterian Church
53. Oldwiick Village
54. St. John Neumann Roman Catholic Church
55. Staianos Furniture
56. United States Postal Service
57. Borough of High Bridge Municipal Buildings
58. Clinton Presbyterian Church
59. Clinton United Methodist Church
60. East Main Street Alley
61. High Bridge Department of Works
62. High Bridge Elementary School
63. High Bridge Fire Department
64. High Bridge Gold Club
65. High Bridge Middle School
66. High Bridge Public Library
67. High Bridge Reformed Church
68. High Bridge United Methodist Church
69. Hilltop Deli & Catering
70. Hunterdon Art Museum
71. St. Joseph Church
72. Union Forge Park
73. United States Postal Service
74. Voorhees Residential Community Home

1. AMERICAN CHRISTIAN SCHOOL- SOUTH CAMPUS

Subwatershed: Drakes Brook

HUC14 ID: 02030105010010

Site Area: 193,601 sq. ft.

Address: 126 South Hillside Avenue
Succasunna, NJ 07876

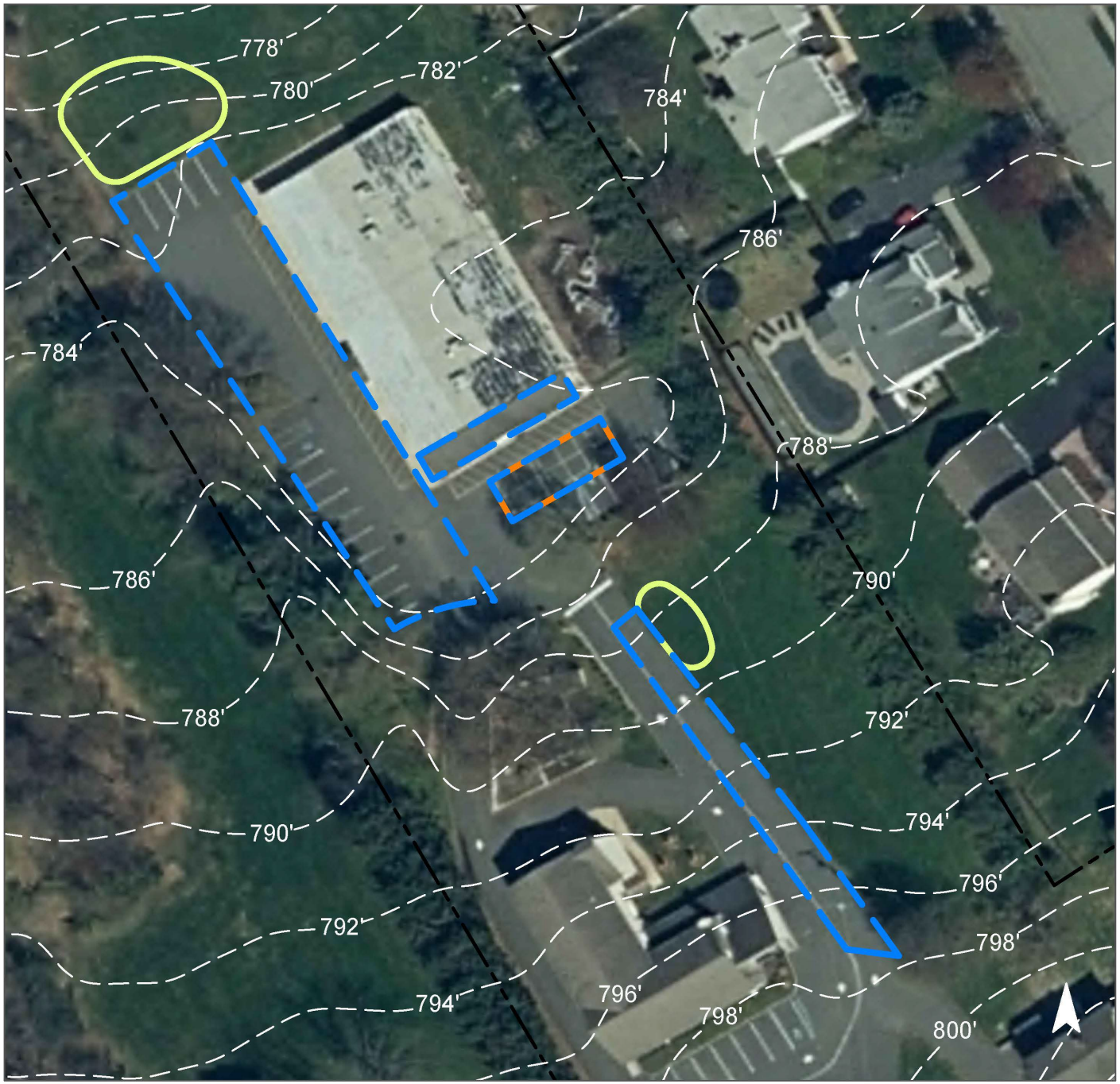
Block and Lot: Block 4601, Lot 13

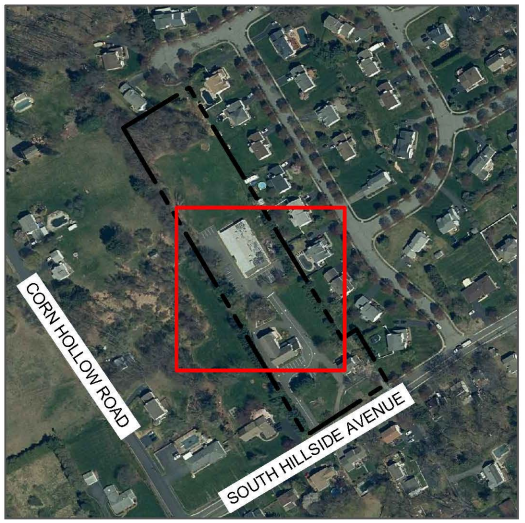
The pavement in the front of the building can be converted to porous pavement to capture and infiltrate stormwater runoff from the roof via already disconnected downspouts; the western downspout may require redirection towards the porous pavement. A rain garden with a curb cut can be installed in the grass area near the northwest corner of the building and a rain garden with a trench drain can be installed south of the building to capture, treat, and infiltrate stormwater runoff from the pavement. 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 50"
31	60,281	2.9	30.4	276.8	0.047	1.88

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	10,960	0.325	48	22,860	0.86	2,740	$27,400
Pervious pavement	1,615	0.048	8	3,370	0.13	900	$22,500

GREEN INFRASTRUCTURE RECOMMENDATIONS





American Christian School - South Campus

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 30' 60'

2. FUN-N-FRIENDS NURSERY SCHOOL

Subwatershed: **Drakes Brook**

HUC14 ID: **02030105010010**

Site Area: **225,845 sq. ft.**

Address: **58 Drakesdale Road**
Flanders, NJ 07836

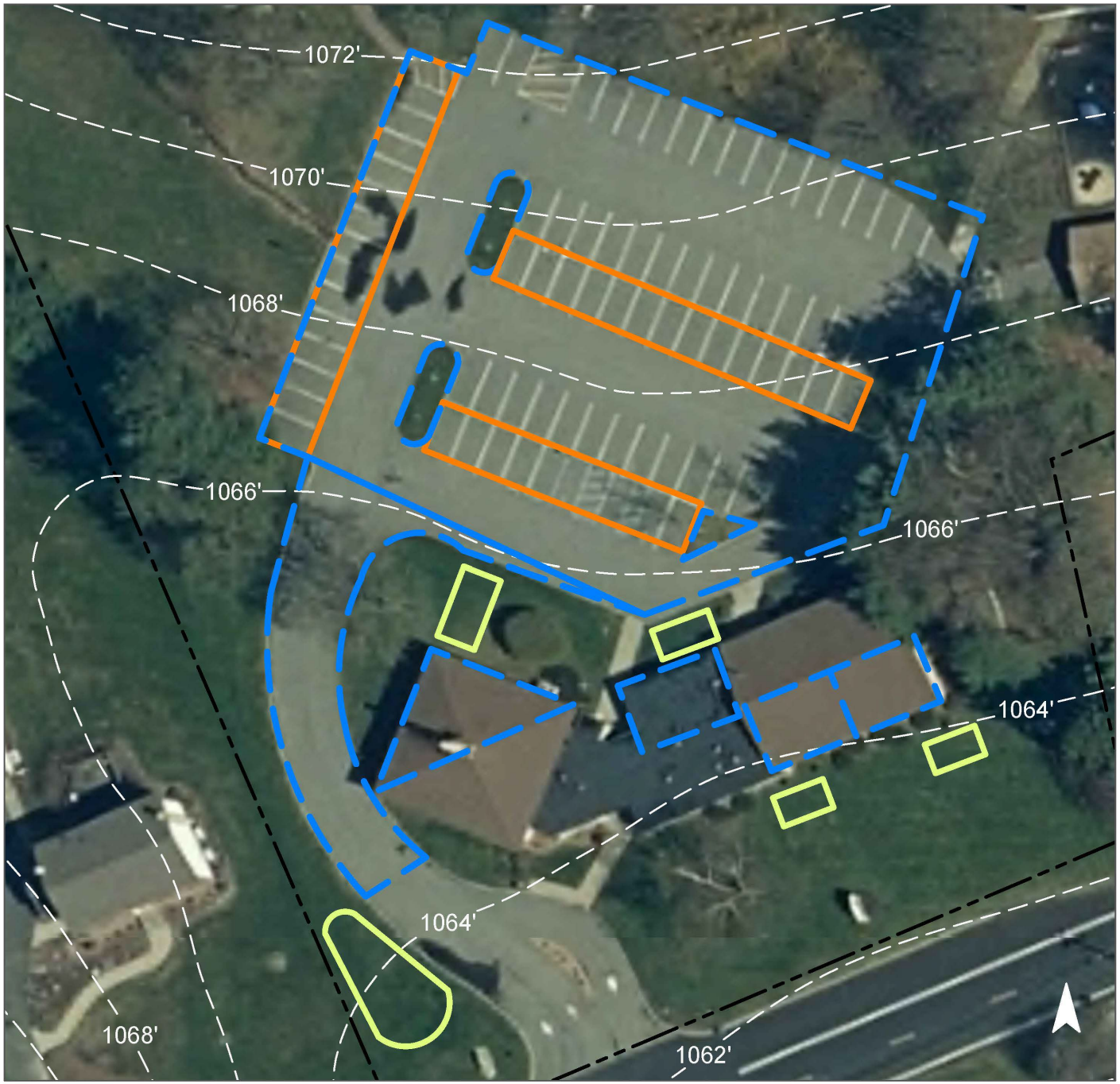
Block and Lot: **Block 4500, Lot 27**

Rain gardens can be installed in multiple grass areas around the property to capture, treat, and infiltrate stormwater runoff from the rooftops and the driveway. Downspout redirections and disconnections will be required for some of these raingardens. A gutter system will need to be installed on the western section of the building for the northwestern rain garden. A trench train and curb cut will be needed for the southwestern rain garden. Existing parking spaces to the south and west of the lot can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt. 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 50"
24	55,191	2.7	27.9	253.4	0.043	1.72

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	7,270	0.215	32	15,160	0.57	1,825	$18,250
Pervious pavement	28,570	0.846	125	59,590	2.24	6,020	$150,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



Fun-N-Friends Nursery School

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 25' 50'

3. HOLY WISDOM BYZANTINE CATHOLIC CHURCH

Subwatershed: **Drakes Brook**

HUC14 ID: **02030105010010**

Site Area: **393,578 sq. ft.**

Address: **197 Emmans Road**
Roxbury, NJ 07836

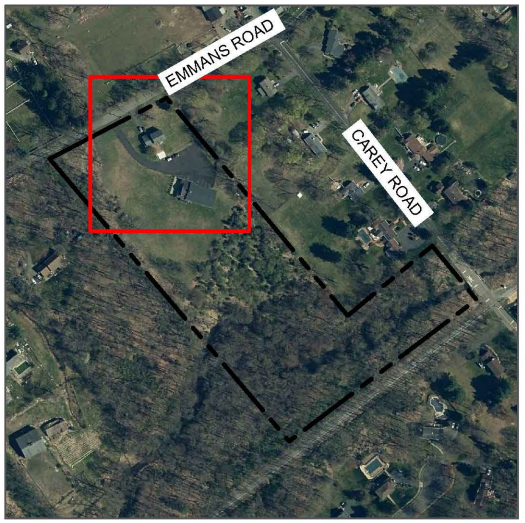
Block and Lot: **Block 5701, Lots 8 & 9**

Parking spaces in the lot next to the southeast building can be converted to porous pavement to capture and infiltrate stormwater runoff from the asphalt and rooftop via already disconnected downspouts. Rain gardens can be installed in multiple grass areas around the property to capture, treat, and infiltrate stormwater runoff from the roofs and pavement. Trench drains and downspout disconnection and redirection will be required for some of these gardens. 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 50"
7	27,418	1.3	13.8	125.9	0.021	0.85

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	4,340	0.129	19	9,050	0.34	1,090	$10,900
Pervious pavement	3,070	0.091	13	6,400	0.24	1,790	$44,750

GREEN INFRASTRUCTURE RECOMMENDATIONS



Holy Wisdom Byzantine Catholic Church

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 30' 60'

4. JEFFERSON ELEMENTARY SCHOOL

Subwatershed: **Drakes Brook**

Site Area: **628,219 sq. ft.**

Address: **35 Corn Hollow Road**
Succasunna, NJ 07876

Block and Lot: **Block 4501, Lot 10**

Parking spaces can be replaced with pervious pavement to capture and infiltrate stormwater. Downspout planter boxes can be installed on multiple locations north of the building. A rain garden can be installed in the parking island to capture, treat, and infiltrate additional stomwater runoff. Downspout planter boxes can be installed near the entrances to capture rooftop runoff and provide visual interest. 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"
31	192,288	9.3	97.1	882.9	0.150	5.27

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.034	6	2,480	0.09	740	$3,700
Pervious pavement	0.462	77	33,940	1.28	178	$4,450
Planter boxes	n/a	5	n/a	n/a	8 (boxes)	$8,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Jefferson Elementary School

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

0 50' 100'

5. LAKE ROGERENE FIRE DEPARTMENT

Subwatershed: Drakes Brook

HUC14 ID: 02030105010010

Site Area: 11,949 sq. ft.

Address: 173 Orben Drive
Landing, NJ 07850

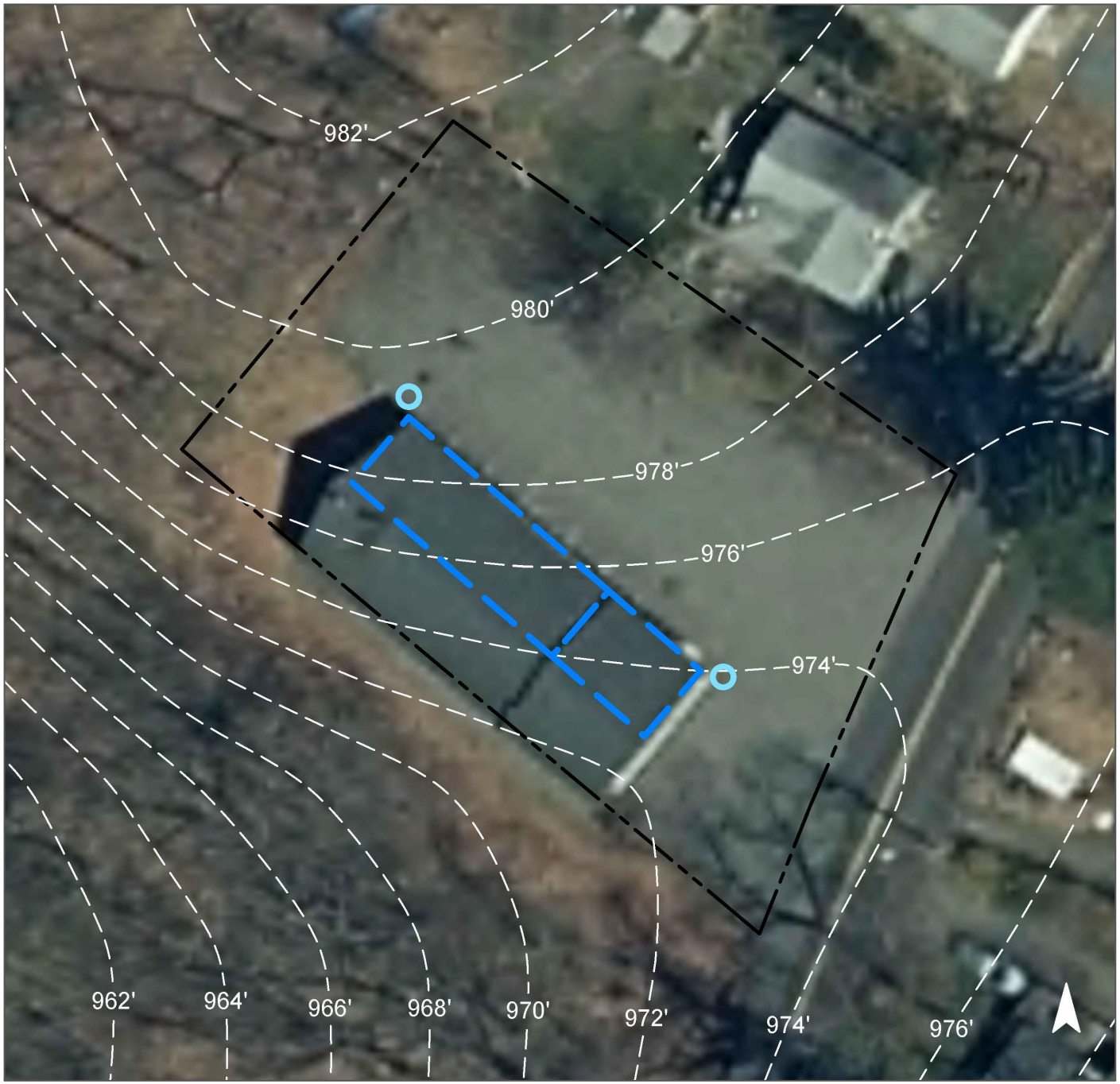
Block and Lot: Block 87, Lot 6

Cisterns can be installed to the northeast and southeast of the building to divert and detain the stormwater runoff from the rooftop for later non-potable reuse such as washing vehicles.

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 50"
83	9,910	0.5	5.0	45.5	0.008	0.31

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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
Rainwater harvesting	1,295	0.038	6	1,100	0.04	1,100 (gal)	$3,300

GREEN INFRASTRUCTURE RECOMMENDATIONS



Lake Rogerene Fire Department

- rainwater harvesting
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 15' 30'

6. LEDGEWOOD BAPTIST CHURCH

Subwatershed: Drakes Brook

HUC14 ID: 02030105010010

Site Area: 100,592 sq. ft.

Address: 233 Main Street
Ledgewood, NJ 07852

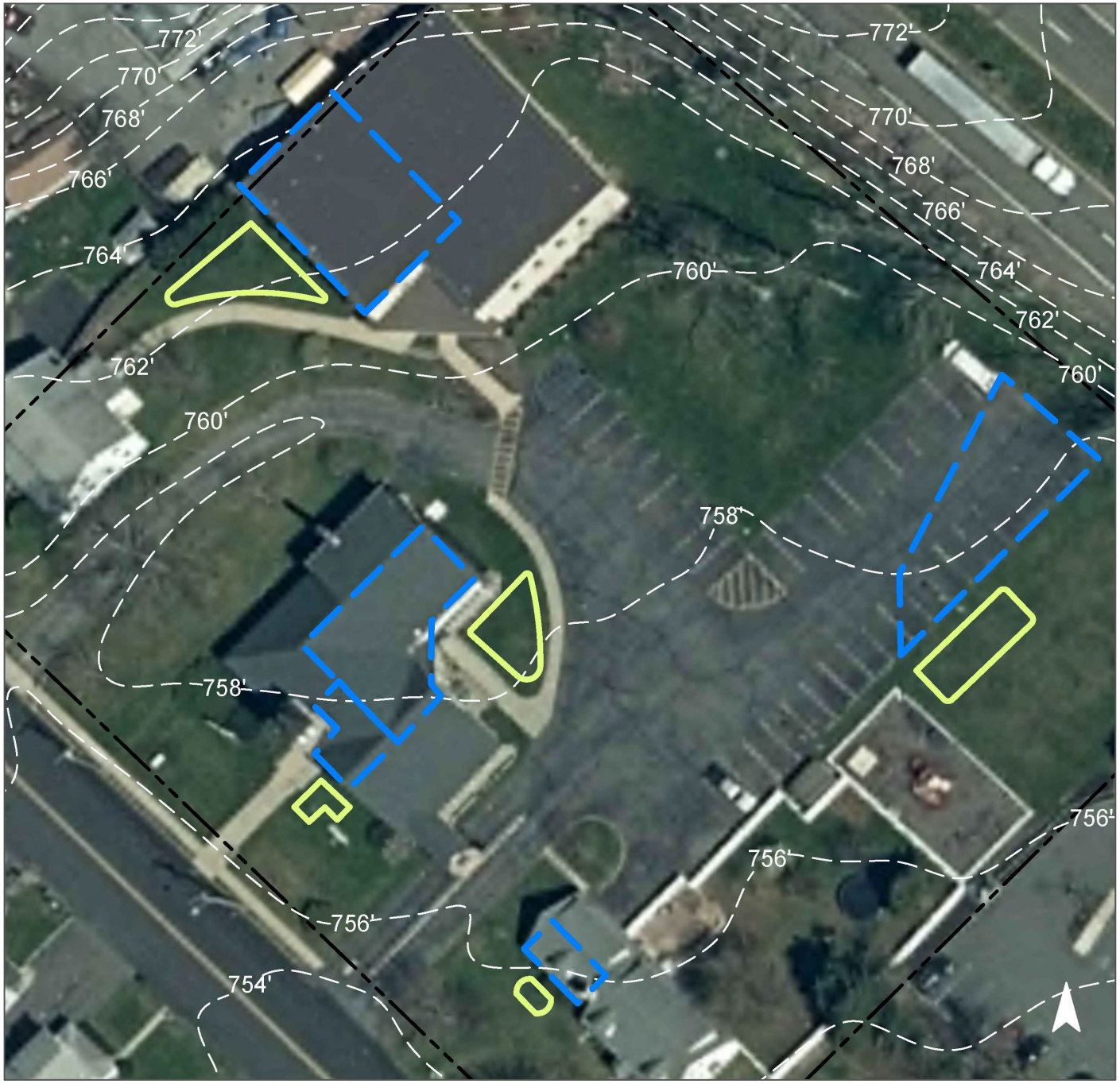
Block and Lot: Block 6406, Lot 5.01

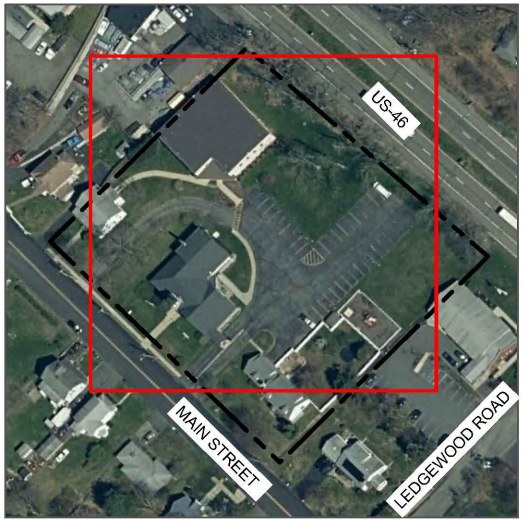
Four rain gardens that require downspout disconnection and redirection can be installed in the grass areas around the property building to capture, treat, and infiltrate stormwater runoff from the roofs. One rain garden can be installed in the grass area on the east side of the site to capture, treat, and infiltrate stormwater runoff from the parking lot. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 50"
57	57,354	2.8	29.0	263.3	0.045	1.79

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	7,585	0.225	32	15,820	0.59	1,895	$18,950

GREEN INFRASTRUCTURE RECOMMENDATIONS





Ledgewood Baptist Church

- bioretention system
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 25' 50'

7. LEDGEWOOD HISTORIC PARK

Subwatershed: Drakes Brook

HUC14 ID: 02030105010010

Site Area: 72,124 sq. ft.

Address: 211-209 East Main Street
Ledgewood, NJ 07852

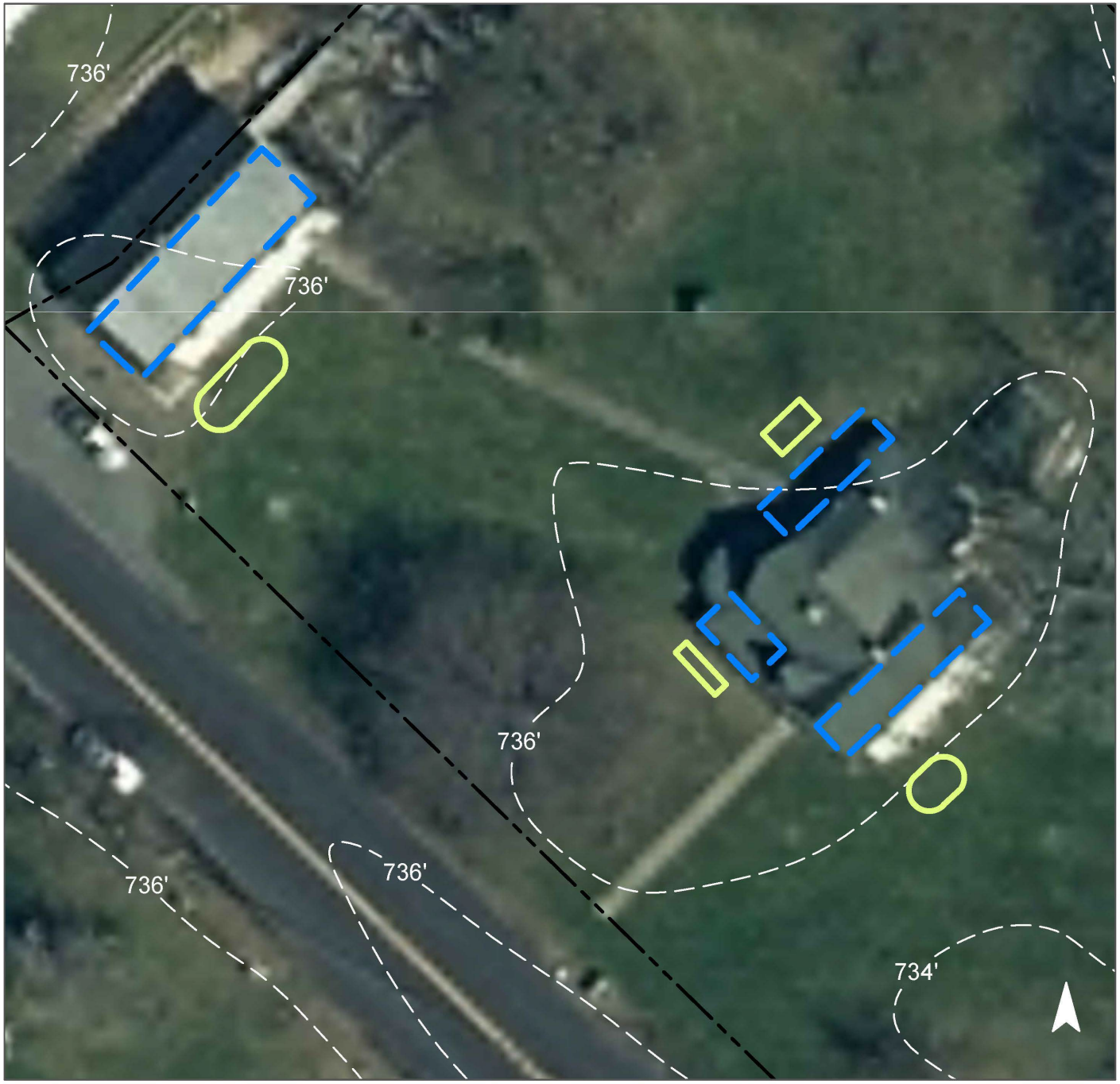
Block and Lot: Block 6408, Lot 2

A rain garden can be installed in the grass area next to the west building to capture, treat, and infiltrate stormwater runoff from the roof. Three rain gardens, one of which requires downspout disconnection, can be installed next to the east building to capture, treat, and infiltrate stormwater runoff from the roof. 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 50"
13	9,086	0.4	4.6	41.7	0.007	0.28

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	1,370	0.041	6	2,860	0.11	345	$3,450

GREEN INFRASTRUCTURE RECOMMENDATIONS



Ledgewood Historic Park

- bioretention system
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 15' 30'

8. ROXBURY TOWNSHIP COURT CLERK & POLICE DEPARTMENT

Subwatershed: Drakes Brook

HUC14 ID: 02030105010010

Site Area: 227,319 sq. ft.

Address: 1715 US-46
Ledgewood, NJ 07852

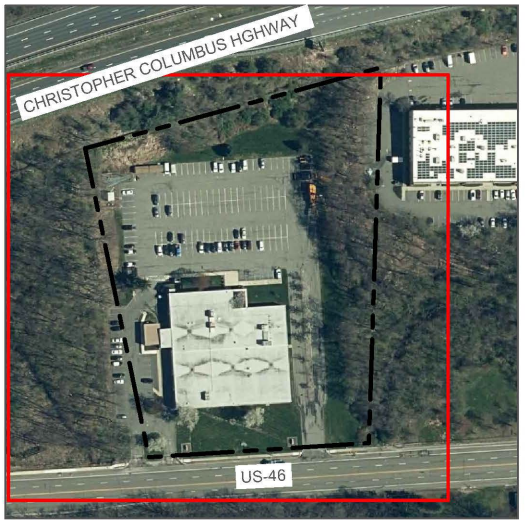
Block and Lot: Block 9603, Lot 5

Three rain gardens can be installed in the grass areas on the east and west sides at the front of the building to capture, treat, and infiltrate stormwater runoff from the pavement. The gardens will require curb cuts and trench drains. Parking spaces on the west side of the building and behind the building can be converted to porous pavement to capture and infiltrate stormwater runoff from the 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 50"
55	125,744	6.1	63.5	577.3	0.098	3.92

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	10,635	0.315	46	22,190	0.83	2,660	$26,600
Pervious pavement	36,420	1.078	160	75,970	2.85	6,505	$162,625

GREEN INFRASTRUCTURE RECOMMENDATIONS



Roxbury Township Court Clerk and Police Department

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 50' 100'

9. ST. DUNSTAN'S EPISCOPAL CHURCH

Subwatershed: Drakes Brook

HUC14 ID: 02030105010010

Site Area: 214,839 sq. ft.

Address: 179 South Hillside Avenue
Succasunna, NJ 07876

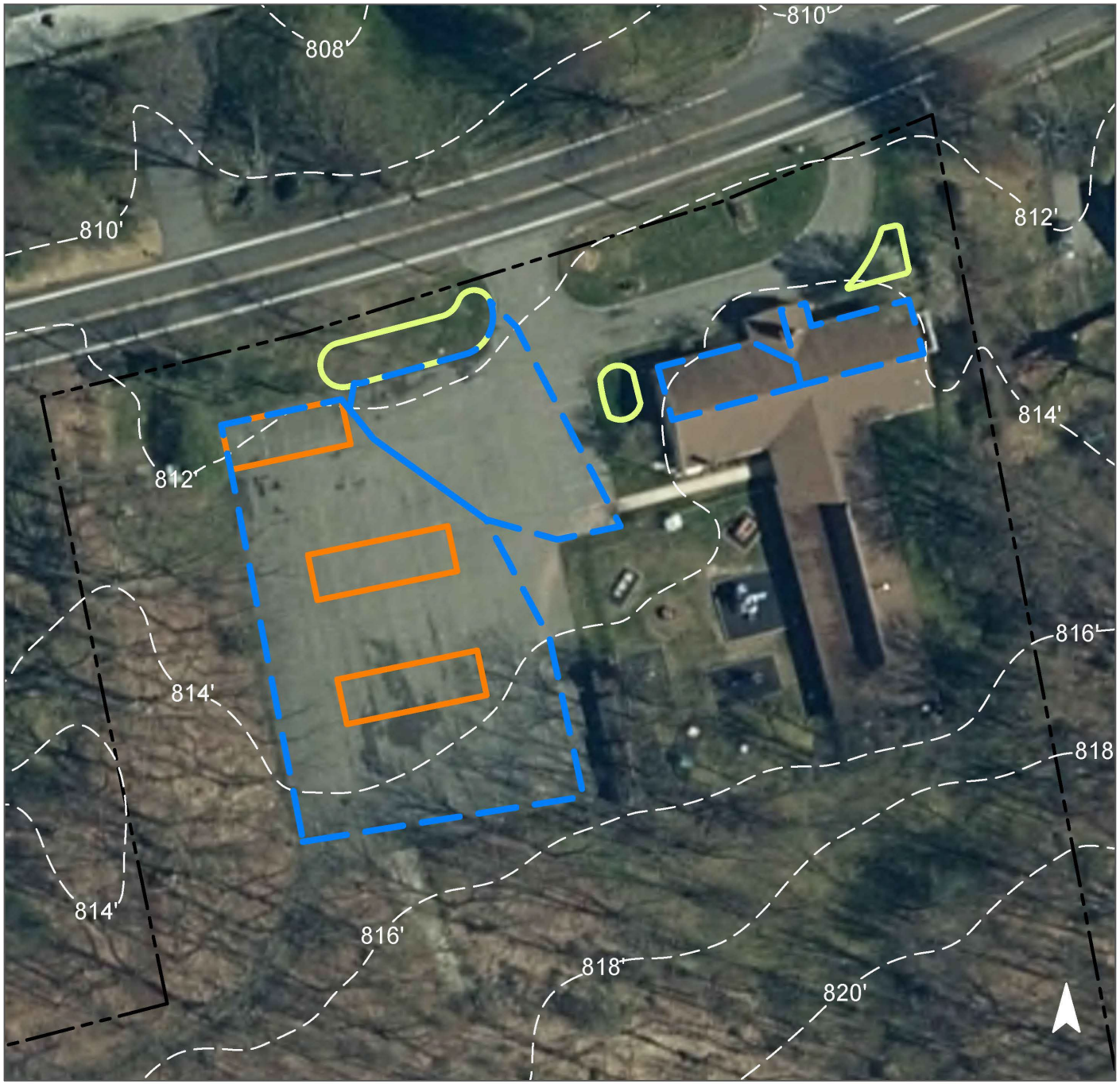
Block and Lot: Block 2904, Lot 2

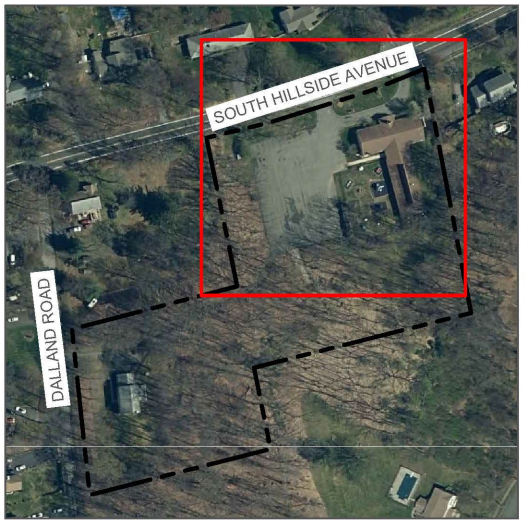
Parking spaces in the lot can be converted to porous pavement using trench drains to redirect, capture and infiltrate stormwater runoff from the pavement. A rain garden with a curb cut can be installed in the grass area near the entrance of the parking lot to capture, treat, and infiltrate stormwater runoff from the pavement. Two rain gardens can be installed near the building entrance to capture, treat, and infiltrate stormwater runoff from the roof via already disconnected downspouts that will require redirection. 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 50"
19	41,200	2.0	20.8	189.2	0.032	1.28

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	7,870	0.233	34	16,420	0.62	1,970	$19,700
Pervious pavement	15,945	0.472	70	33,260	1.25	2,885	$72,125

GREEN INFRASTRUCTURE RECOMMENDATIONS





St. Dunstan's Episcopal Church

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 30' 60'

10. THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Subwatershed: Drakes Brook

HUC14 ID: 02030105010010

Site Area: 251,582 sq. ft.

Address: 156 Mountain Road
Ledgewood, NJ 07852

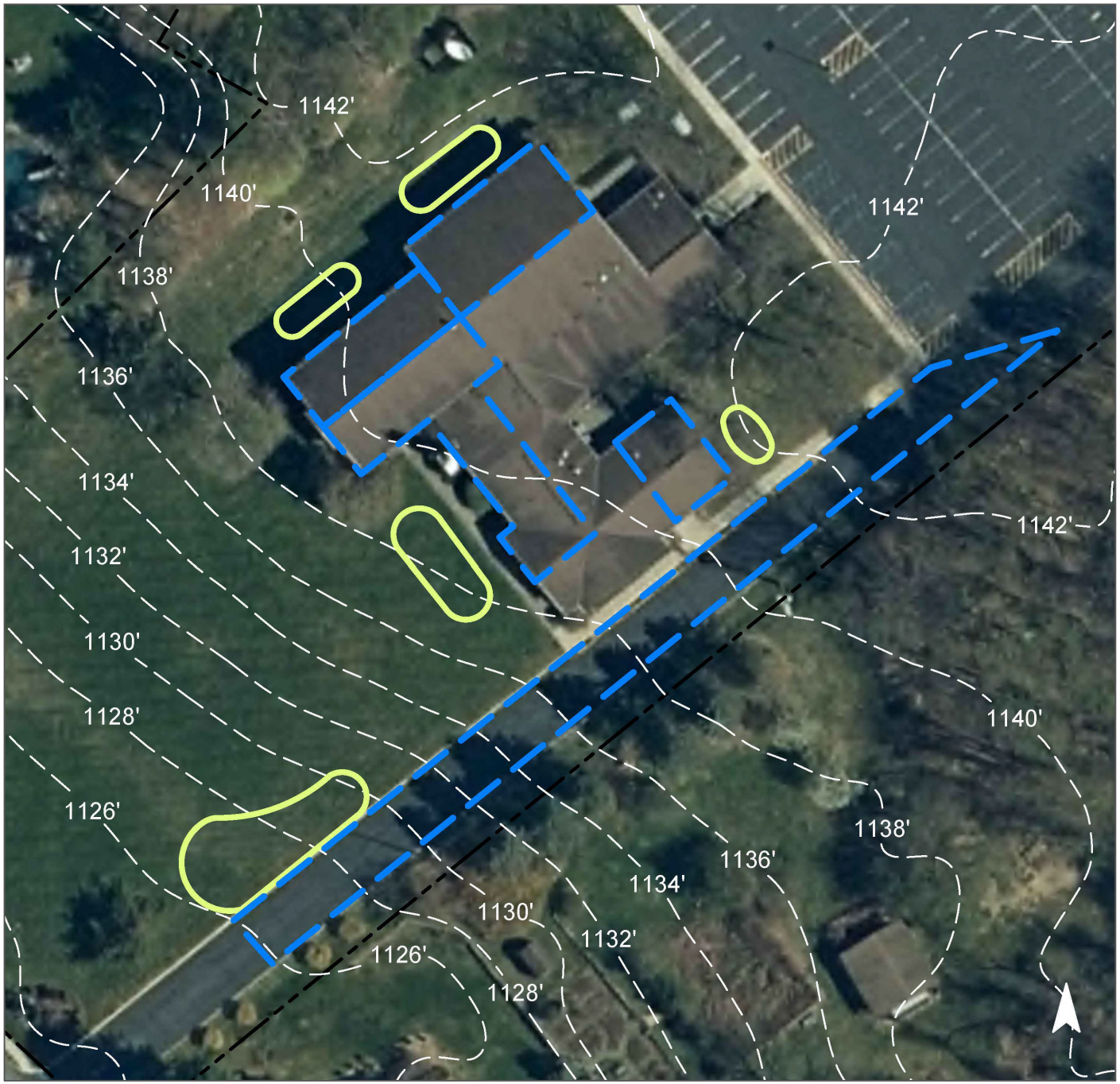
Block and Lot: Block 8201, Lot 9

Several rain gardens that require downspout disconnection and redirection can be installed in the grass areas around the building to capture, treat, and infiltrate stormwater runoff from the roof. One rain garden that requires a curb cut and trench drain can be installed in the grass area southwest of the building to capture, treat, and infiltrate stormwater runoff from the pavement. 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 50"
39	98,786	4.8	49.9	453.6	0.077	3.08

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	16,651	0.493	72	34,730	1.31	4,170	$41,700

GREEN INFRASTRUCTURE RECOMMENDATIONS



The Church of Jesus Christ of Latter-Day Saints

- bioretention system
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 30' 60'

11. CALVARY BIBLE CHAPEL

Subwatershed: Drakes Brook

HUC14 ID: 02030105010020

Site Area: 37,042 sq. ft.

Address: 76 Main Street
Flanders, NJ 07836

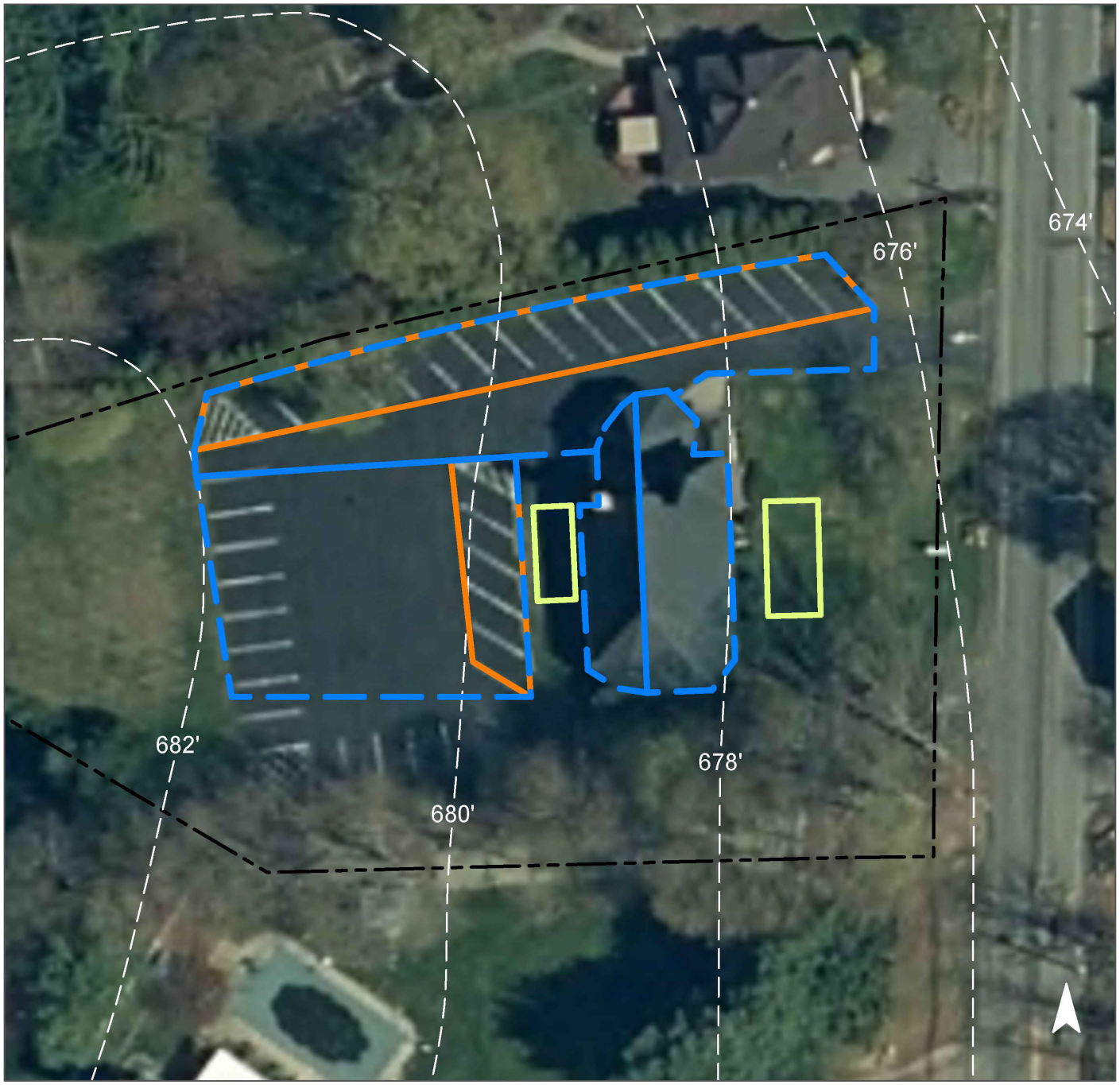
Block and Lot: Block 5400, Lot 22

Rain gardens can be installed to the east and west of the building to capture, treat, and infiltrate stormwater runoff from the rooftop. This will require the installation of a gutter system on the building. Existing parking spaces to the west and north of the building can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt. 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 50"
45	16,792	0.8	8.5	77.1	0.013	0.52

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	2,635	0.078	11	5,500	0.21	660	$6,600
Pervious pavement	10,235	0.303	44	21,350	0.80	3,860	$96,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



Calvary Bible Chapel

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 20' 40'

12. CHABAD JEWISH CENTER OF MT. OLIVE

Subwatershed: **Drakes Brook**

HUC14 ID: **02030105010020**

Site Area: **101,680 sq. ft.**

Address: **58 Pleasant Hill Road**
Flanders, NJ 07836

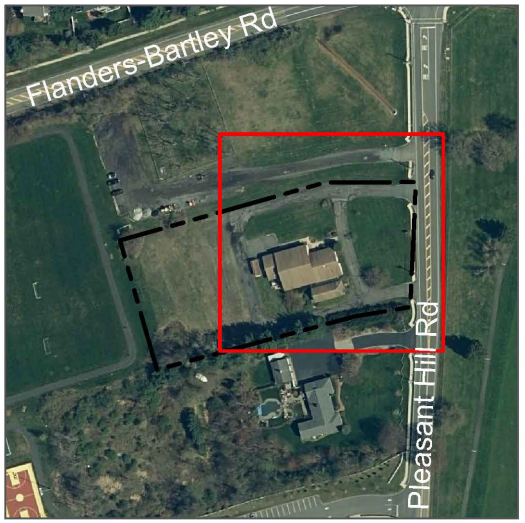
Block and Lot: **Block 6000, Lot 11**

Rain gardens can be installed to the north and east of the building to capture, treat, and infiltrate stormwater runoff from the rooftop and the driveway. This will require downspout redirections beneath the sidewalk and the driveway, as well as trench drains. A cistern can be installed to the northwest of the building to divert and detain the stormwater runoff from the rooftop for later non-potable reuse such as watering the landscaping vegetation. 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 50"
41	41,364	2.0	20.9	189.9	0.032	1.29

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	6,175	0.183	27	12,880	0.48	1,545	$15,450
Rainwater harvesting	380	0.011	2	300	0.01	300 (gal)	$900

GREEN INFRASTRUCTURE RECOMMENDATIONS



Chabad Jewish Center of Mt. Olive

- bioretention system
- rainwater harvesting
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 25' 50'

13. FLANDERS PARK

Subwatershed: Drakes Brook

HUC14 ID: 02030105010020

Site Area: 830,055 sq. ft.

Address: 40 Flanders-Bartley Road
Flanders, NJ 07836

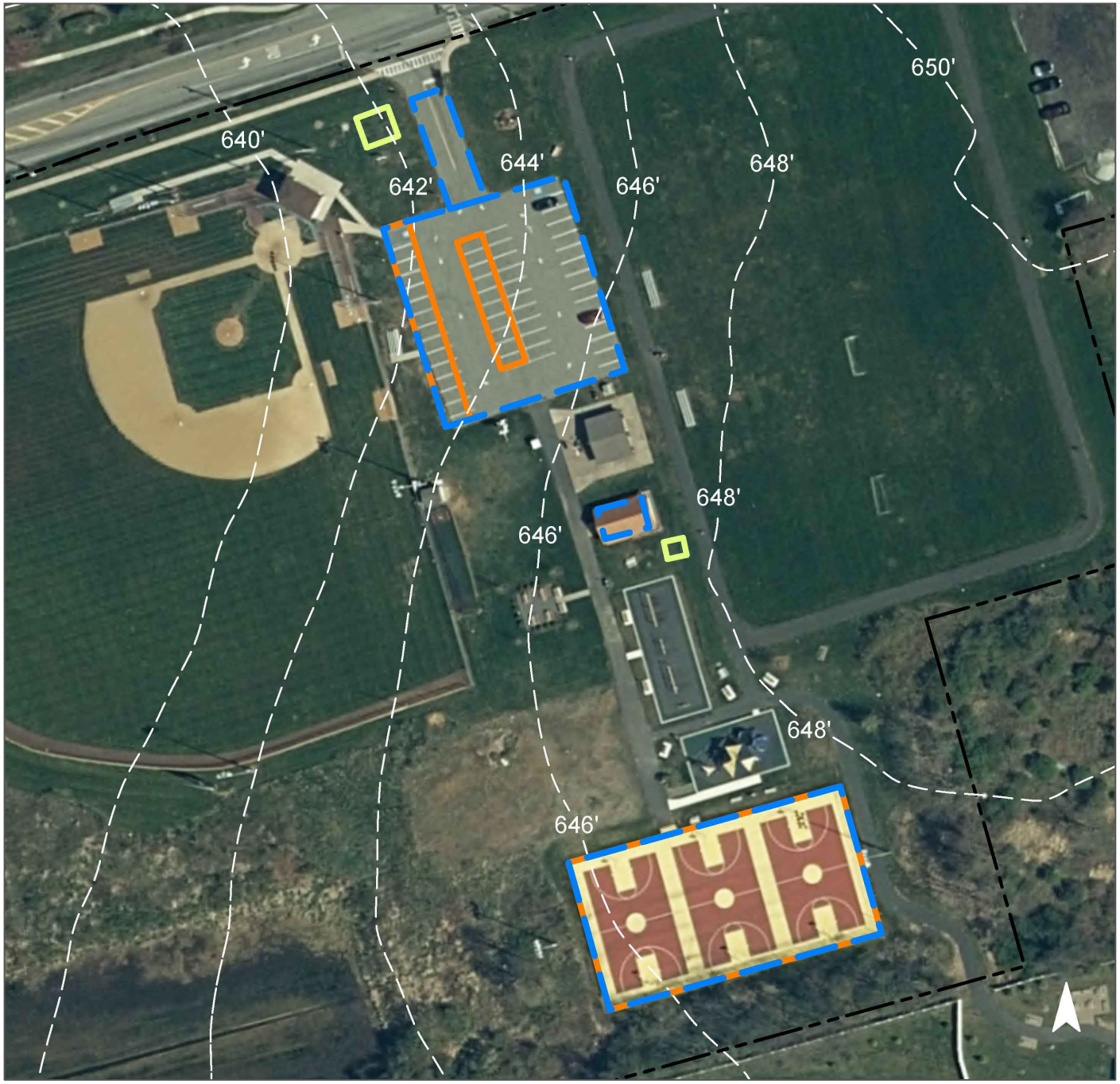
Block and Lot: Block 6000, Lots 12, 12.03, 12.04

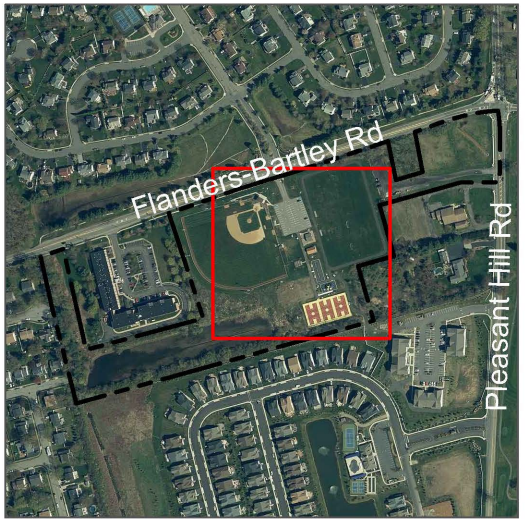
A rain garden can be installed to the southeast corner of the pavilion to capture, treat, and infiltrate stormwater runoff from the rooftop. A gutter system will need to be installed. Another rain garden can be installed to the west of the driveway entrance to capture, treat, and infiltrate stormwater runoff from the asphalt. A trench drain will be required. The rain garden can be installed near the existing catch basin, which can be used as an overflow. Existing parking spaces to the west of the lot can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt. The basketball courts can be converted to pervious pavement to capture and infiltrate stormwater runoff from the courts. 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 50"
13	109,178	5.3	55.1	501.3	0.085	3.40

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	2,405	0.071	11	5,020	0.19	600	$6,000
Pervious pavement	35,095	1.039	154	73,200	2.75	22,310	$557,750

GREEN INFRASTRUCTURE RECOMMENDATIONS





Flanders Park

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 50' 100'

14. FLANDERS UNITED METHODIST CHURCH & THRIFT SHOP

Subwatershed: Drakes Brook

HUC14 ID: 02030105010020

Site Area: 59,170 sq. ft.

Address: 4 Park Place
Flanders, NJ 07836

Block and Lot: Block 5501, Lots 17 & 17.01

Rain gardens can be installed in multiple grass areas around the buildings using the existing disconnected downspouts to capture, treat, and infiltrate stormwater runoff from the rooftops. Some of the disconnected downspouts will need to be extended to the rain gardens. The existing parking spaces to the north of the thrift shop building can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt. 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 50"
50	29,335	1.4	14.8	134.7	0.023	0.91

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	2,825	0.084	11	5,890	0.22	710	$7,100
Pervious pavement	6,415	0.190	29	13,380	0.50	1,600	$40,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Flanders United Methodist Church & Thrift Shop

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 20' 40'

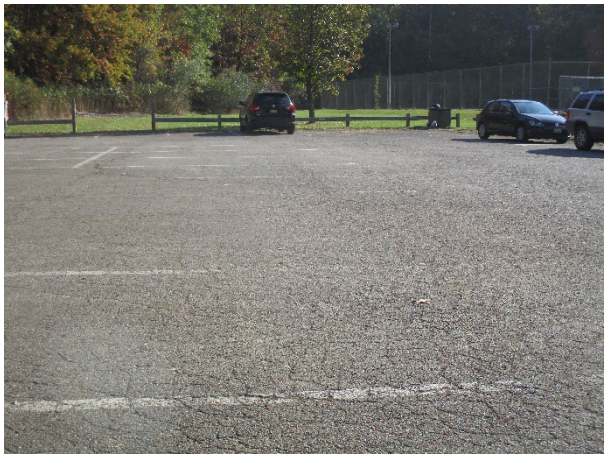
15. KIWANIS PARK

Subwatershed: **Drakes Brook**

Site Area: **4,578,278 sq. ft.**

Address: **9 Makin Lane**
Succasunna, NJ 07876

Block and Lot: **Block 901, Lot 19**



Parking spaces can be replaced with pervious pavement on the southernmost parking strip in the lot to capture and infiltrate stormwater. A rain garden can be installed near the tennis court to capture 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"
2	88,107	4.2	44.5	404.5	0.069	2.42

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.066	11	4,820	0.18	1,630	$8,150
Pervious pavement	0.505	85	37,040	1.39	3,460	$86,500

GREEN INFRASTRUCTURE RECOMMENDATIONS

Kiwanis Park

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

0 30' 60'

16. MOUNTAIN VIEW ELEMENTARY SCHOOL

Subwatershed: Drakes Brook

HUC14 ID: 02030105010020

Site Area: 867,709 sq. ft.

Address: 118 Clover Hill Drive
Flanders, NJ 07836

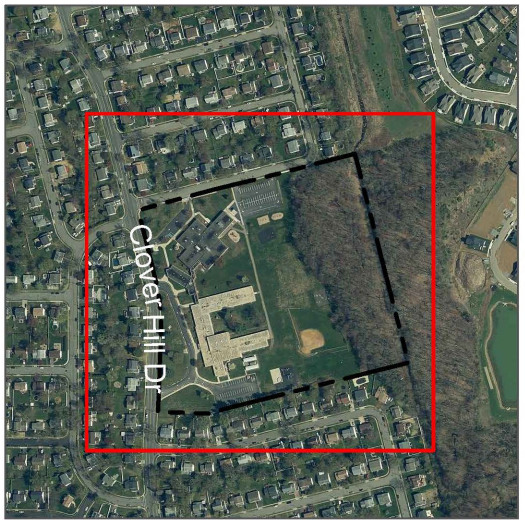
Block and Lot: Block 6208, Lot 24

Rain gardens can be installed in multiple grass areas around the property to capture, treat, and infiltrate stormwater runoff from the driveways and the southern parking lot. Curb cuts and a trench drain will be required for some of these rain gardens. Existing parking spaces to the north of the northern lot can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt. 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 50"
27	237,638	11.5	120.0	1,091.1	0.185	7.41

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	29,090	0.861	127	60,680	2.28	7,270	$72,700
Pervious pavement	17,060	0.505	74	35,580	1.34	4,715	$117,875

GREEN INFRASTRUCTURE RECOMMENDATIONS



Mountain View Elementary School

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 100' 200'

17.ROXBURY COMMUNITY GARDEN

Subwatershed: **Drakes Brook**

Site Area: **371,852 sq. ft.**

Address: **281 Eyland Avenue**
Succasunna, NJ 07876

Block and Lot: **Block 2802, Lot 5**

A cistern can be installed to capture stormwater from the roof of the shed in front of the garden, and the water can be reused for watering plants or 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"
4	16,186	0.8	8.2	74.3	0.013	0.44

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
Rainwater harvesting	0.007	1	200	0.01	200 (gal)	$400

GREEN INFRASTRUCTURE RECOMMENDATIONS

Roxbury Community Garden

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

0 10' 20'

18. ST. THOMAS ORTHODOX CHURCH

Subwatershed: Drakes Brook

HUC14 ID: 02030105010020

Site Area: 130,673 sq. ft.

Address: 50 Flanders-Bartley Road
Flanders, NJ 07836

Block and Lot: Block 5400, Lot 24

Rain gardens can be installed to the east and west of the building to capture, treat, and infiltrate stormwater runoff from the rooftop. Downspout redirections beneath the sidewalk will be required for the eastern rain garden. Downspout redirection and disconnection will be required for the western rain garden. Existing parking spaces to the north and east of the building can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt. 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 50"
34	44,957	2.2	22.7	206.4	0.035	1.40

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	2,705	0.080	11	5,640	0.21	675	$6,750
Pervious pavement	27,935	0.827	122	58,270	2.19	6,410	$160,250

GREEN INFRASTRUCTURE RECOMMENDATIONS

St. Thomas Orthodox Church

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 30' 60'

19. TEMPLE SHALOM

Subwatershed: Drakes Brook

HUC14 ID: 02030105010020

Site Area: 178,553 sq. ft.

Address: 215 South Hillside Avenue, Succasunna, NJ 07876

Block and Lot: Block 2802, Lot 20

Parking spaces in the lot to the north and south of the building can be converted to porous pavement to capture and infiltrate stormwater runoff from the roof and asphalt; this requires downspout disconnection and trench drains for redirection. A rain garden requiring downspout disconnection can be installed in the grass area in the rear of the building to capture, treat, and infiltrate stormwater runoff from the roof. 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 50"
58	103,414	5.0	52.2	474.8	0.081	3.22

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	995	0.029	4	2,070	0.08	250	$2,500
Pervious pavement	25,725	0.762	112	53,650	2.02	4,620	$115,500

GREEN INFRASTRUCTURE RECOMMENDATIONS

Temple Shalom

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 50' 100'

20. TINC ROAD SCHOOL

Subwatershed: Drakes Brook

HUC14 ID: 02030105010020

Site Area: 1,306,368 sq. ft.

Address: 24 Tinc Road
Flanders, NJ 07836

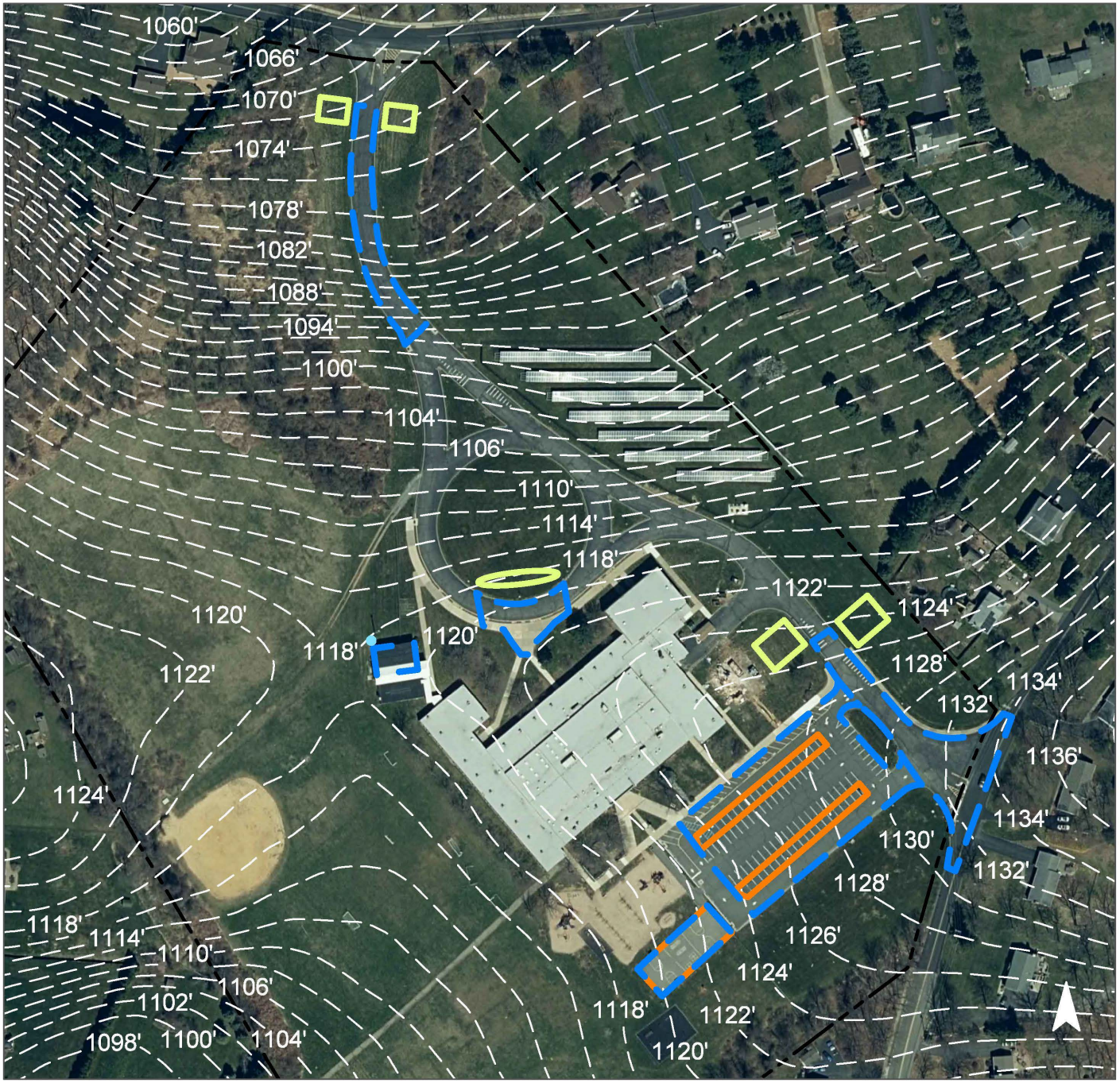
Block and Lot: Block 7100, Lot 67

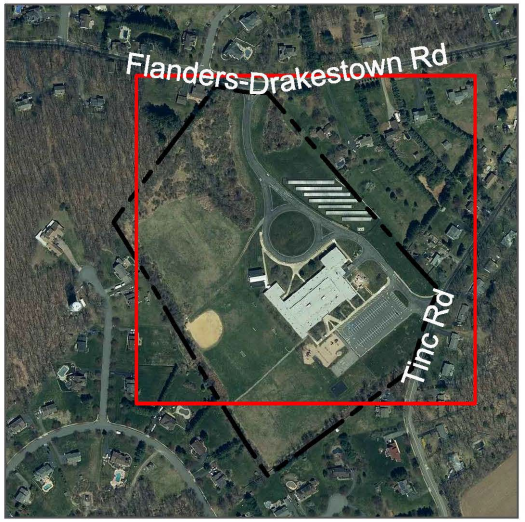
Rain gardens can be installed in multiple grass areas around the property to capture, treat, and infiltrate stormwater runoff from the driveway. Curb cuts will be required, and a trench drain may also be needed for the rain garden to the north of the school. Existing parking spaces in the lot can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt. Trench drains will be required. The basketball courts can be converted into pervious pavement to capture and infiltrate stormwater runoff from the courts. A cistern can be installed to the northwest of the northern shed to divert and detain the stormwater runoff from the rooftop for later non-potable reuse such as watering the nearby garden. The downspouts can be reworked so that all shed runoff is managed by the cistern. 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 50"
17	219,401	10.6	110.8	1,007.4	0.171	6.84

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	31,895	0.944	139	66,530	2.50	7,970	$79,700
Pervious pavement	47,505	1.407	207	99,090	3.72	13,555	$338,875
Rainwater harvesting	1,890	0.056	8	1,500	0.06	1,500 (gal)	$4,500

GREEN INFRASTRUCTURE RECOMMENDATIONS





Tinc Road School

- bioretention system
- pervious pavement
- rainwater harvesting
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 100' 200'

21. DRAKESTOWN UNITED METHODIST CHURCH

Subwatershed: Raritan River South Branch

Site Area: 42,024 sq. ft.

Address: 6 Church Road
Hackettstown, NJ 0784

Block and Lot: Block 10, Lot 11

Downspout planter boxes can be installed to capture and retain runoff from the rooftop. Pervious pavement is proposed along the south edge of the parking lot to treat the entire parking lot's drainage area. 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"
39	0.38	16,468	0.8	8.3	75.6	0.013

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	0.168	28	13,090	0.46	1,630	$40,750
Planter boxes	n/a	1	n/a	n/a	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Drakestown United Methodist Church

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

0 25' 50'

22. MOUNT OLIVE HIGH SCHOOL

Subwatershed: Raritan River South Branch

HUC14 ID: 02030105010040

Site Area: 2,112,315 sq. ft.

Address: 18 Corey Road
Flanders, NJ 07836

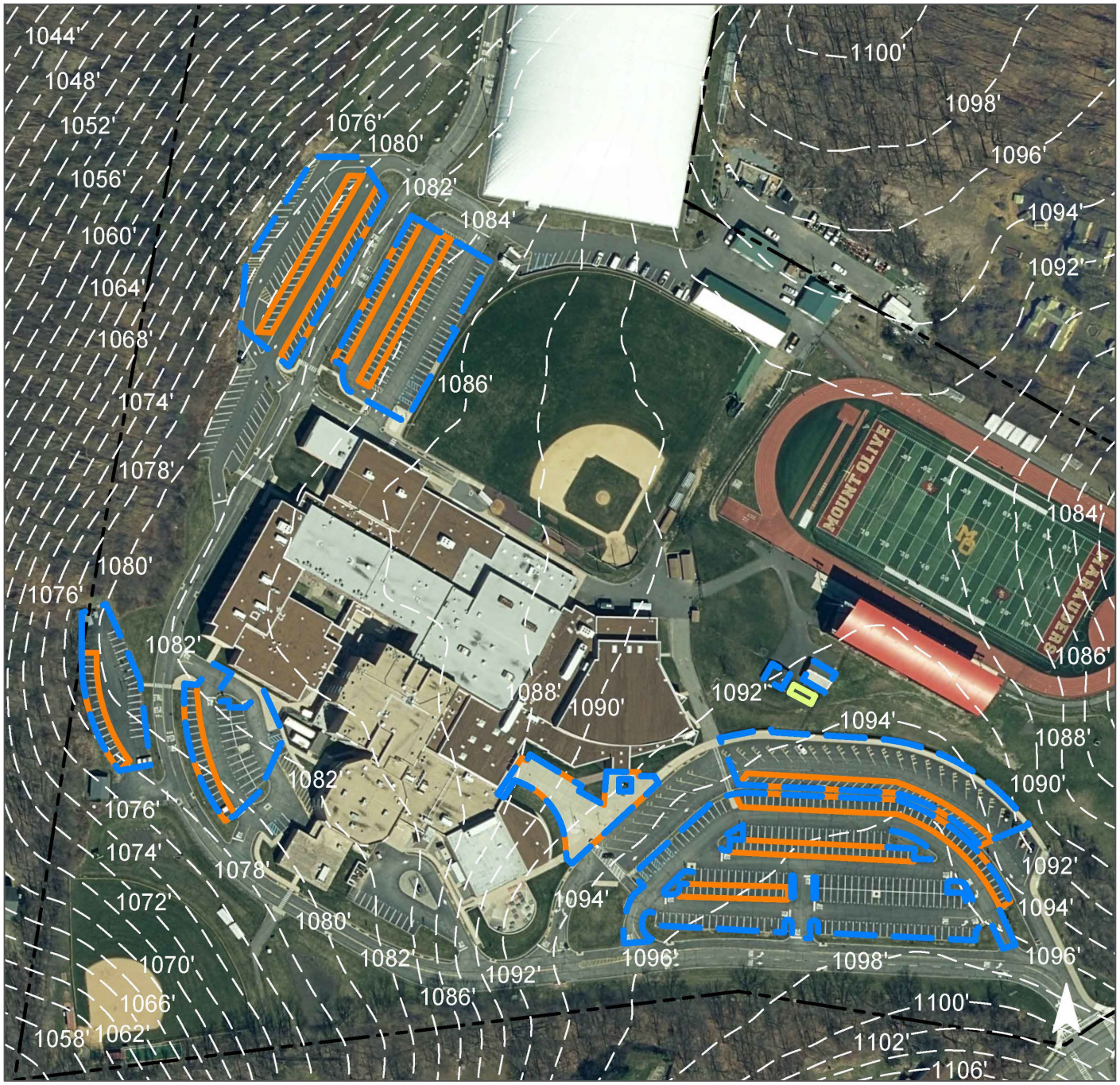
Block and Lot: Block 7600, Lot 86

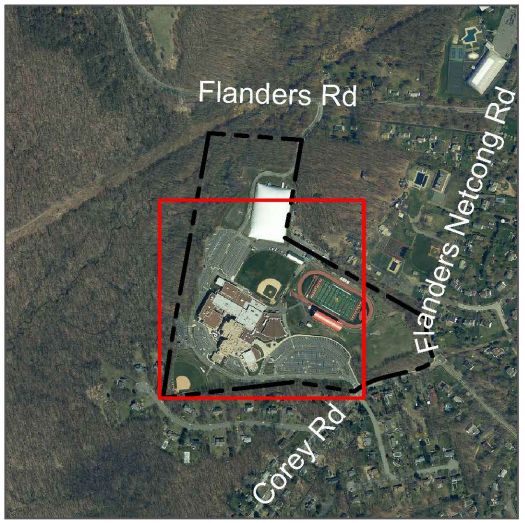
A rain garden can be installed to the south of the eastern sheds to capture, treat, and infiltrate stormwater runoff from the rooftops. This may require gutter installation or reworking of existing downspouts. Existing parking spaces in the eastern, western, and northern lots can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt. The concrete entryway to the south of the school can be replaced with permeable pavers. 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 50"
46	967,478	46.6	488.6	4,442.0	0.754	30.15

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	1,520	0.045	6	3,170	0.12	380	$3,800
Pervious pavement	193,565	5.731	844	403,740	15.17	50,120	$1,253,000

GREEN INFRASTRUCTURE RECOMMENDATIONS





Mount Olive High School

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 100' 200'

23. SANDSHORE ELEMENTARY SCHOOL

Subwatershed: Raritan River South Branch

HUC14 ID: 02030105010040

Site Area: 868,001 sq. ft.

Address: 498 Sand Shore Road
Hackettstown, NJ 07840

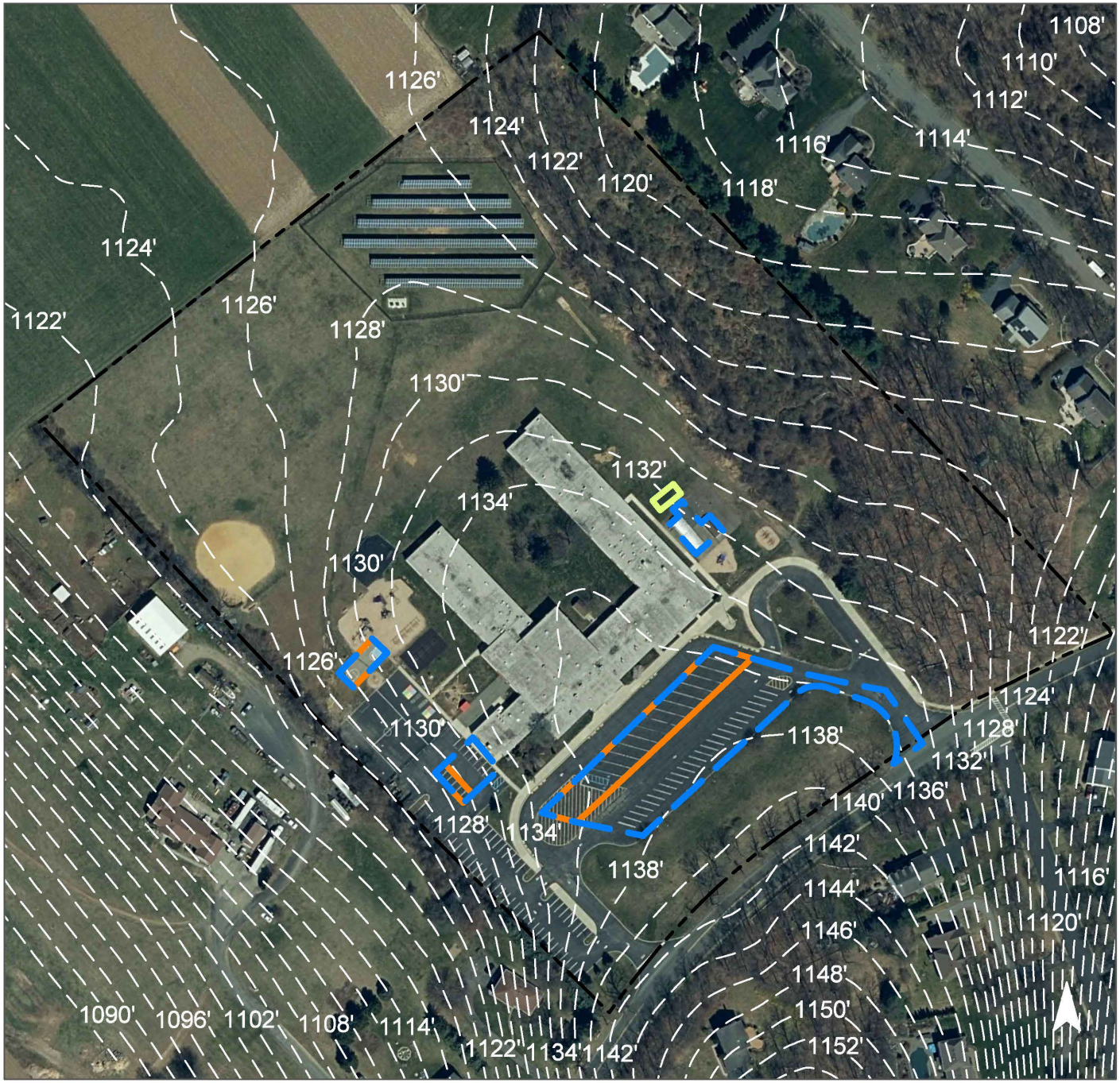
Block and Lot: Block 900, Lot 12

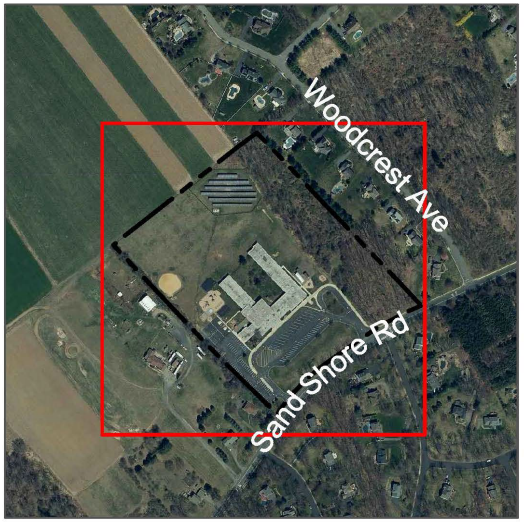
A rain garden can be installed to the north of the eastern sheds to capture, treat, and infiltrate stormwater runoff from the rooftops. This will require gutter system installations. Existing parking spaces to the south and west of the building can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt. The basketball court can be converted into pervious pavement to capture and infiltrate stormwater runoff from the court. 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 50"
25	220,998	10.7	111.6	1,014.7	0.172	6.89

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	2,245	0.066	10	4,680	0.18	560	$5,600
Pervious pavement	44,810	1.327	196	93,460	3.51	16,075	$401,875

GREEN INFRASTRUCTURE RECOMMENDATIONS





Sandshore Elementary School

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 100' 200'

24. TURKEY BROOK PARK

Subwatershed: Raritan River South Branch

HUC14 ID: 02030105010040

Site Area: 11,330,892 sq. ft.

Address: 30 Flanders Road
Budd Lake, NJ 07828

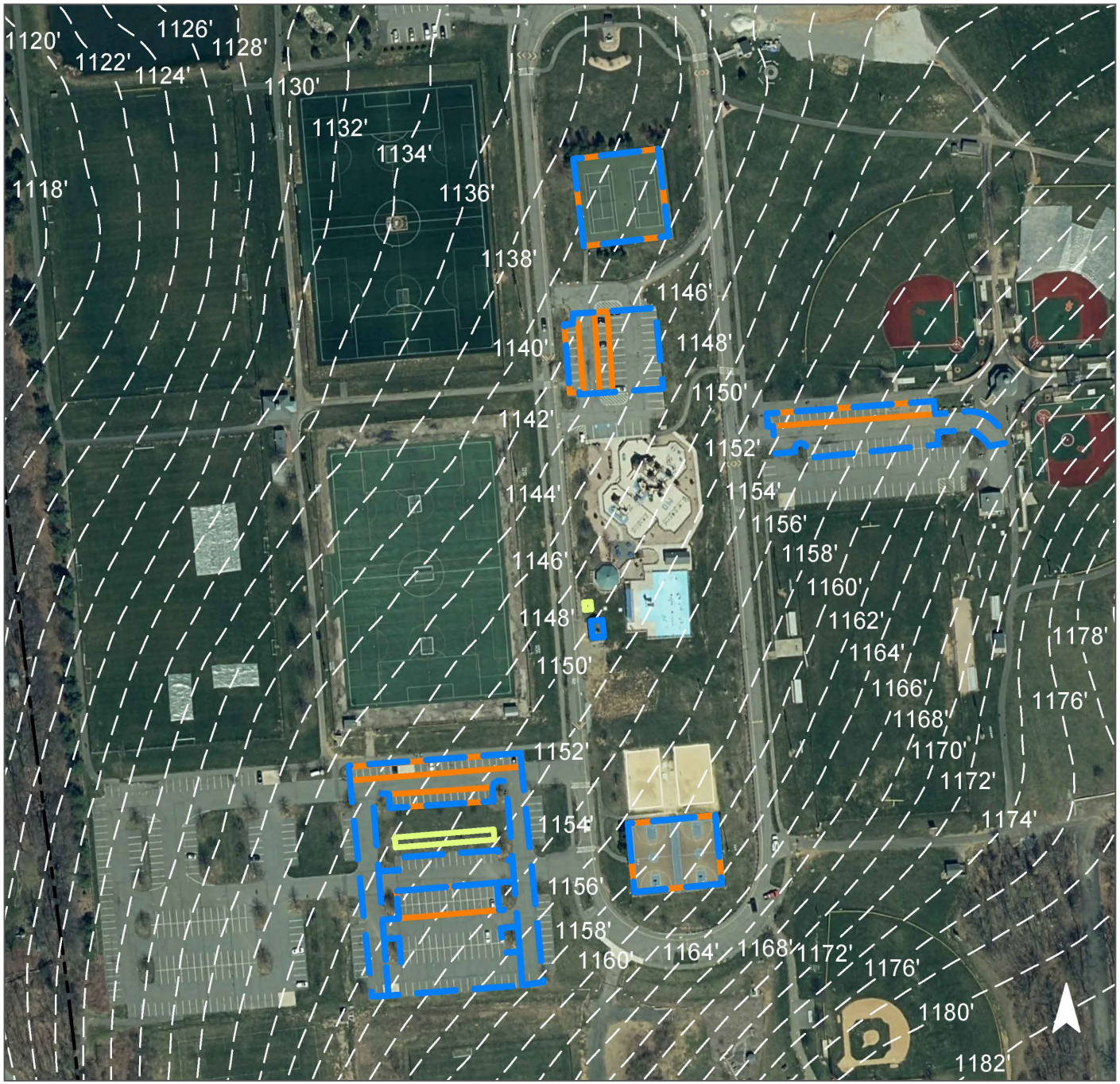
Block and Lot: Block 7600, Lot 71

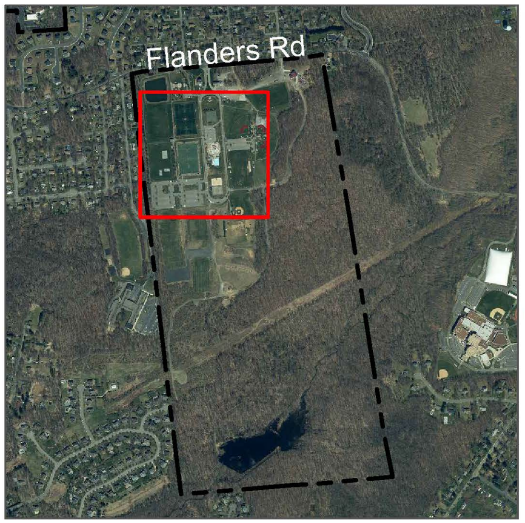
A rain garden can be installed to the northwest corner of the southwestern shed to capture, treat, and infiltrate stormwater runoff from the rooftop. This will require gutter system installation. Another rain garden can be installed to the north of the southwestern parking lot to capture, treat, and infiltrate stormwater runoff from the asphalt. Existing parking spaces to the north, east, and southwest can be converted into pervious pavement to capture and infiltrate stormwater runoff from the asphalt. The tennis and basketball courts can be converted into pervious pavement to capture and infiltrate stormwater runoff from the courts. 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 50"
8	867,872	41.8	438.3	3,984.7	0.676	27.05

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	7,195	0.213	32	15,000	0.56	1,800	$18,000
Pervious pavement	96,295	2.851	420	200,850	7.55	41,655	$1,041,375

GREEN INFRASTRUCTURE RECOMMENDATIONS





Turkey Brook Park

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 100' 200'

25. BENEDICT A. CUCINELLA SCHOOL

Subwatershed: Raritan River South Branch

Site Area: 1,278,641 sq. ft.

Address: 470 Naughright Road
Long Valley, NJ 07853

Block and Lot: Block 12, Lot 37

Downspout planter boxes are suggested at the entrance of the school to promote green infrastructure awareness. A section of parking spaces can be converted to pervious pavement to capture and infiltrate runoff from the parking lot. Tree filter boxes can be installed in islands in the parking lot to capture runoff from other spaces in the 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"
23	6.61	287,755	13.9	145.3	1,321.2	0.224

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	0.230	38	17,960	0.63	2,715	$67,875
Planter boxes	n/a	2	n/a	n/a	2 (boxes)	$2,000
Tree filter boxes	n/a	116	n/a	n/a	3 (boxes)	$30,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Benedict A. Cucinella School

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

0 50' 100'

26. Immanuel Lutheran Church

Subwatershed: Raritan River South Branch

HUC 14: 02030105010050

Site Area: 218,150 sq. ft.

Address: 40 Coleman Road
Long Valley, NJ 07853

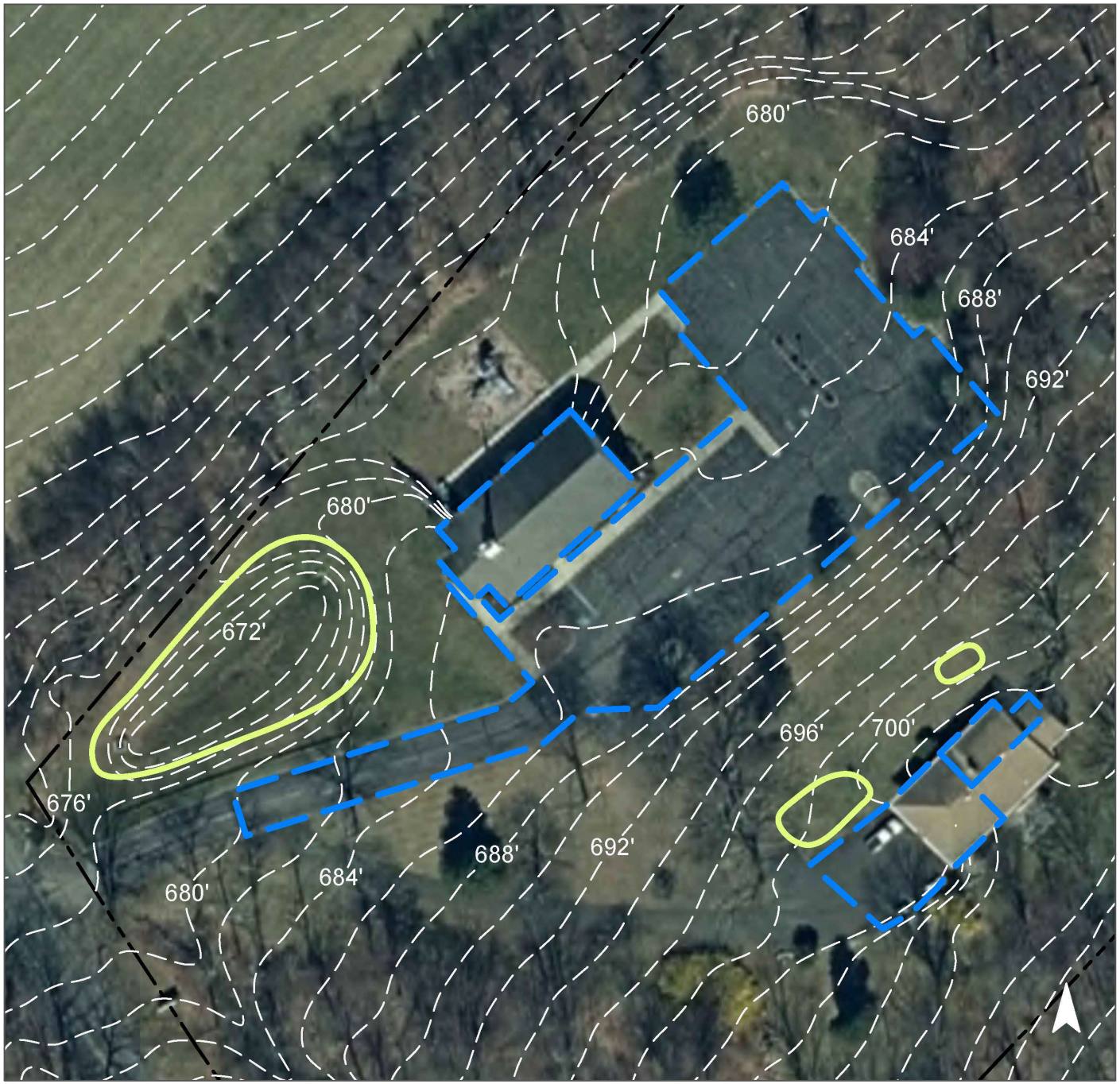
Block and Lot: Block 18.01, Lot 18

In the southwest corner of the property, there is an existing retention basin to which water is conveyed from the rooftop and pavement via connected downspouts and catch basins. This can be converted into a rain garden to capture, treat, and infiltrate stormwater runoff. A trench drain can be installed half-way up the driveway coming from the southwest to increase runoff capture and convey it to the rain garden. Two rain gardens can also be installed off the northwest facade of the house in the southeast section of the property. 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 50"
16	33,865	1.6	17.1	155.5	0.026	1.06

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	26,010	0.770	114	54,250	2.04	6,505	$65,050

GREEN INFRASTRUCTURE RECOMMENDATIONS



Immanuel Lutheran Church

- bioretention system
- captured drainage area
- property line
- 2017 - 2018 USGS Lidar: NW New Jersey 6 County

0 30' 60'

27. LONG VALLEY PRESBYTERIAN CHURCH

Subwatershed: Raritan River South Branch

HUC 14: 02030105010050

Site Area: 441,899 sq. ft.

Address: 39 Bartley Road
Long Valley, NJ 07853

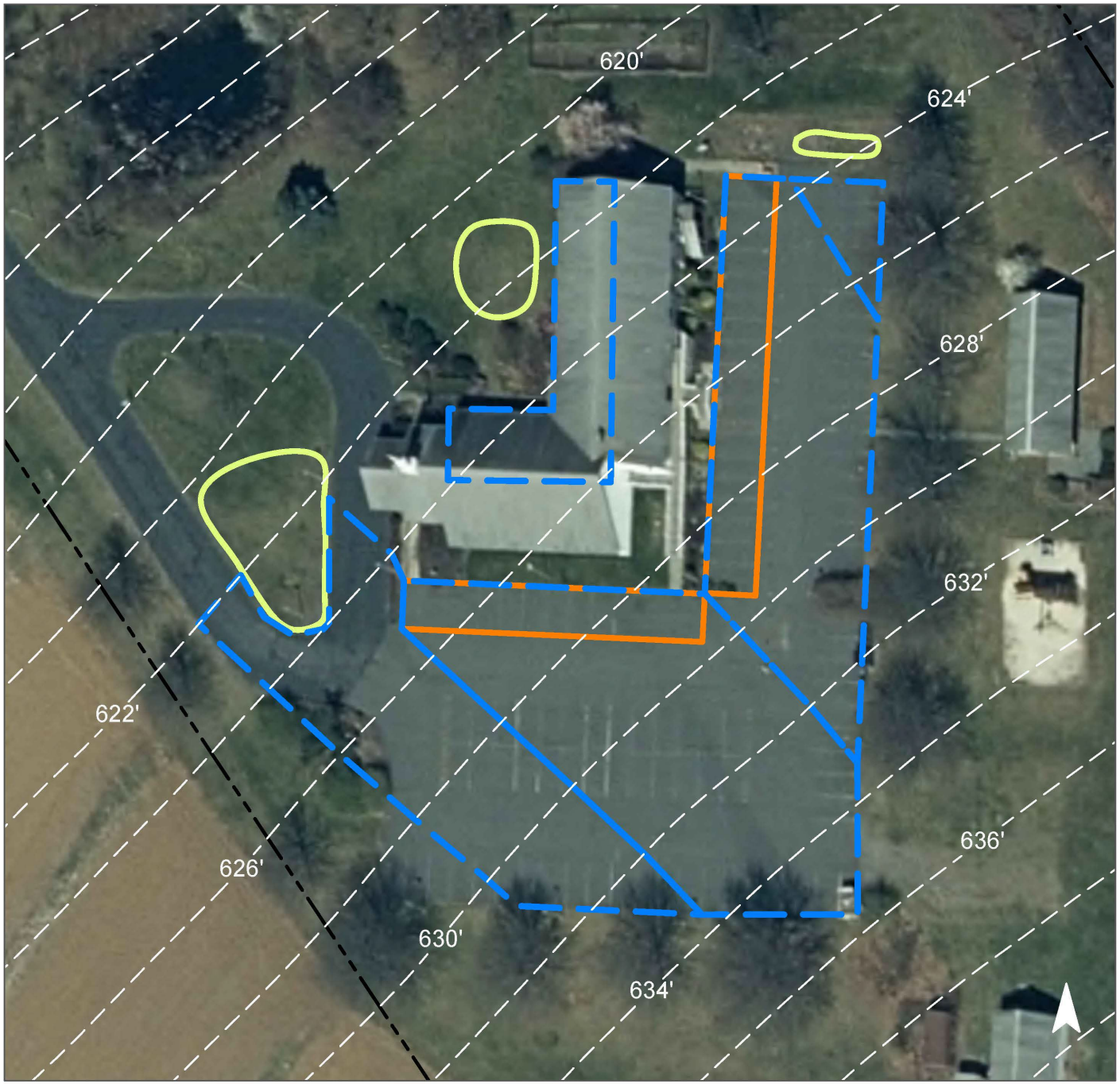
Block and Lot: Block 29, Lot 20.03

Rain gardens can be installed off the north and west ends of the parking lot, and the west face of the church to capture, treat, and infiltrate stormwater runoff. In the west end of the parking lot, a trench drain could be installed on the western side of the roundabout to increase stormwater runoff capture. The existing parking spaces off the south and east faces of the building can be converted into pervious pavement to capture and infiltrate stormwater. The pervious pavement off the south face of the building would collect runoff from the parking lot and via downspouts which require disconnection, and the pervious pavement off the east face would collect runoff from the 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 50"
16	71,830	3.5	36.3	329.8	0.056	2.24

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	14,635	0.433	65	30,530	1.15	3,695	$36,950
Pervious pavement	23,795	0.705	105	49,630	1.87	5,520	$138,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Long Valley Presbyterian Church

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 30' 60'

28. OLD FARMERS ROAD ELEMENTARY SCHOOL

Subwatershed: Raritan River South Branch

Site Area: 636,598 sq. ft.

Address: 51 Old Farmers Road
Long Valley, NJ 07853

Block and Lot: Block 35, Lot 3.01

Two rain gardens can be installed to capture, treat, and infiltrate stormwater runoff from the building's roof as well as the adjacent parking lot. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
24	151,534	7.3	76.5	695.7	0.118	4.16

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	0.349	58	27,290	0.96	3,350	$16,750

GREEN INFRASTRUCTURE RECOMMENDATIONS

OLD FARMERS ROAD ELEMENTARY SCHOOL

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

0 50' 100'

29. SCHOOLEYS MOUNTAIN PARK PARKING

Subwatershed: Raritan River South Branch

HUC 14: 02030105010050

Site Area: 1,975,631 sq. ft.

Address: 91 East Springtown Road
Long Valley, NJ 07853

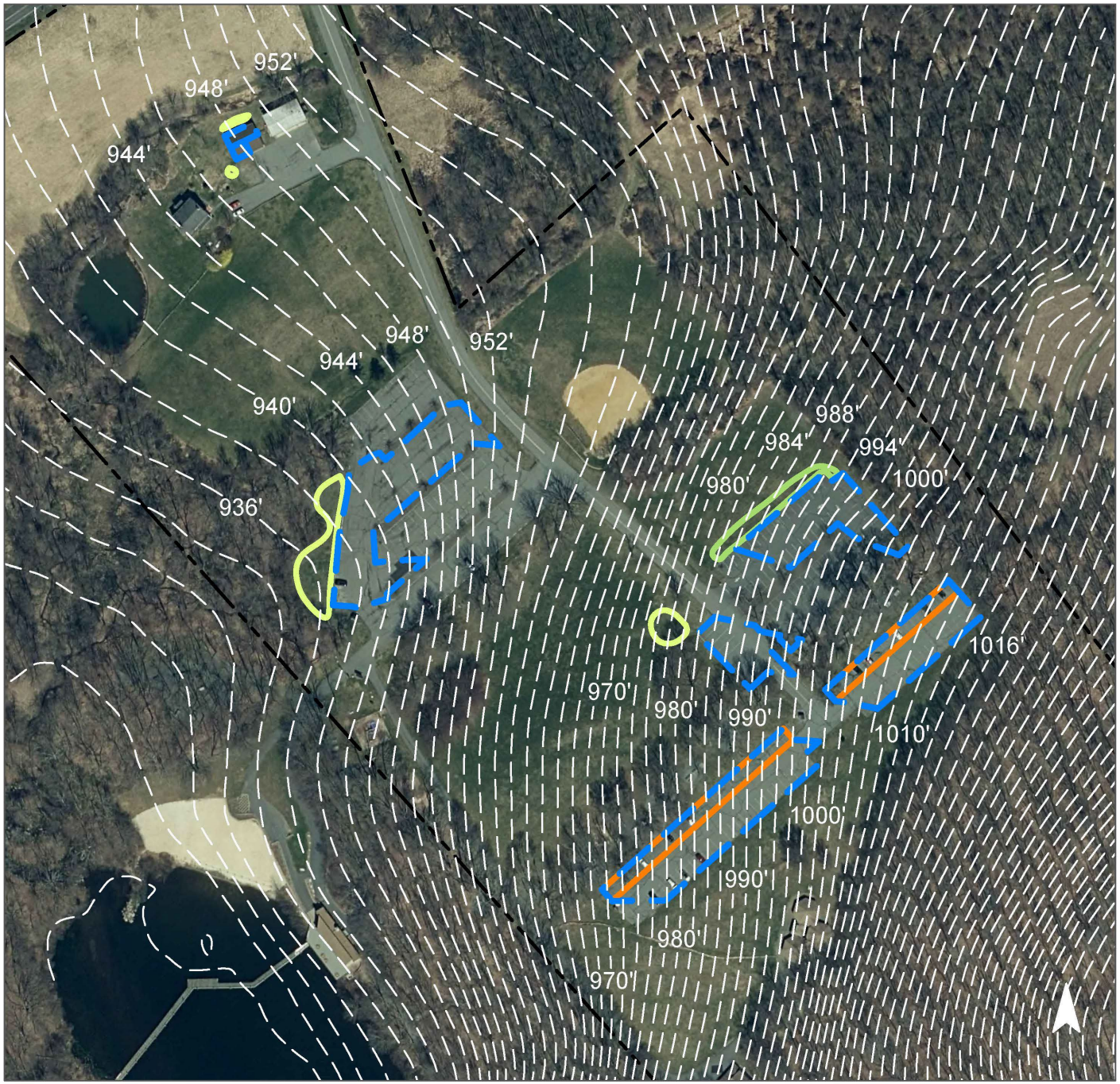
Block and Lot: Block 25, Lot 56.01,56.02

Rain gardens can be installed to capture, treat, and infiltrate stormwater runoff coming from the rooftops of buildings in the northwest corner of the property, in the west corners of the central parking lot, and the smaller parking lot further southeast. A bioswale can be installed off the northern edge of the central eastern parking lot to treat stormwater runoff while conveying it toward a catch basin in the western corner of this lot. In the furthest southeast parking lots, rows of parking stalls can be converted to pervious pavement to capture and infiltrate stormwater runoff from the pavement. 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 50"
10	206,323	9.9	104.2	947.3	0.161	6.43

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	28,255	0.837	124	58,930	2.21	7,065	$70,650
Bioswale	12,310	0.182	38	11,520	0.12	3,080	$30,800
Pervious Pavement	33,080	0.979	144	69,000	2.59	10,680	$267,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Schooleys Mountain Park Parking

- bioretention system
- bioswale
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 100' 200'

30. ST. MARK THE EVANGELIST ROMAN CATHOLIC CHURCH

Subwatershed: Raritan River South Branch

Site Area: 366,270 sq. ft.

Address: 59 Spring Lane
Long Valley, NJ 07853

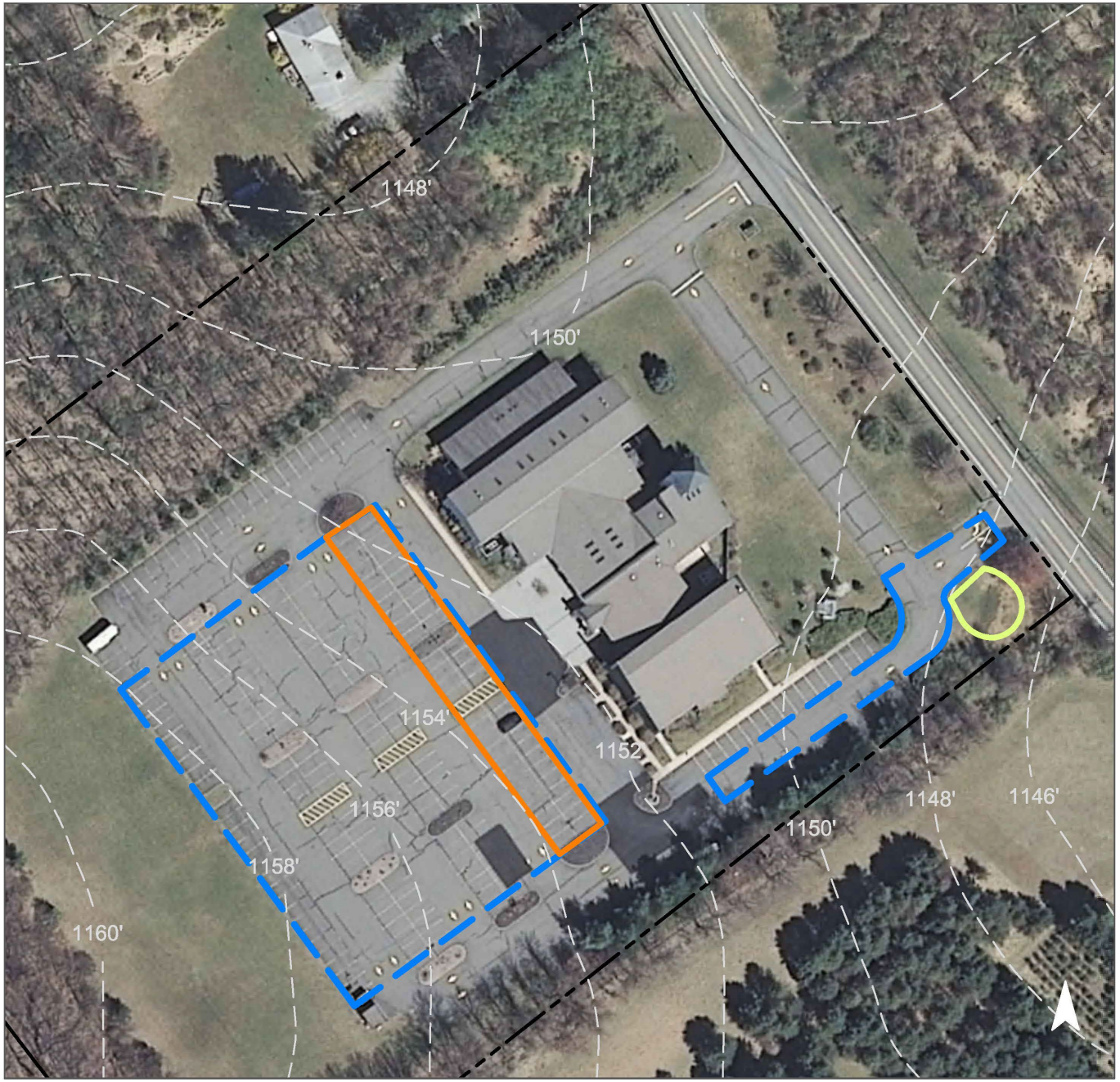
Block and Lot: Block 20 Lot 90

A bioretention system can be installed in the southeast corner of the property to mitigate flooding. Additionally, pervious pavement is suggested adjacent to the southwest edge of the building to capture and infiltrate stormwater runoff from the 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"
43	158,478	7.6	80.0	727.6	0.123	4.35

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	0.159	27	12,420	0.44	1,525	$7,625
Pervious pavement	1.473	247	115,100	4.06	8,910	$222,750

GREEN INFRASTRUCTURE RECOMMENDATIONS



St. Mark the Evangelist Roman Catholic Church

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

0 50' 100'

31. WASHINGTON TOWNSHIP DEPARTMENT OF PUBLIC WORKS

Subwatershed: Raritan River South Branch

HUC 14: 02030105010050

Site Area: 576,734 sq. ft.

Address: 54 Rock Road
Long Valley, NJ 07853

Block and Lot: Block 23, Lot 16.01

Rain gardens can be installed off the northwest corner and southern edge of the two buildings in the west edge of the property, and off the southern facades of the two buildings in the southeast edge of the property to capture, treat, and infiltrate stormwater from the rooftops via downspouts requiring disconnection. Rows of parking stalls off the west face of the western buildings, south face of the building in the northeast, and northwest corner of the building in the east can be converted to pervious pavement to capture and infiltrate stormwater runoff. The northeast and east buildings require one downspout each to be disconnected. 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 50"
57	329,629	15.9	166.5	1,513.4	0.257	10.27

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	5,540	0.164	25	11,560	0.43	1,385	$13,850
Pervious pavement	21,085	0.624	91	43,980	1.65	5,405	$135,125

GREEN INFRASTRUCTURE RECOMMENDATIONS

Washington Township Department of Public Works

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 50' 100'

32. WASHINGTON TOWNSHIP POLICE DEPARTMENT

Subwatershed: Raritan River South Branch

HUC 14: 02030105010050

Site Area: 105,858 sq. ft.

Address: 1 East Springtown Road
Long Valley, NJ 07853

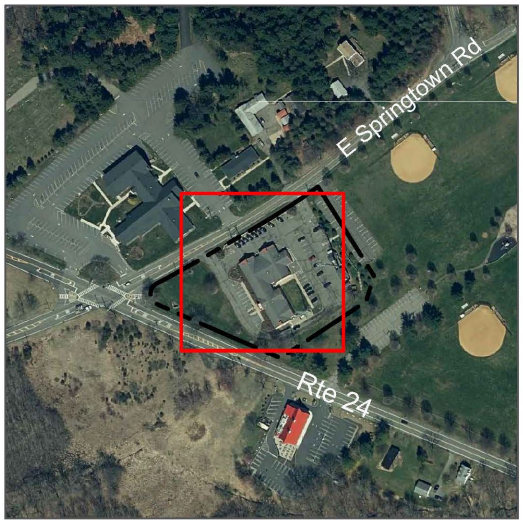
Block and Lot: Block 24, Lot 8,8.01

A rain garden off the southeast facade of the building to capture, treat, and infiltrate stormwater runoff from the rooftop. The rows of parking stalls off the southwest and northeast facades of the building can be converted into pervious pavement to capture and infiltrate stormwater from the rooftop. Two cisterns could be installed off the northeast corner and eastern nook of the building to divert and detain stormwater runoff for later non-potable reuse such as washing police vehicles. All stormwater conveyed from the rooftop is via downspouts which would require disconnection. 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 50"
66	69,597	3.4	35.2	319.5	0.054	2.17

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	2,145	0.064	10	4,470	0.17	535	$5,350
Pervious pavement	23,275	0.689	101	48,550	1.82	6,040	$151,000
Rainwater Harvesting	2,110	0.062	10	1,650	0.00	1,650 (gal)	$4,950

GREEN INFRASTRUCTURE RECOMMENDATIONS



Washington Twp. Police Dept.

- bioretention system
- pervious pavement
- rainwater harvesting
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 25' 50'

33. WASHINGTON TOWNSHIP PUBLIC LIBRARY AND SENIOR CITIZEN CENTER

Subwatershed: Raritan River South Branch

HUC 14: 02030105010050

Site Area: 3,126,890 sq. ft.

Address: 35 & 37 East Springtown Road
Long Valley, NJ 07853

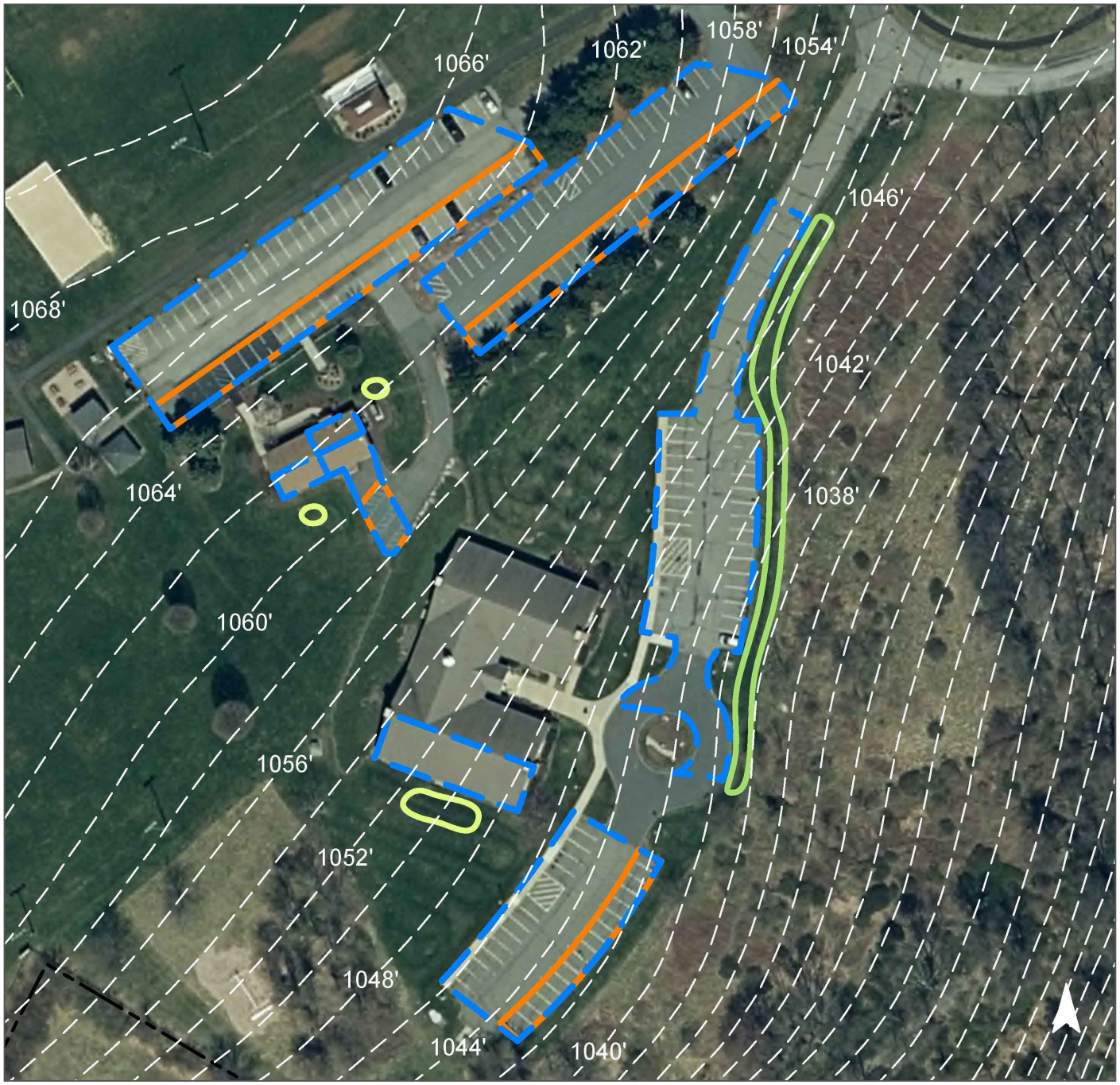
Block and Lot: Block 24, Lot 7

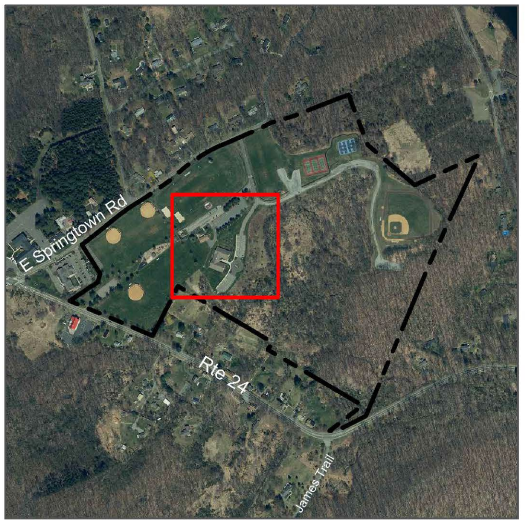
Rain gardens can be installed off the northeast and southwest corners of the senior center, and the south face of the library to capture, treat, and infiltrate stormwater from the roof via disconnected downspouts. Rows of parking stalls in the two parking lots to the north, the small parking lot off the south facade of the senior center, and the southern tip of the library's parking lot can be converted to pervious pavement to capture and infiltrate stormwater from the roof and pavement. A bioswale can also be installed along the northern half of the library's parking lot to convey water to the catch basins along the way while treating it. 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 50"
9	292,858	14.1	147.9	1,344.6	0.228	9.13

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	4,160	0.123	19	8,680	0.33	1,035	$10,350
Bioswale	16,175	0.239	50	15,130	0.26	4,045	$40,450
Pervious Pavement	45,780	1.355	200	95,490	3.59	13,410	$335,250

GREEN INFRASTRUCTURE RECOMMENDATIONS





Washington Twp. Public Library & Senior Citizen Center

- bioretention system
- bioswale
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 50' 100'

34. WEST MORRIS CENTRAL HIGH SCHOOL

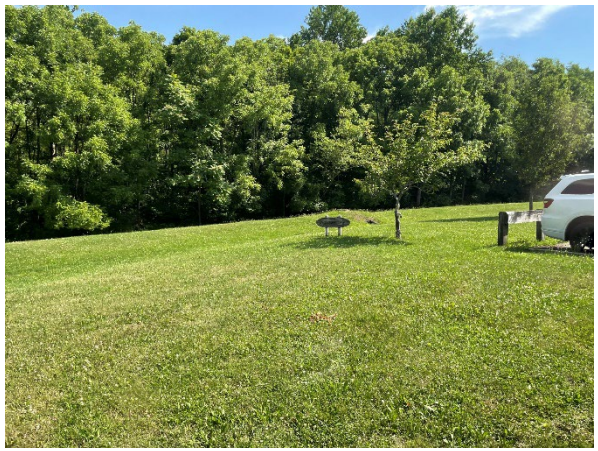
Subwatershed: Raritan River South Branch

HUC 14: 02030105010050

Site Area: 1,827,488 sq. ft.

Address: 259 Bartley Road
Chester, NJ 07930

Block and Lot: Block 17, Lot 8

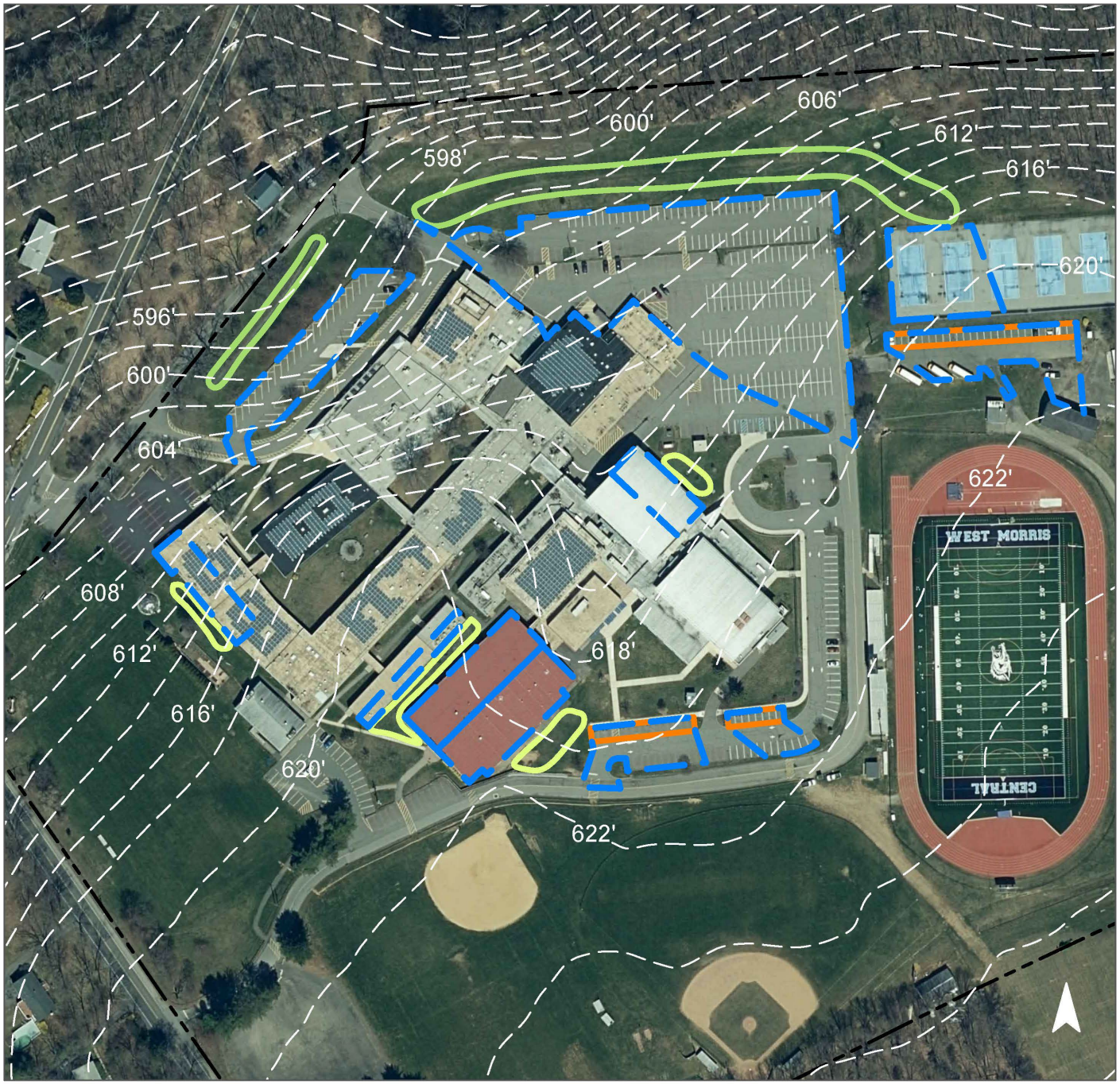


Rain gardens may be installed off portions of the west, south, and east facades of the school building to capture, treat and infiltrate stormwater runoff. Runoff would be conveyed to these rain gardens via downspouts requiring disconnection. Two existing swales can be converted to bioswales on the north and northwest sections of the property to treat stormwater runoff from adjacent parking lots, while conveying it to catch basins. Rows of parking stalls in the southeastern and northeastern parking lots can be converted to pervious pavement to capture and infiltrate stormwater runoff from the pavement. 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 50"
40	734,334	35.4	370.9	3,371.6	0.572	22.89

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	38,760	1.148	169	80,840	3.04	9,690	$96,900
Bioswale	123,605	1.830	386	115,570	2.78	30,900	$309,000
Pervious Pavement	29,370	0.870	127	61,260	2.30	8,280	$207,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



West Morris Central High School

- bioretention system
- bioswale
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 100' 200'

35. ZION LUTHERAN CHURCH AND PARISH CENTER

Subwatershed: Raritan River South Branch

HUC 14: 02030105010050

Site Area: 401,736 sq. ft.

Address: 11 Schooleys Mountain Road
Long Valley, NJ 07853

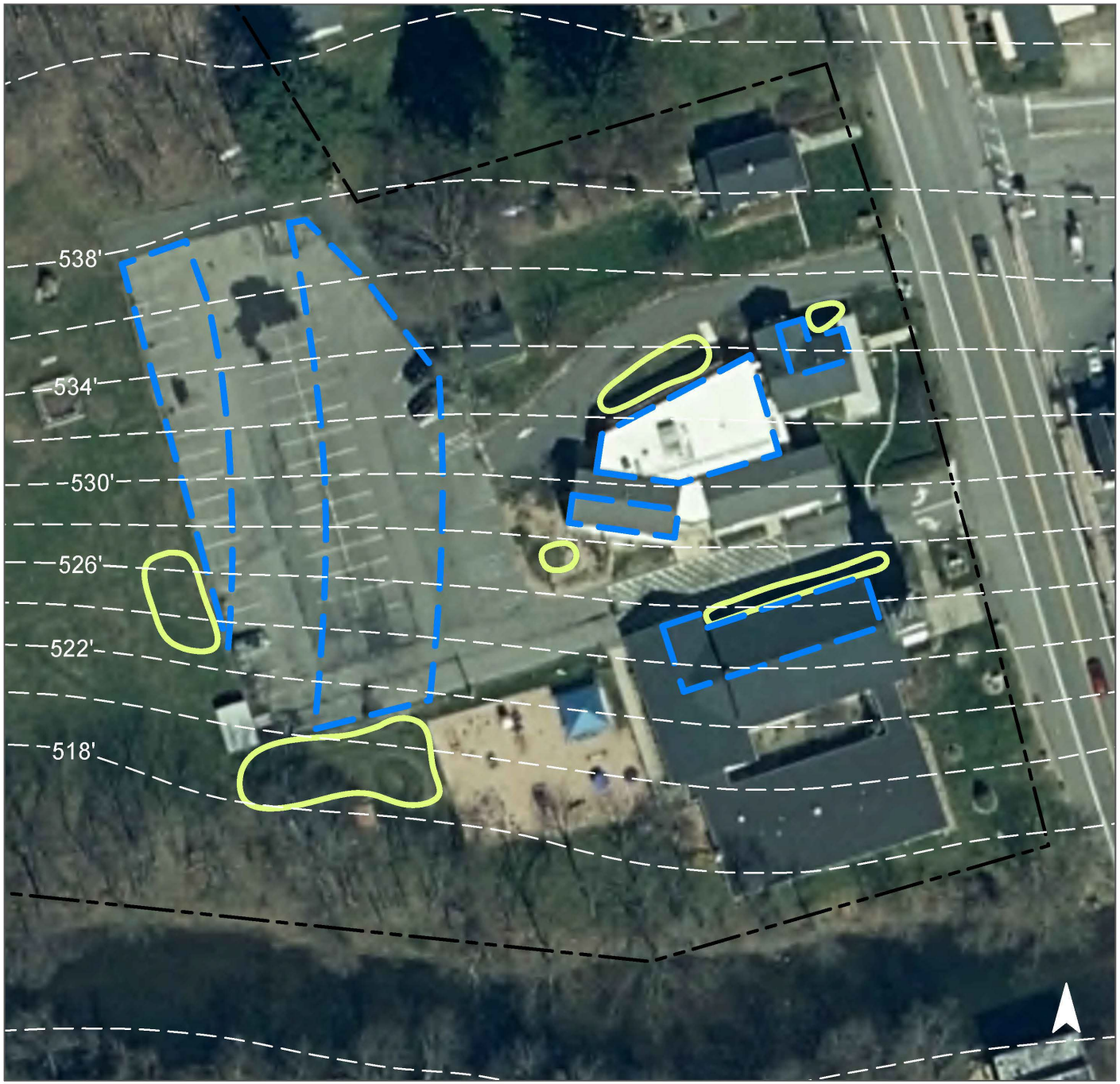
Block and Lot: Block 33, Lot 44

Rain gardens can be installed on the north and southwest faces of the church, the north face of the parish center building, and along the southwest corner of the parking lot to capture, treat, and infiltrate stormwater from the rooftops via disconnected downspouts and from the 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 50"
16	63,124	3.0	31.9	289.8	0.049	1.97

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	15,560	0.461	68	32,460	1.22	3,885	$38,850

GREEN INFRASTRUCTURE RECOMMENDATIONS



Zion Lutheran Church and Parish Center

- bioretention system
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 30' 60'

36. BOROUGH ELEMENTARY SCHOOL

Subwatershed: Raritan River South Branch

Site Area: 96,268 sq. ft.

Address: 6 School Street
Califon, NJ 07830

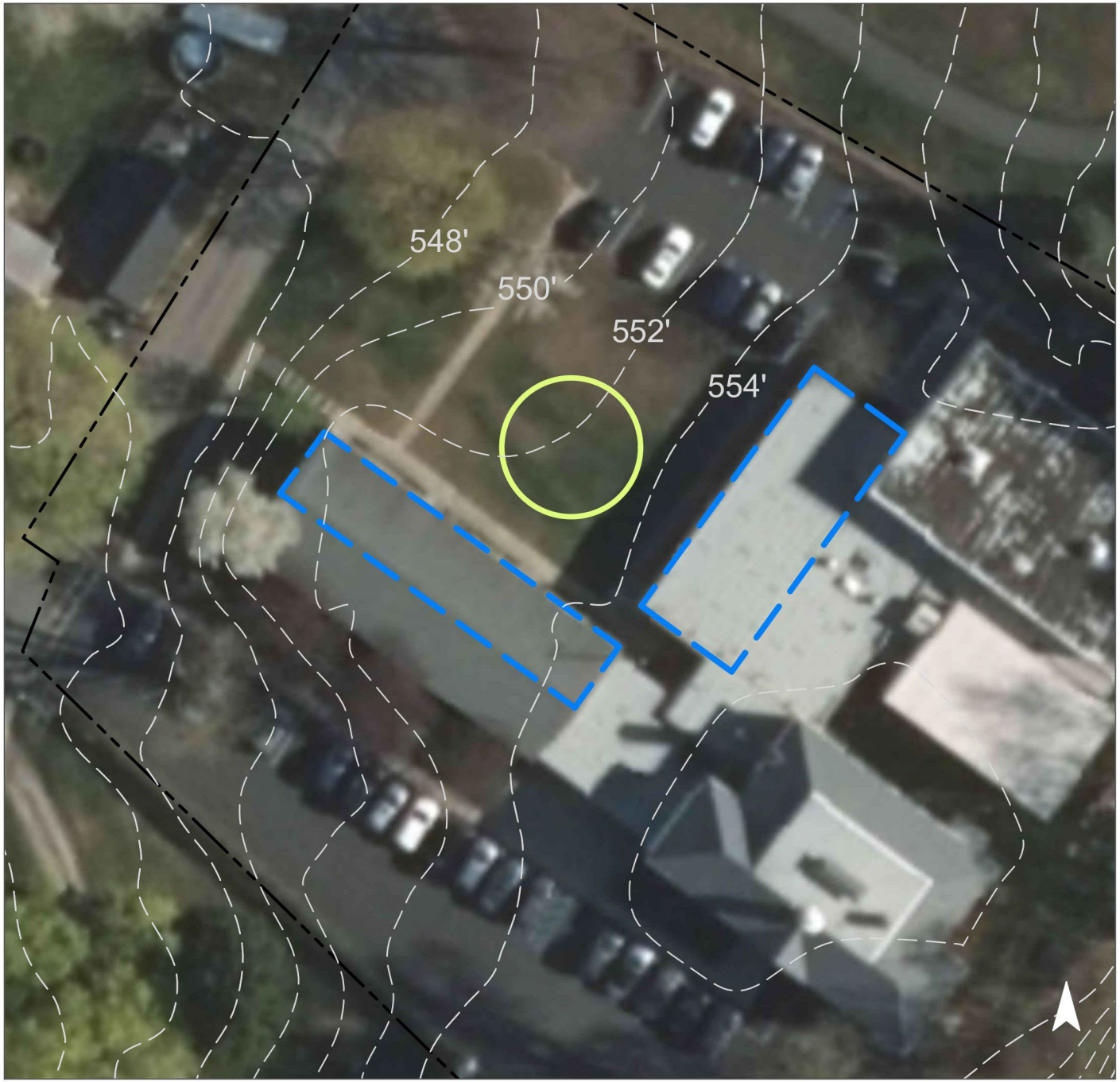
Block and Lot: Block 8, Lot 3

A rain garden centralized in the courtyard could be installed to collect rooftop stormwater. 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"
52	49,605	2.4	25.1	227.8	0.039	1.36

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.108	18	8,198	0.31	1,040	$5,200

GREEN INFRASTRUCTURE RECOMMENDATIONS



Califon Borough Elementary School

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

0 20' 40'

37. CALIFON FIRST AID SQUAD

Subwatershed: Raritan River South Branch

Site Area: 27,012 sq. ft.

Address: 107 Bank Street
Califon, NJ 07830

Block and Lot: Block 23, Lot 4

A rain garden can be installed next to the entrance of the parking lot to capture stormwater from the sloped lot. A cistern can be installed to harvest rainwater from the rooftop. Collected rainwater can be used for washing first aid squad vehicles or be used to water landscaping. 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"
54	14,648	0.7	7.4	67.3	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	0.045	8	3,396	0.13	430	$2,150
Rainwater harvesting	0.032	5	1,000	0.09	1,000 (gal)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Califon First Aid Squad

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

0 20' 40'

38. CALIFON ISLAND PARK

Subwatershed: Raritan River South Branch

Site Area: 537,044 sq. ft.

Address: 111 Bank Street
Califon, NJ 07830

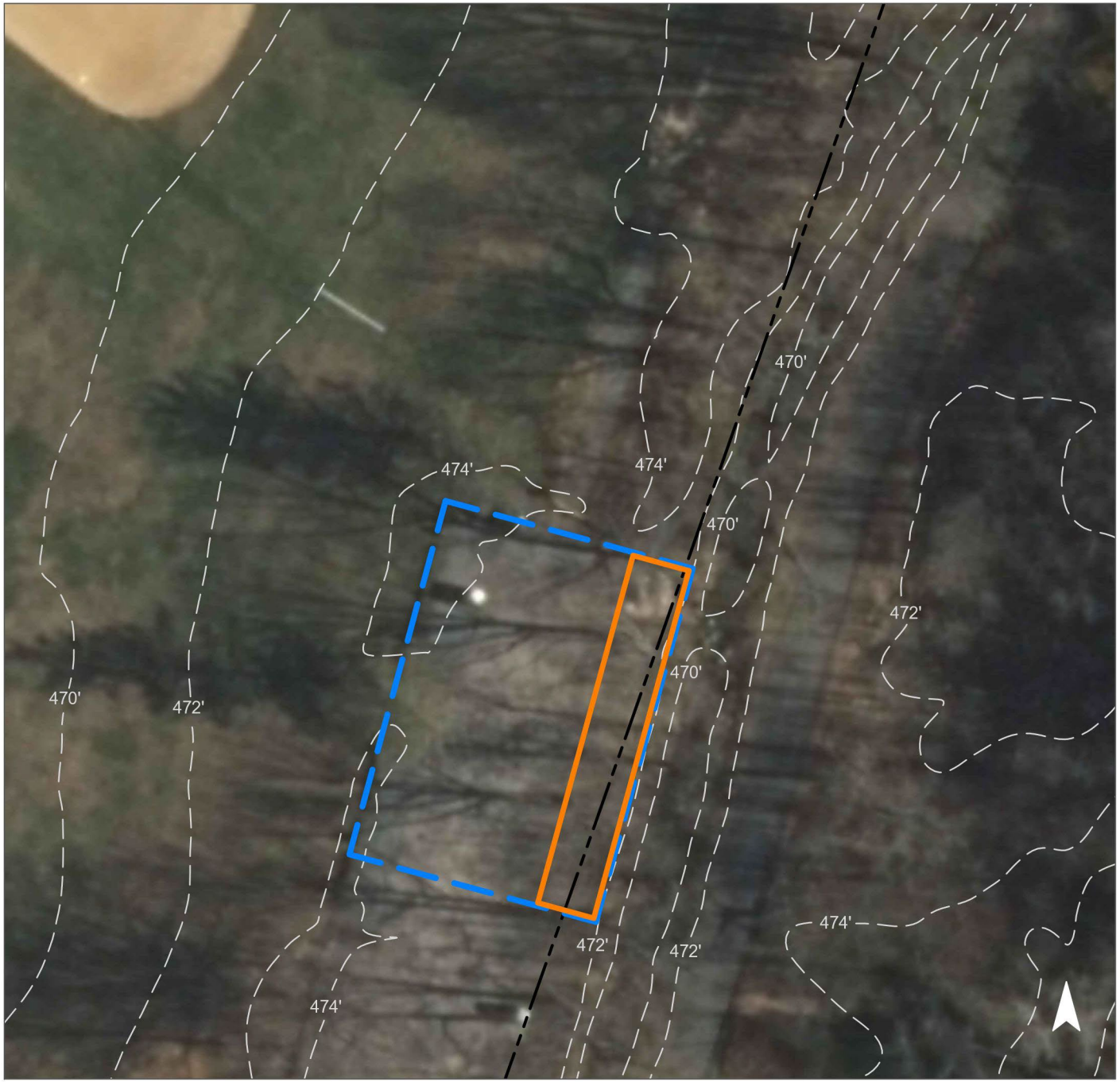
Block and Lot: Block 21, Lot 4

Porous pavement can be installed in the rear parking spaces to aid in infiltration of 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"
6	31,444	1.5	15.9	144.4	0.025	0.86

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	0.262	44	19,859	0.87	2,400	$60,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Califon Island Park

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

0 25' 50'

39. LONG VALLEY MIDDLE SCHOOL

Subwatershed: Raritan River South Branch

Site Area: 1,089,160 sq. ft.

Address: 51 West Mill Road
Long Valley, NJ 07853

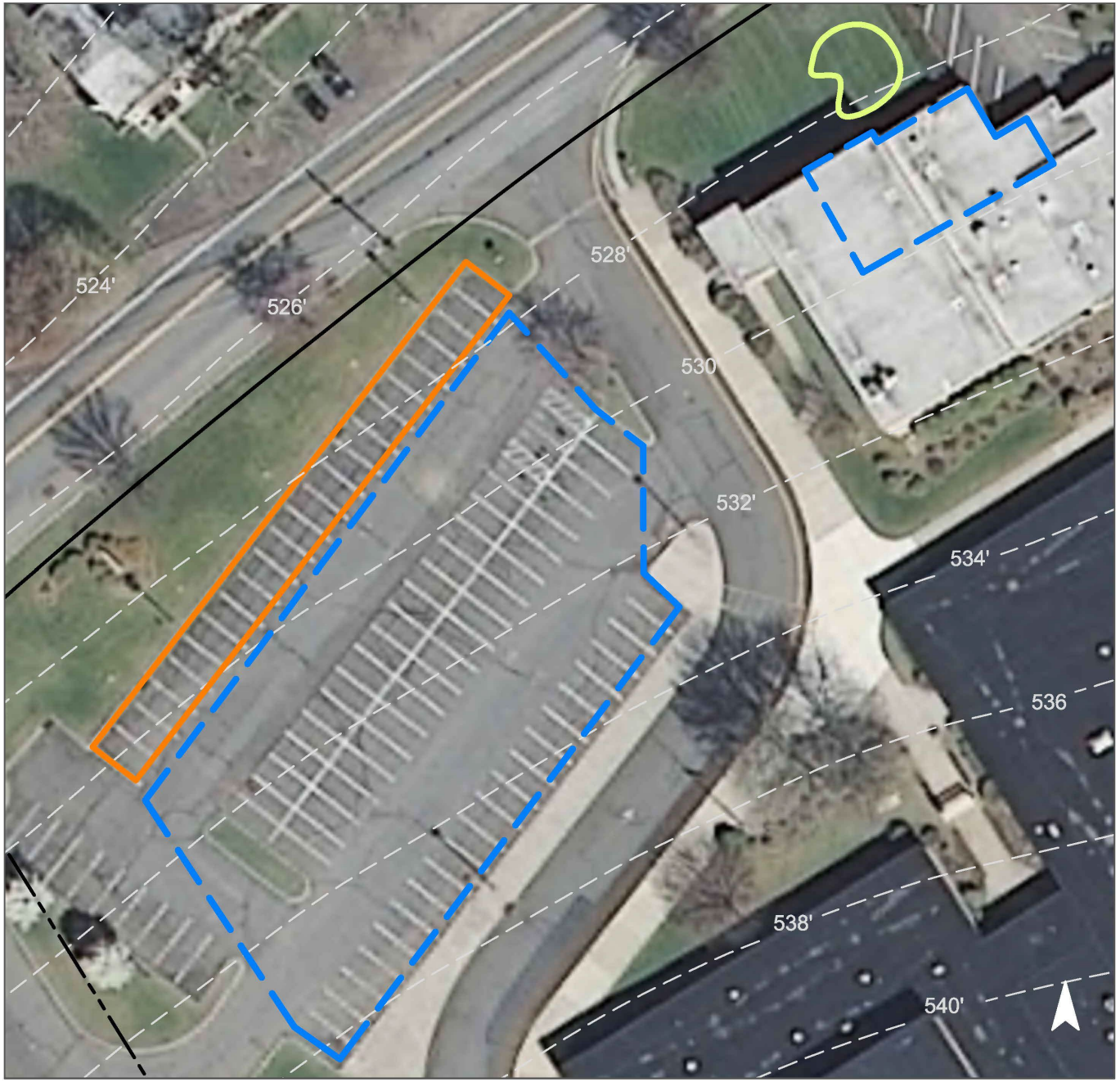
Block and Lot: Block 34 Lot 49

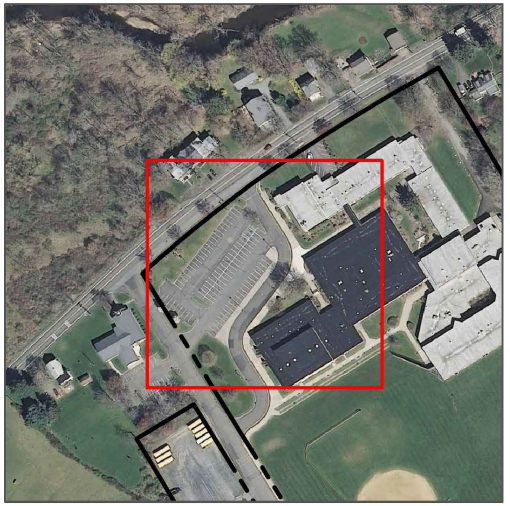
Pervious pavement is proposed in a section of parking spaces to capture and infiltrate runoff from the parking lot. A bioretention system is proposed in the north turfgrass area to capture runoff from the roof of the school. A preliminary soil assessment suggests that more soil testing would be required 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"
32	8.03	349,813	16.9	176.7	1,606.1	0.273

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	0.062	10	4,870	0.17	600	$3,000
Pervious pavement	0.527	88	41,160	1.45	3,610	$90,250

GREEN INFRASTRUCTURE RECOMMENDATIONS





Long Valley Middle School

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

0 25' 50'

40. ST. LUKE PARISH

Subwatershed: Raritan River South Branch

Site Area: 494,989 sq. ft.

Address: 265 West Mill Road
Long Valley, NJ 07853

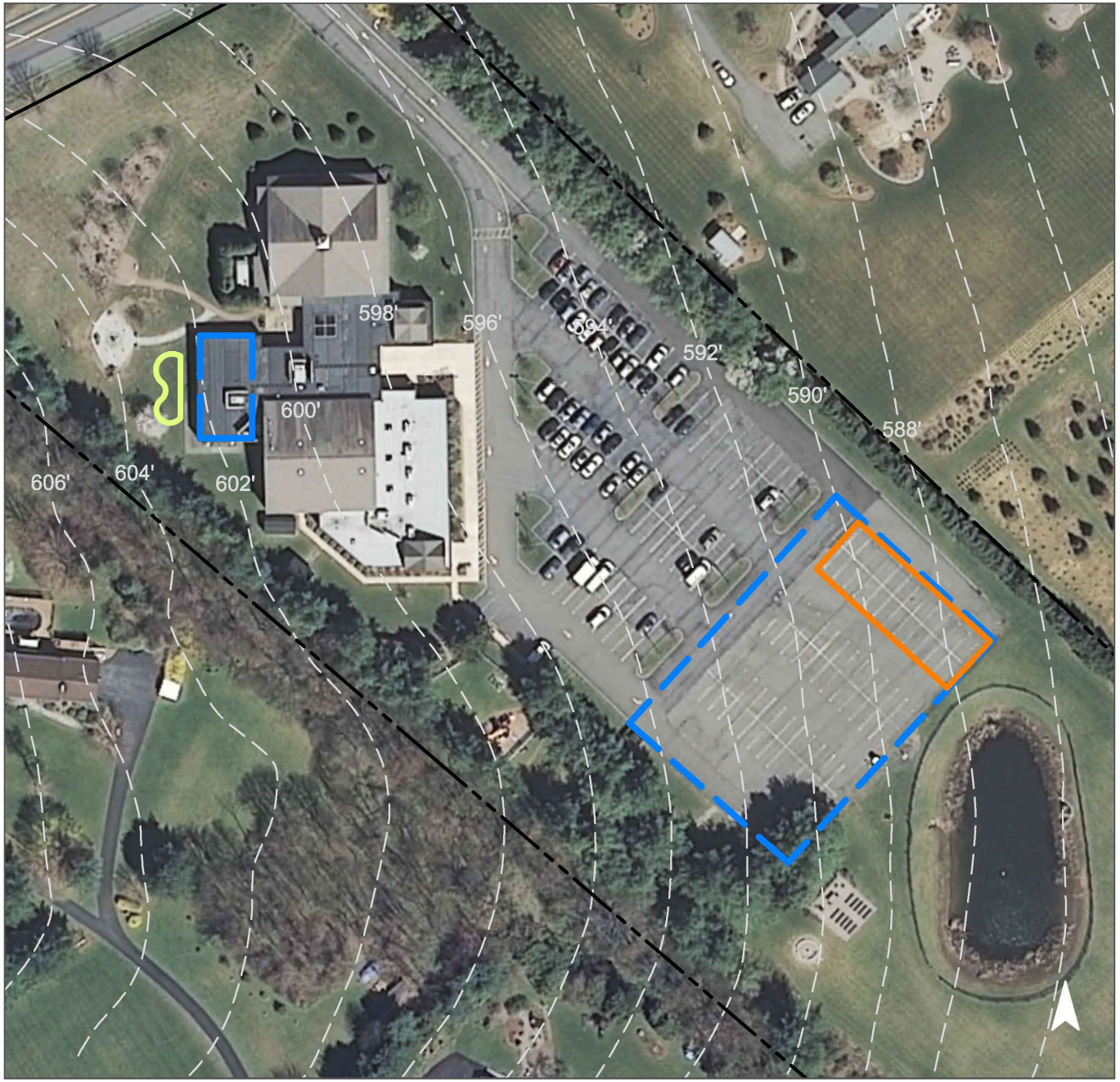
Block and Lot: Block 34 Lot 38

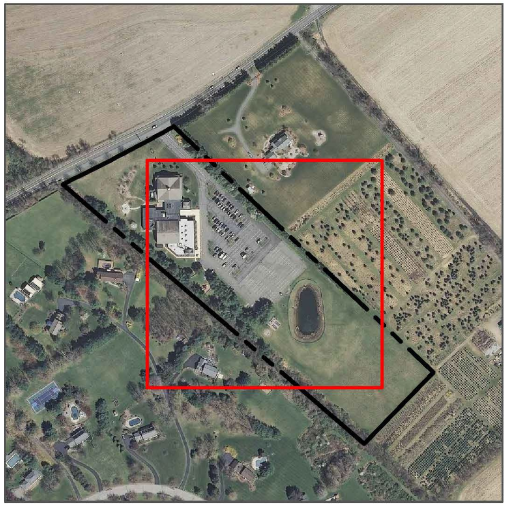
A bioretention system can be installed to infiltrate the water from three disconnected downspouts on the west side of the building. In addition, pervious pavement is proposed along the southeast corner of the parking lot to the parking lot's drainage area. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
28	136,492	6.6	68.9	626.7	0.106	3.74

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.060	10	4,710	0.17	580	$2,900
Pervious pavement	0.700	117	54,730	1.93	4,800	$120,000

GREEN INFRASTRUCTURE RECOMMENDATIONS





St. Luke Parish

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

0 50' 100'

41. WASHINGTON TOWNSHIP MUNICIPAL BUILDING

Subwatershed: Raritan River South Branch

Site Area: 42,944 sq. ft.

Address: 43 Schooleys Mountain Road
Long Valley, NJ 07853

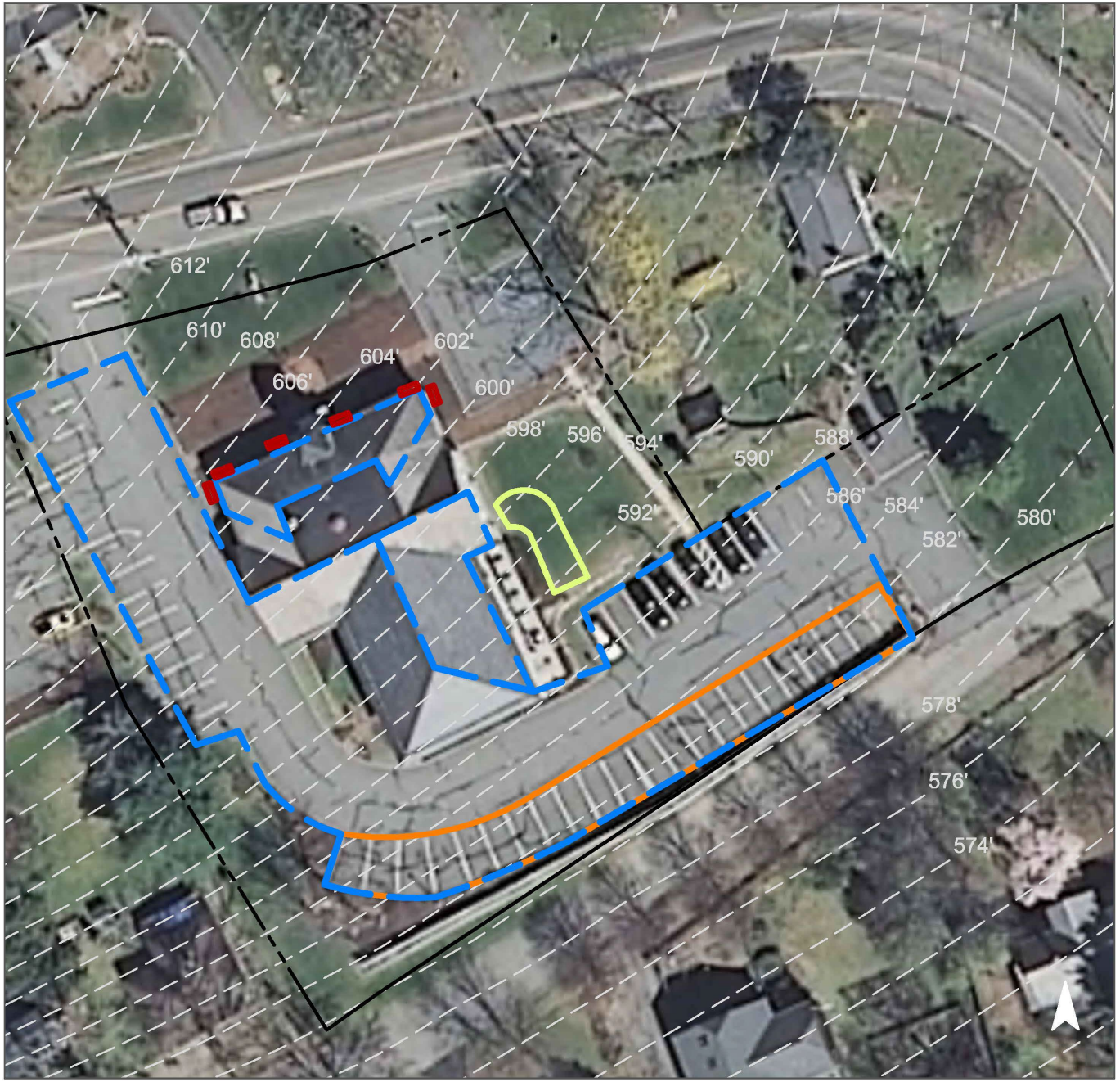
Block and Lot: Block 26 Lot 2

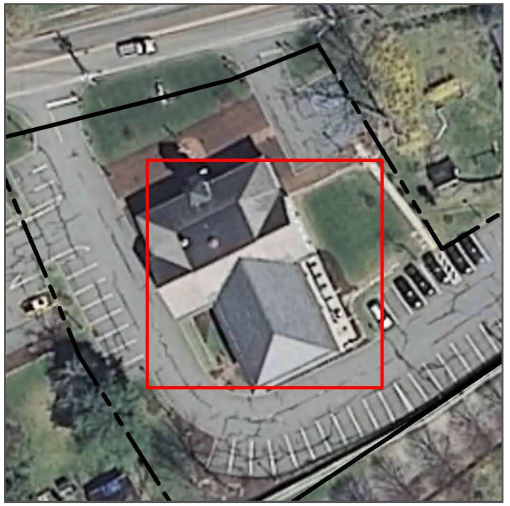
A rain garden can be installed adjacent to the building to infiltrate water from two connected downspouts. Additionally, pervious pavement can capture and infiltrate the stormwater runoff from the entire parking lot and a portion of the roof. Downspout planter boxes can be installed at downspouts to capture runoff from the roof as well. 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"
60	34,223	2.3	24.2	220.0	0.027	0.94

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	0.039	7	3,050	0.11	400	$2,000
Pervious pavement	0.519	87	40,560	1.43	4,020	$100,500
Planter boxes	n/a	5	n/a	n/a	6 (boxes)	$6,000

GREEN INFRASTRUCTURE RECOMMENDATIONS





Washington Township Municipal Building

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

0 25' 50'

42. BODY OF CHRIST MINISTRIES

Subwatershed: Raritan River South Branch

Site Area: 205,769 sq. ft.

Address: 101 Voorhees Road
Glen Gardner, NJ 08826

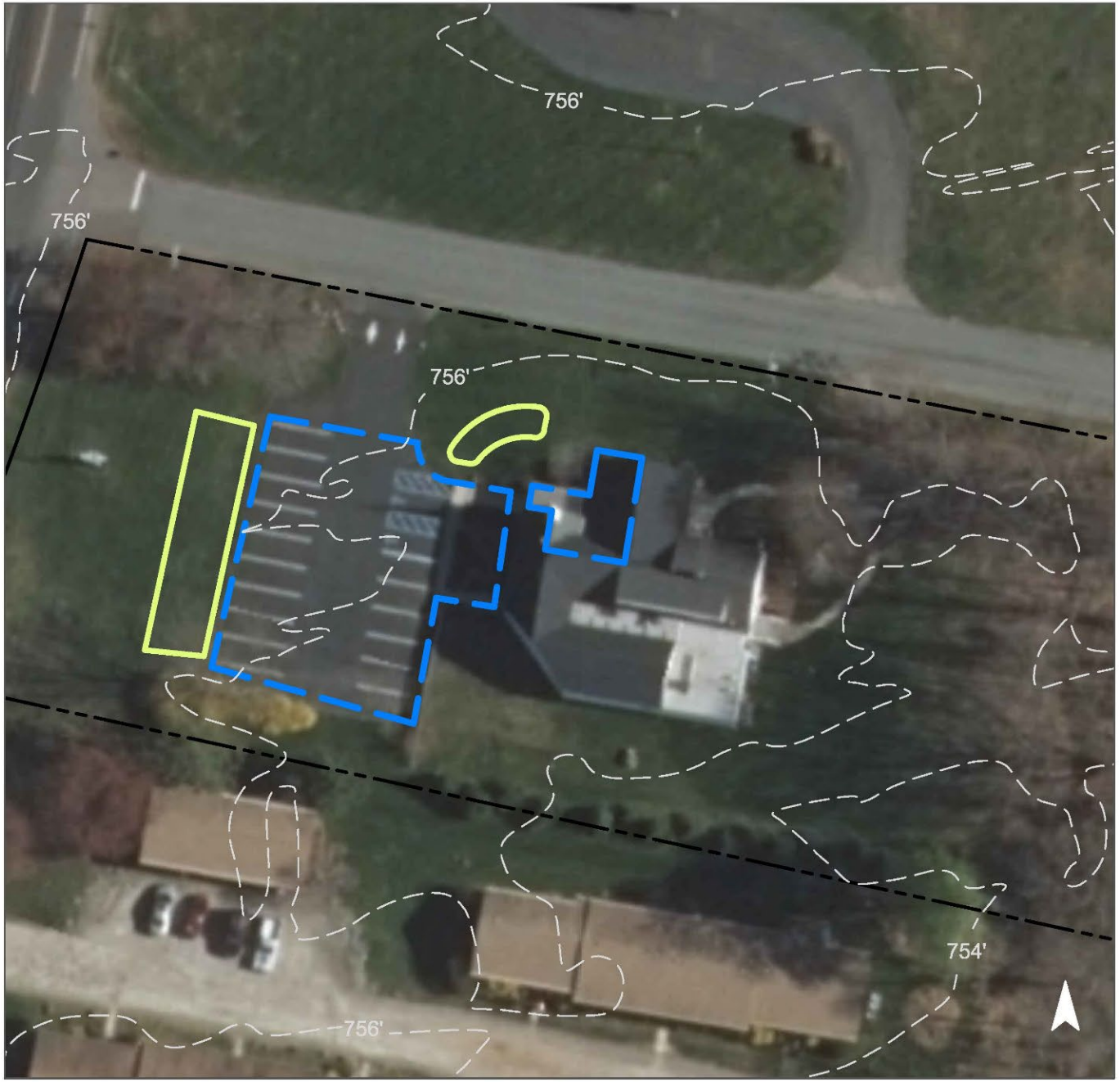
Block and Lot: Block 12, Lot 15

Two bioretention systems are proposed to infiltrate the water from the sloped lawn and a disconnected downspout. 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"
49	101,155	4.9	51.1	464.4	0.079	2.77

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	0.187	31	13,730	0.52	1,800	$9,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Body of Christ Ministries

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

0 25' 50'

43. BUNNVALE LIBRARY

Subwatershed: Raritan River South Branch

HUC14 ID: 02030105010070

Site Area: 43,965 sq. ft.

Address: 7 Bunnvale Road
Califon, NJ 07830

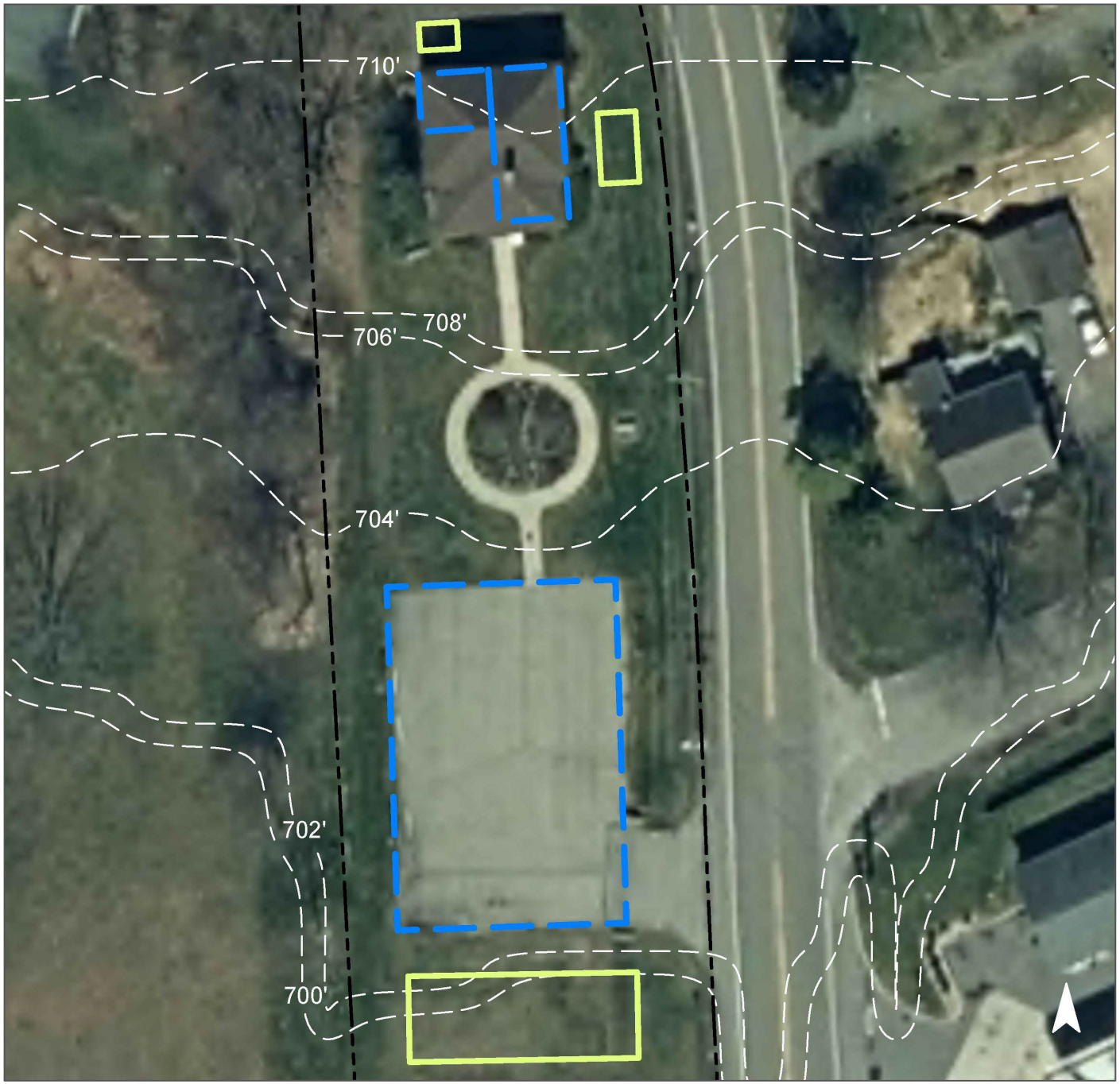
Block and Lot: Block 10, Lot 31

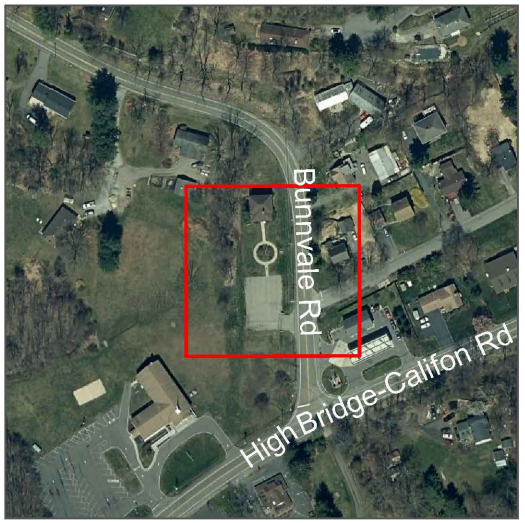
Rain gardens can be installed to the northeast and to the west of the building using the existing disconnected downspouts to capture, treat, and infiltrate the stormwater runoff from the rooftop. Downspout redirection may be needed. An additional rain garden can be constructed to the south of the parking lot to capture, treat, and infiltrate the stormwater runoff from the asphalt. 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 49.4"
31	13,775	0.7	7.0	63.2	0.011	0.42

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	6,420	0.188	29	12,870	0.48	1,605	$16,050

GREEN INFRASTRUCTURE RECOMMENDATIONS





Bunnvale Library

- bioretention system
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 20' 40'

44. CALIFON GENERAL STORE

Subwatershed: Raritan River South Branch

Site Area: 12,272 sq. ft.

Address: 75 Main Street
Califon, NJ 07830

Block and Lot: Block 5, Lot 3

Porous pavement can be installed in the rear parking spaces to aid in infiltration of stormwater. A downspout planter box can be constructed along the building to allow roof runoff to be reused. 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"
38	4,664	0.2	2.4	21.4	0.004	0.13

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	0.117	20	8,841	0.33	800	$20,000
Planter box	N/A	2	N/A	N/A	1 (box)	$1,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Califon General Store

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

0 20' 40'

45. CALIFON MUNICIPAL BUILDING

Subwatershed: Raritan River South Branch

Site Area: 11,422 sq. ft.

Address: 39 Academy Street
Califon, NJ 07830

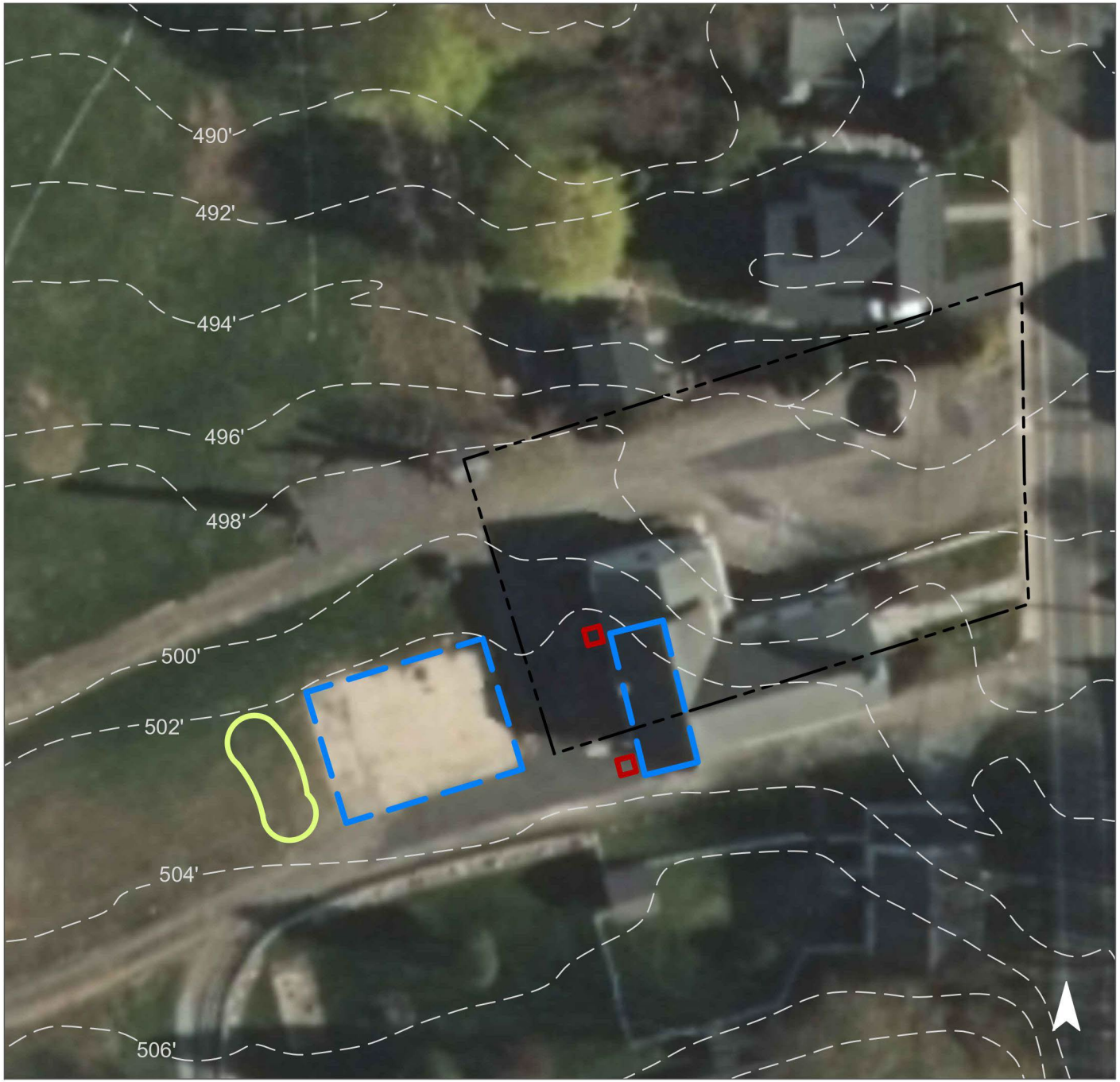
Block and Lot: Block 18, Lot 13.01

A rain garden can be installed to infiltrate stormwater draining from the parking lot. Downspout planter boxes can be constructed along the building to allow roof runoff to be reused. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
42	4,817	0.2	2.4	22.1	0.004	0.13

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	0.045	8	3,418	0.13	440	$2,200
Planter boxes	N/A	2	N/A	N/A	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Califon Municipal Building

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

0 20' 40'

46. CALIFON TRAIN STATION

Subwatershed: Raritan River South Branch

Site Area: 41,501 sq. ft.

Address: 15 Center Street
Califon, NJ 07830

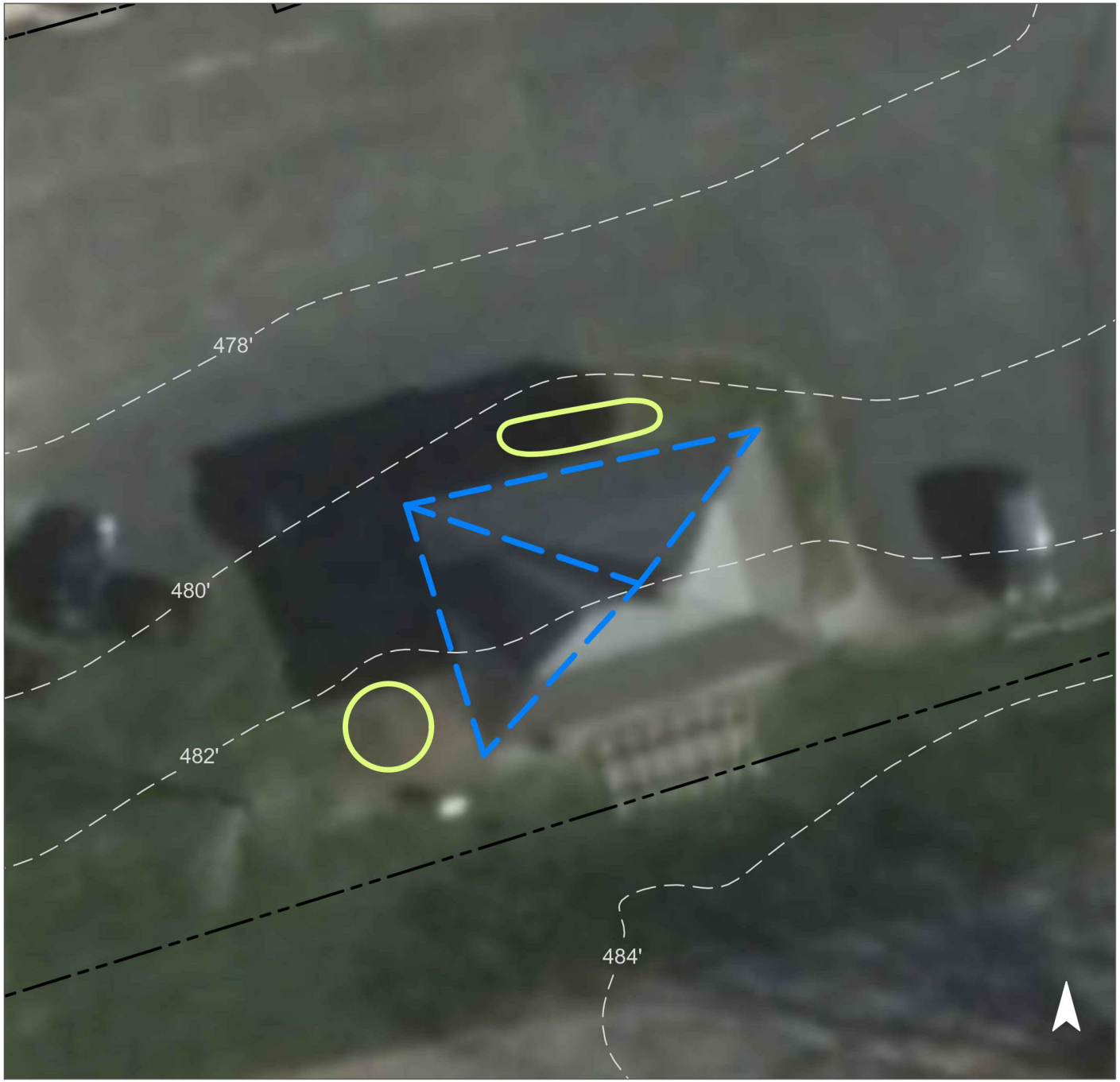
Block and Lot: Block 6, Lot 41

Rain gardens can be installed north of the building and in the turfgrass area east of the building to infiltrate stormwater draining from the 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"
47	19,639	0.9	9.9	90.2	0.015	0.54

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	0.022	4	1,661	0.07	195	$975

GREEN INFRASTRUCTURE RECOMMENDATIONS



Califon Train Station

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

0 10' 20'

47. CALIFON UNITED METHODIST CHURCH

Subwatershed: Raritan River South Branch

Site Area: 39,832 sq. ft.

Address: 15 Raritan River Road
Califon, NJ 07830

Block and Lot: Block 6, Lot 11

Two rain gardens can be installed to capture, treat, and infiltrate stormwater runoff from the roof. Downspout planter boxes can be constructed along the building to allow roof runoff to be reused. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
65	25,759	1.2	13.0	118.3	0.020	0.71

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.067	11	5,109	0.19	645	$3,225
Planter boxes	N/A	2	N/A	N/A	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Califon United Methodist Church

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

0 20' 40'

48. CALIFON WINE AND SPIRITS

Subwatershed: Raritan River South Branch

Site Area: 23,453 sq. ft.

Address: 430 County Road 513
Califon, NJ 07830

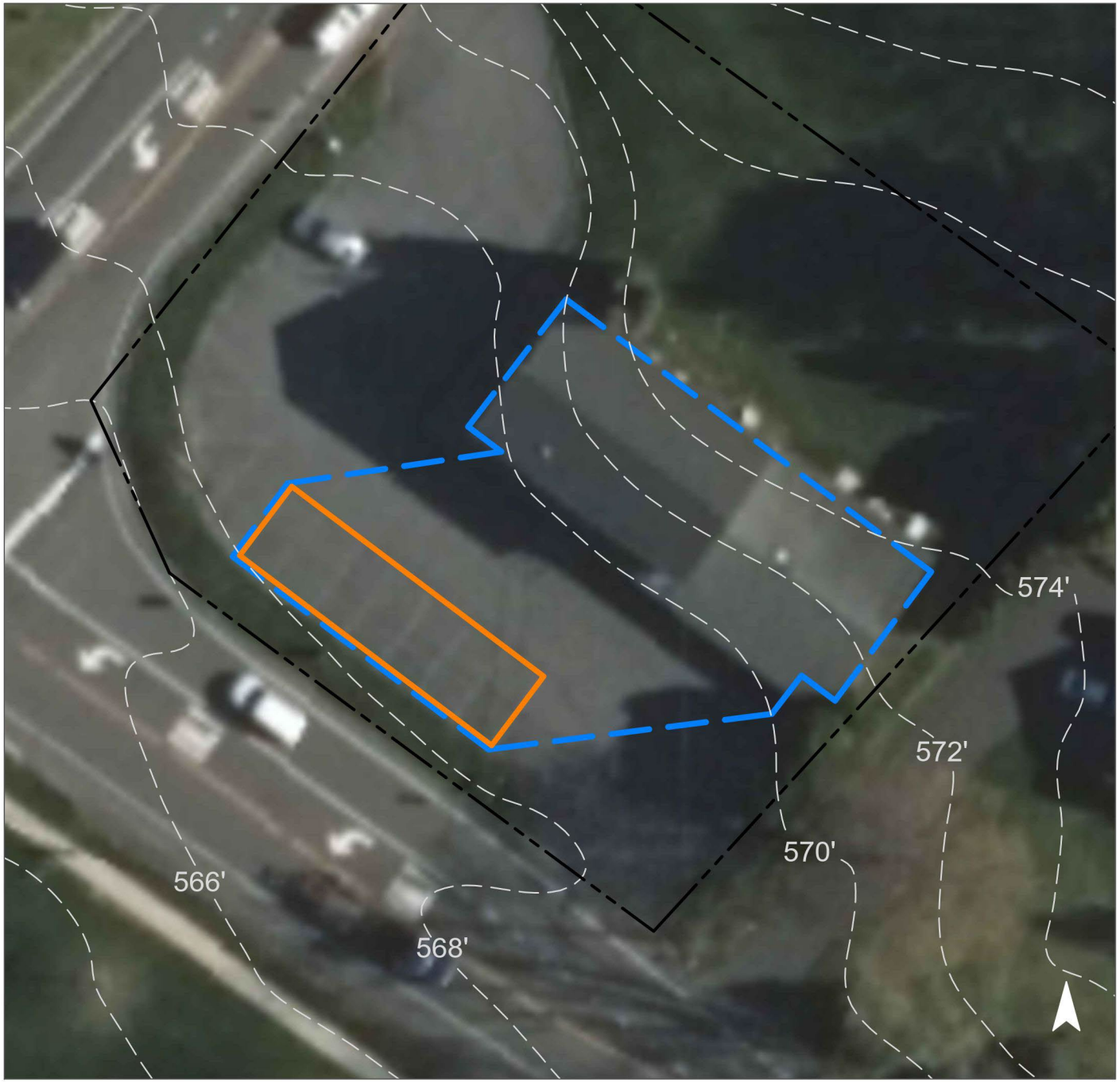
Block and Lot: Block 3, Lot 1

Areas of the parking lot can be retrofitted with porous pavement to capture stormwater runoff from the parking lot. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
65	15,317	0.7	7.7	70.3	0.012	0.42

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavement	0.172	29	13,030	0.49	1,135	$28,375

GREEN INFRASTRUCTURE RECOMMENDATIONS



Califon Wine and Spirits

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

0 15' 30'

49. COUGHLIN FUNERAL HOME

Subwatershed: Raritan River South Branch

Site Area: 7,381 sq. ft.

Address: 15 Academy Street
Califon, NJ 07830

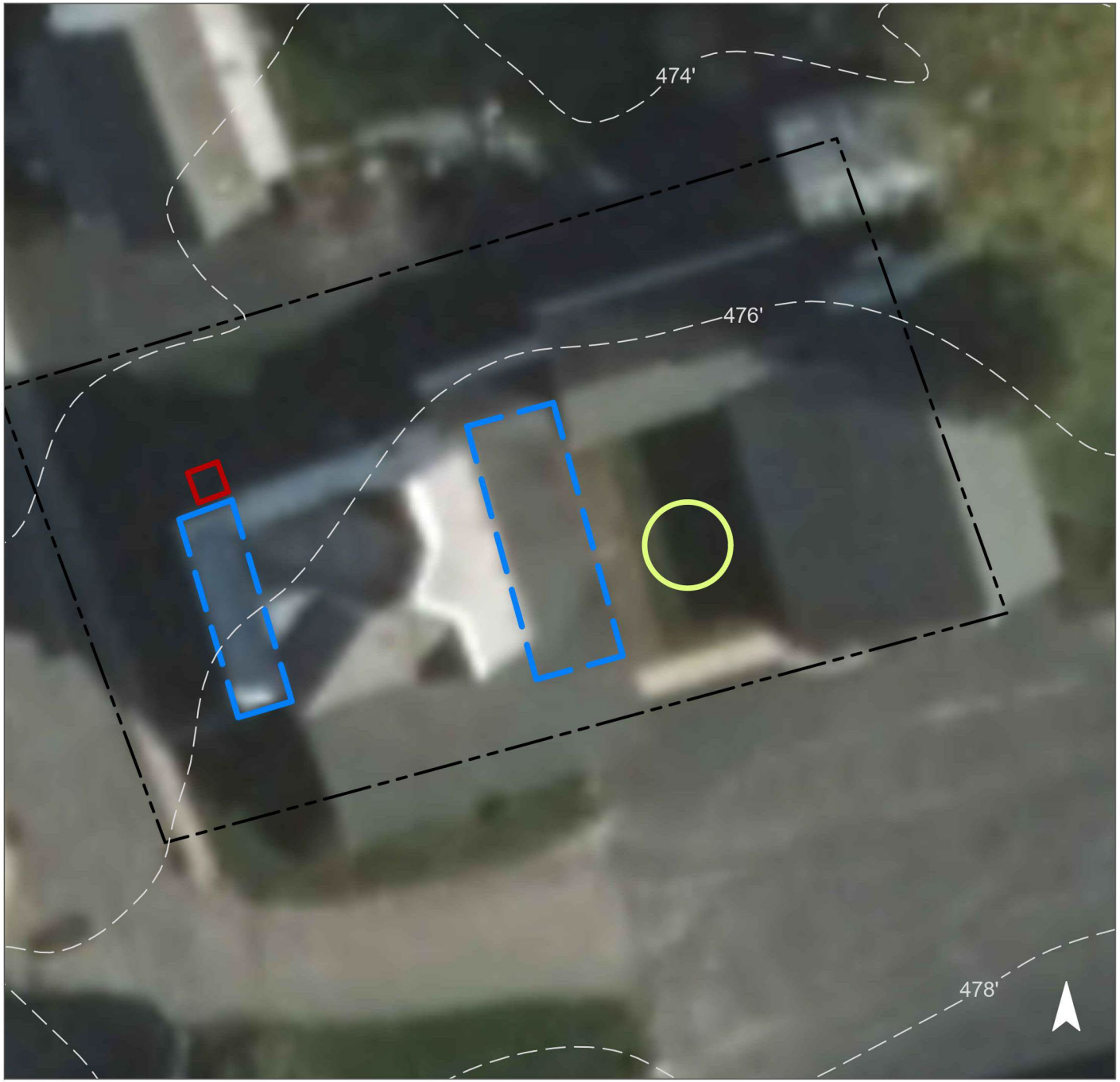
Block and Lot: Block 6, Lot 27

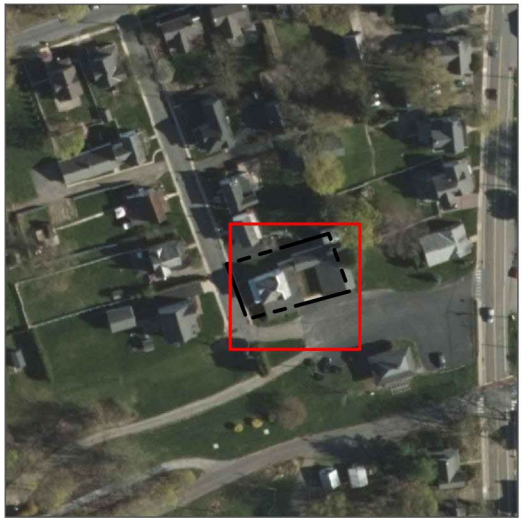
A central rain garden can be installed to capture stormwater runoff from the inward sloping rooftops. A downspout planter box can be constructed along the building to allow roof runoff to be reused. A preliminary soil assessment suggests that more soil testing would be required before determining the 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"
55	4,062	0.2	2.1	18.7	0.003	0.11

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.010	2	793	0.03	100	$500
Planter box	N/A	1	N/A	N/A	1 (box)	$1,000

GREEN INFRASTRUCTURE RECOMMENDATIONS





Coughlin Funeral Home

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

0 10' 20'

50. GROENDYKE ASSOCIATES

Subwatershed: Raritan River South Branch

Site Area: 26,175 sq. ft.

Address: 295 County Road 513
Califon, NJ 07830

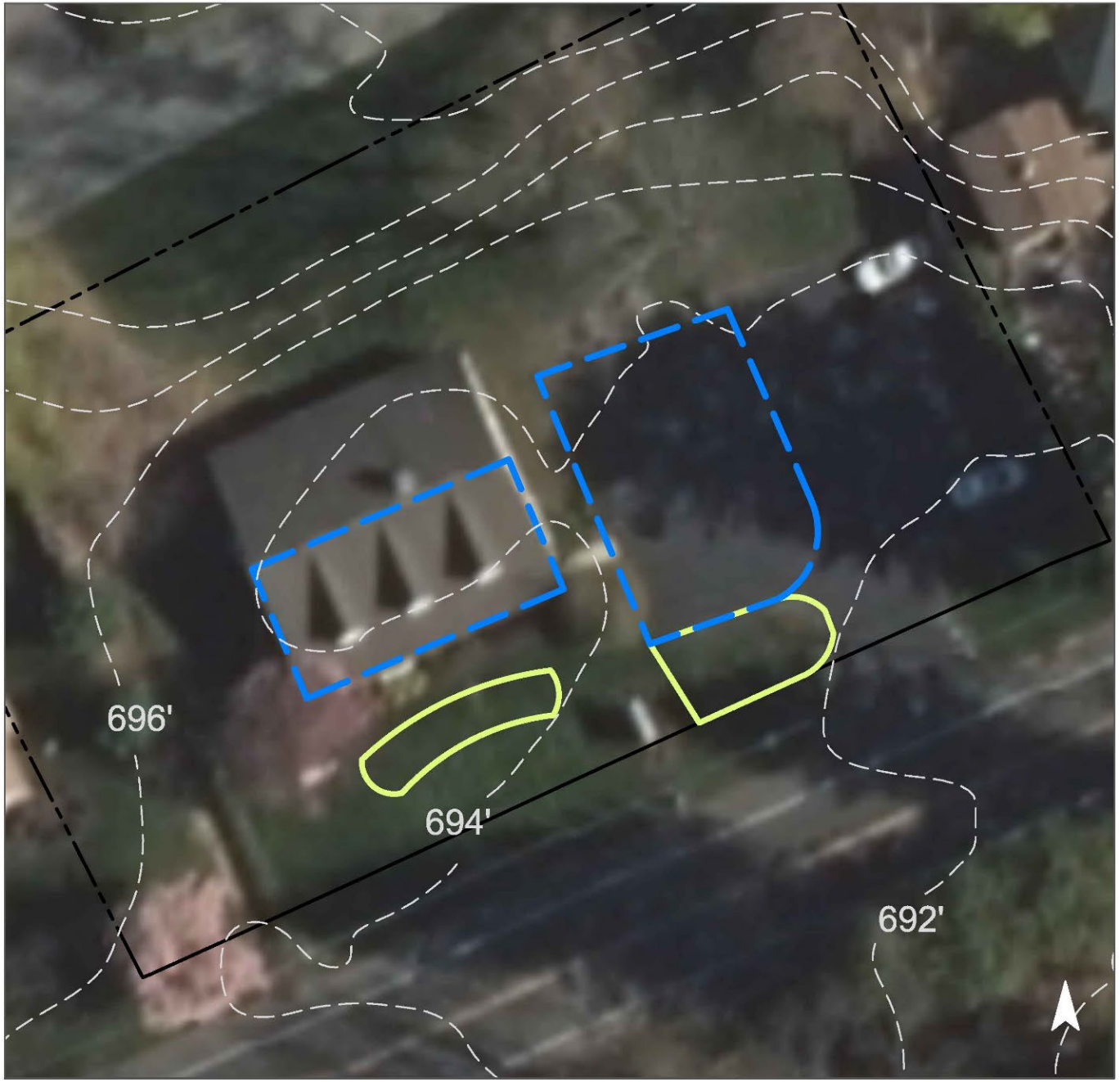
Block and Lot: Block 25, Lot 9

Two bioretention systems are proposed in the front of the building to infiltrate the water from the roof as well as the downspouts. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
57	15,042	0.7	7.6	69.1	0.012	0.41

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	0.093	16	6,800	0.26	890	$4,450

GREEN INFRASTRUCTURE RECOMMENDATIONS



Groendyke Associates

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

0 25' 50'

51. JAMES M MURRAY CPA

Subwatershed: Raritan River South Branch

Site Area: 44,433 sq. ft.

Address: 37 School Street
Califon, NJ 07830

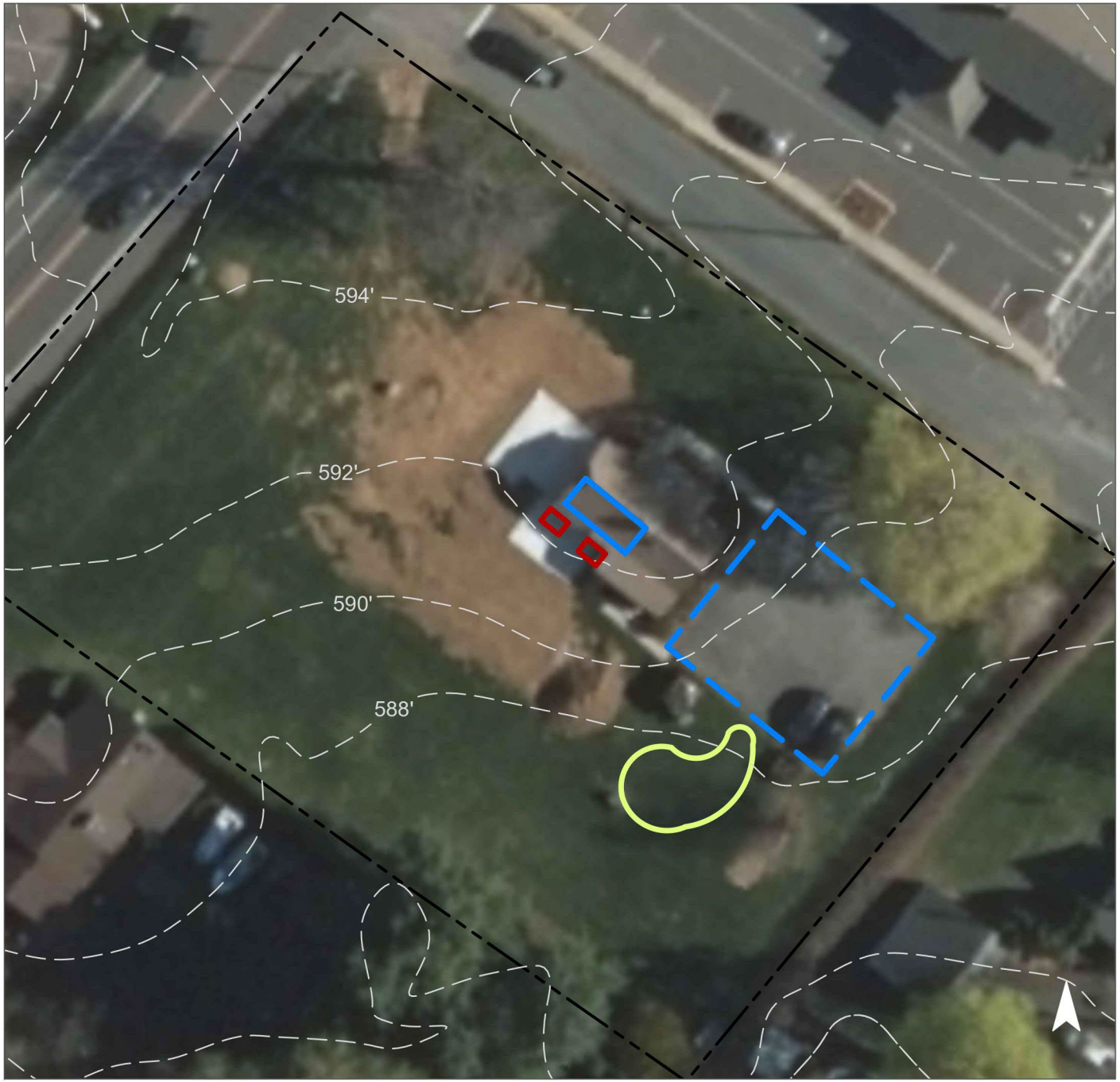
Block and Lot: Block 3, Lot 5,6

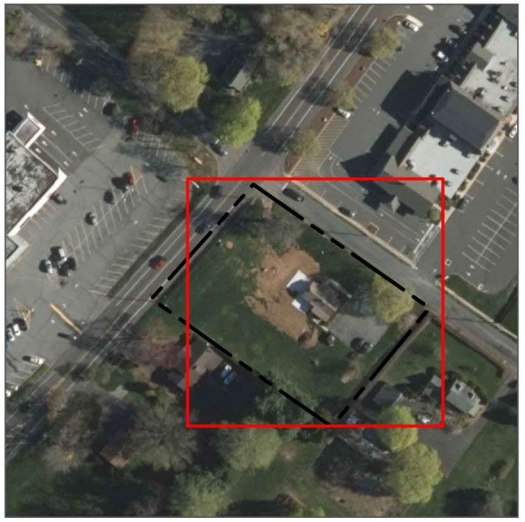
A rain garden can be installed at the end of the parking lot to capture, treat, and infiltrate stormwater runoff from the parking lot . Downspout planter boxes can be constructed along the building to allow roof runoff to be reused. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
20	8,775	0.4	4.4	40.3	0.003	0.11

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.063	11	4,757	0.18	600	$3,000
Planter boxes	N/A	2	N/A	N/A	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS





James M Murray CPA

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

0 20' 40'

52. LOWER VALLEY PRESBYTERIAN CHURCH

Subwatershed: Raritan River South Branch

Site Area: 101,066 sq. ft.

Address: 445 County Road 513
Califon, NJ 07830

Block and Lot: Block 1, Lot 2

A rain garden can be installed to capture, treat, and infiltrate stormwater runoff from the roof. Downspout planter boxes can be constructed along the building to allow roof runoff to be reused. 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"
47	47,178	2.3	23.8	216.6	0.037	1.29

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	0.018	3	1,354	0.05	170	$850
Planter boxes	N/A	3	N/A	N/A	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Lower Valley Presbyterian Church

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

0 10' 20'

53. OLDWICK VILLAGE AUTO BODY

Subwatershed: Raritan River South Branch

Site Area: 167,230 sq. ft.

Address: 363 County Road 513
Califon, NJ 07830

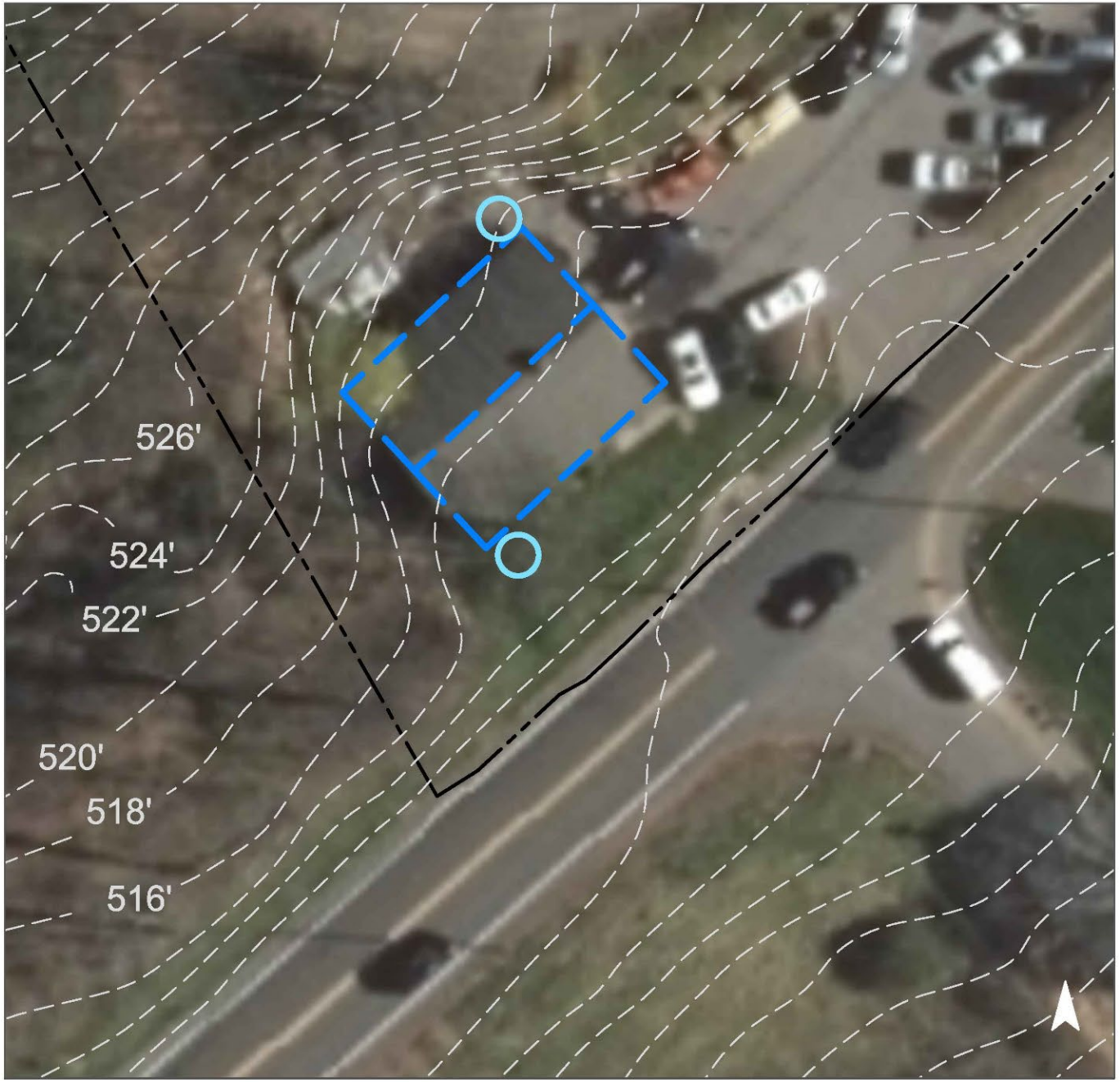
Block and Lot: Block 24, Lot 20

Two rainwater harvesting cisterns are proposed on opposite corners of the building to capture stormwater runoff from the roof. The water can be used for washing vehicles, watering plants, or other non-potable purposes. 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"
7	12,467	0.6	6.3	57.2	0.010	0.34

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
Rainwater harvesting	0.052	9	1,000	0.04	1,000 (gal)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Oldwick Village Auto Body

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

0 25' 50'

54. ST. JOHN NEUMANN ROMAN CATHOLIC CHURCH

Subwatershed: Raritan River South Branch

HUC14 ID: 02030105010070

Site Area: 1,350,160 sq. ft.

Address: 398 County Road 513
Califon, NJ 07830

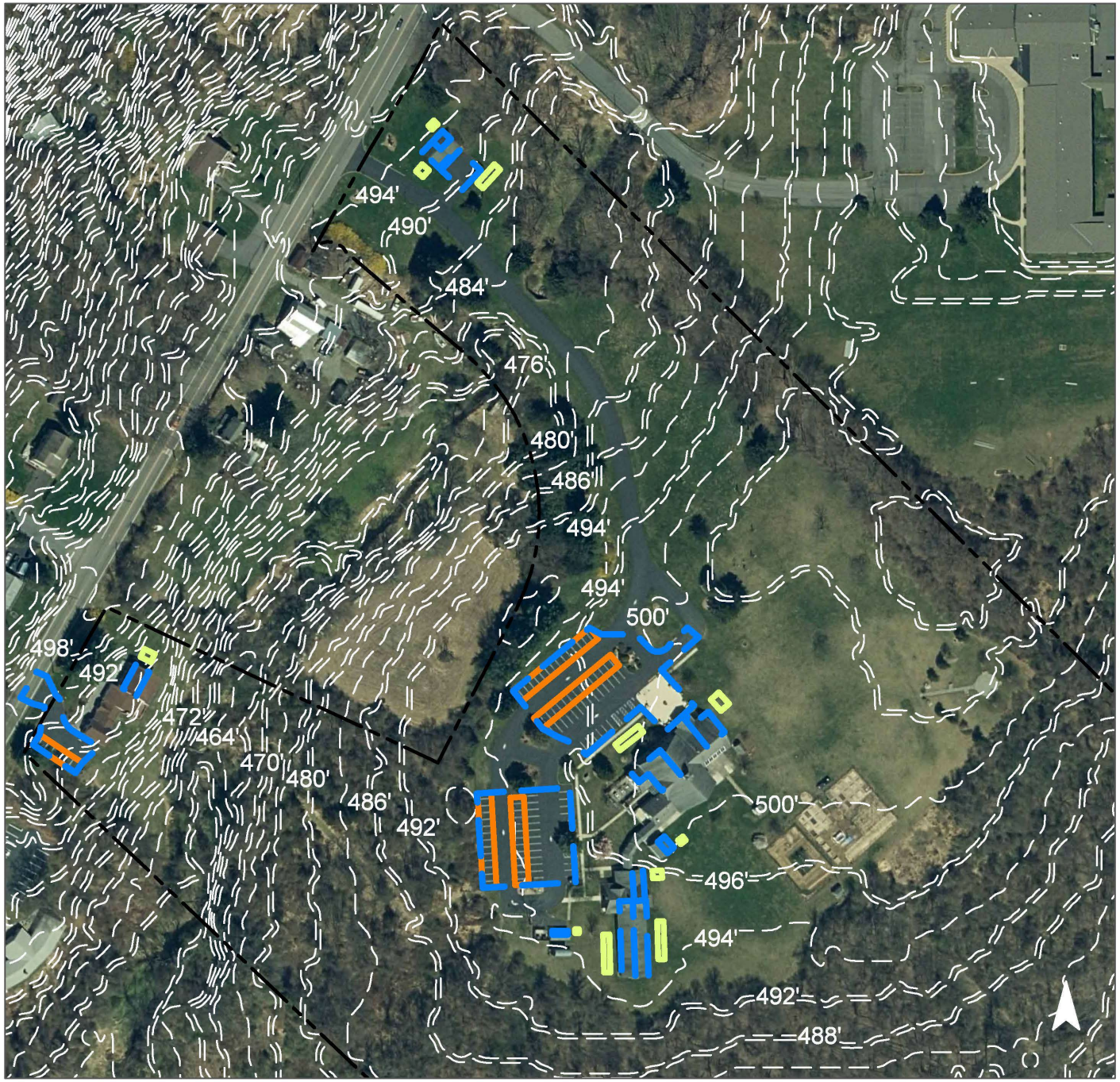
Block and Lot: Block 21, Lots 7 & 7.02

Rain gardens can be installed in multiple grass areas around the property to capture, treat, and infiltrate the stormwater runoff from various rooftops. This may require downspout redirections and disconnections, as well as trench drains. Existing parking spaces in the northern, southern, and western parking lots can be converted into pervious pavement to capture and infiltrate the stormwater runoff from the asphalt, roadway, and sidewalks. This may require trench drains. 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 49.4"
9	122,936	5.9	62.1	564.4	0.096	3.79

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	9,830	0.288	44	19,710	0.74	2,460	$24,600
Pervious pavement	43,010	1.258	188	86,240	3.24	10,050	$251,250

GREEN INFRASTRUCTURE RECOMMENDATIONS



St. John Neumann Roman Catholic Church

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 100' 200'

55. STAIANOS FURNITURE

Subwatershed: Raritan River South Branch

Site Area: 94,240 sq. ft.

Address: 442 County Road 513 Califon, NJ 07830

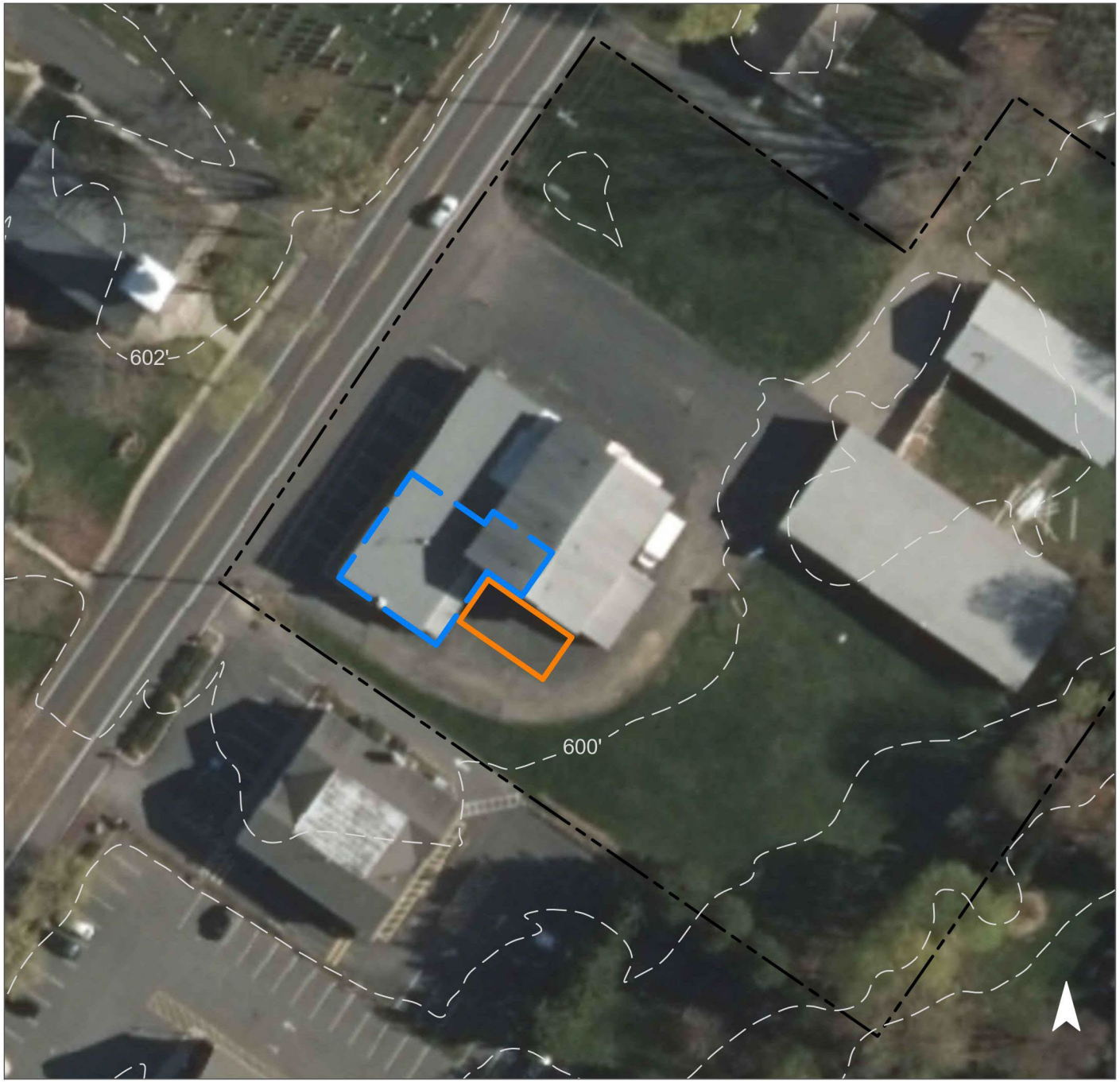
Block and Lot: Block 4, Lot 2

Porous pavement can be installed along the parking spots in the back lot of the building. The downspouts currently empty onto asphalt which is impervious and does not aid in infiltration. 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"
66	61,927	3.0	31.3	284.3	0.048	1.70

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavement	0.071	12	5,401	0.20	800	$20,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Staianos Furniture

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

0 30' 60'

56. UNITED STATES POSTAL SERVICES

Subwatershed: Raritan River South Branch

Site Area: 10,212 sq. ft.

Address: 53 Main Street
Califon, NJ 07830

Block and Lot: Block 19, Lot 5

Porous pavement can be installed to collect stormwater from both the disconnected downspouts as well as from the parking lot surface. 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"
79	8,102	0.4	4.1	37.2	0.006	0.22

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
Pervious pavement	0.095	16	7,188	0.27	1,000	$25,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

United States Postal Service

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

0 20' 40'

57. BOROUGH OF HIGH BRIDGE MUNICIPAL BUILDINGS

Subwatershed: Raritan River South Branch

Site Area: 233,539 sq. ft.

Address: 97 West Main Street
High Bridge, NJ 08829

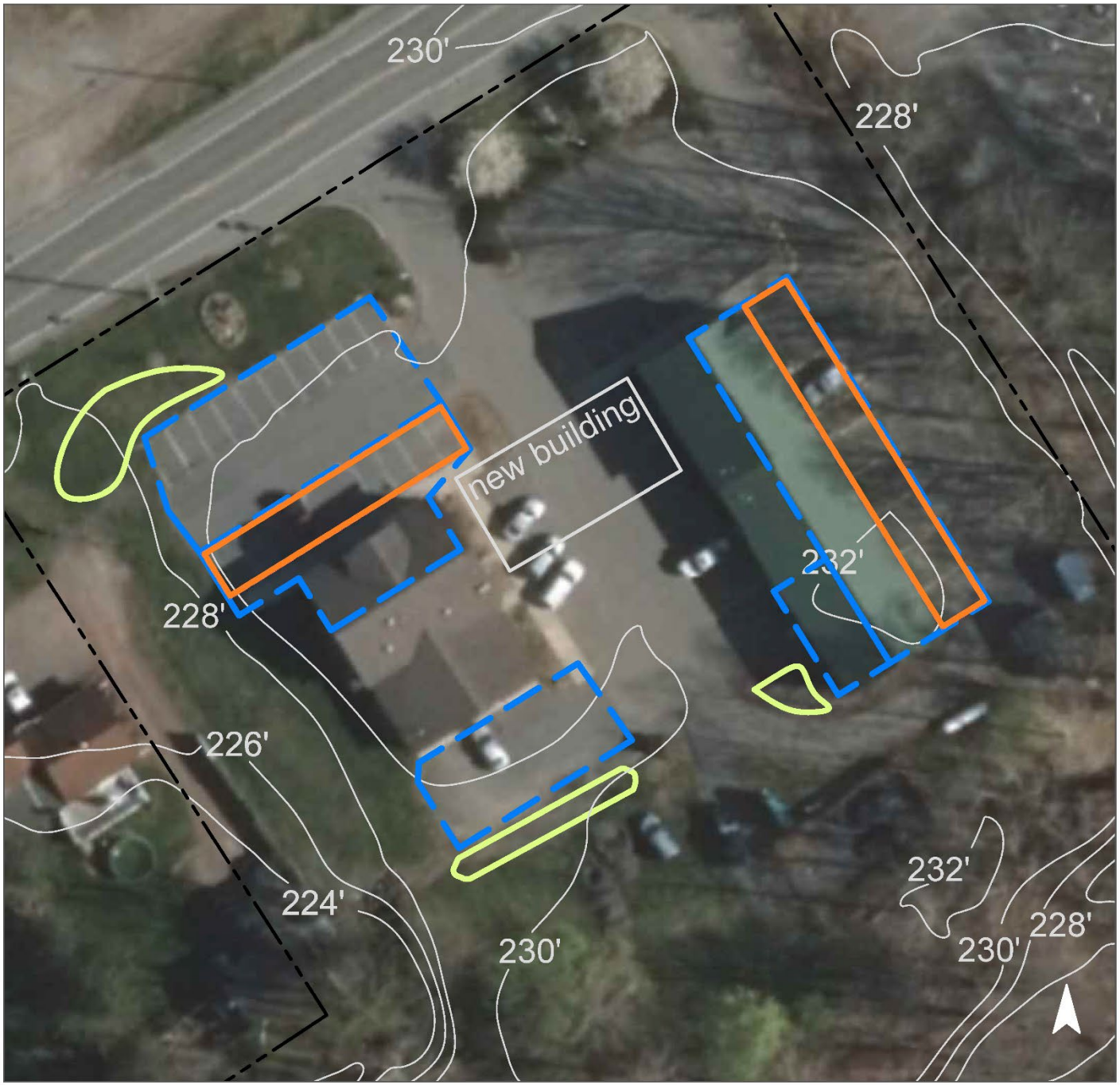
Block and Lot: Block 30, Lot 12

Parking spaces in the parking lot to the north and east of the building can be converted to porous pavement to capture and infiltrate stormwater runoff from the parking lot and downspouts. Porous pavements can support parked vehicles while allowing stormwater to infiltrate and have an underlying stone layer to store and slowly release captured stormwater into the ground. Rain gardens can be installed in the turfgrass areas adjacent to the parking lot areas to capture additional stormwater runoff from the 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"
23	53,215	2.6	26.9	244.3	0.041	1.46

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	0.172	29	13,030	0.50	1,650	$8,250
Pervious pavement	0.206	35	15,630	0.60	3,925	$98,125

GREEN INFRASTRUCTURE RECOMMENDATIONS



Borough of High Bridge Municipal Buildings

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

0 50' 100'

58. CLINTON PRESBYTERIAN CHURCH

Subwatershed: Raritan South River Branch

Site Area: 71,446 sq. ft.

Address: 91 Center Street
Clinton, NJ 08809

Block and Lot: Block 14, Lots 20 & 21

Porous pavement can be installed in the northwestern corner of the parking lot to capture stormwater from the parking lot as well as the nearby building's disconnected downspouts. A downspout planter box can be installed next to the south entrance of the building to capture and treat the rooftop runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
44	31,409	1.5	15.9	144.2	0.024	0.86

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	0.117	20	8,890	0.33	970	$24,250
Planter box	n/a	<1	n/a	n/a	1 (box)	$1,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Clinton Presbyterian Church

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

0 25' 50'

59. CLINTON UNITED METHODIST CHURCH

Subwatershed: Raritan River South Branch

HUC14 ID: 02030105010080

Site Area: 56,694 sq. ft.

Address: 12 Halstead Street
Clinton, NJ 08809

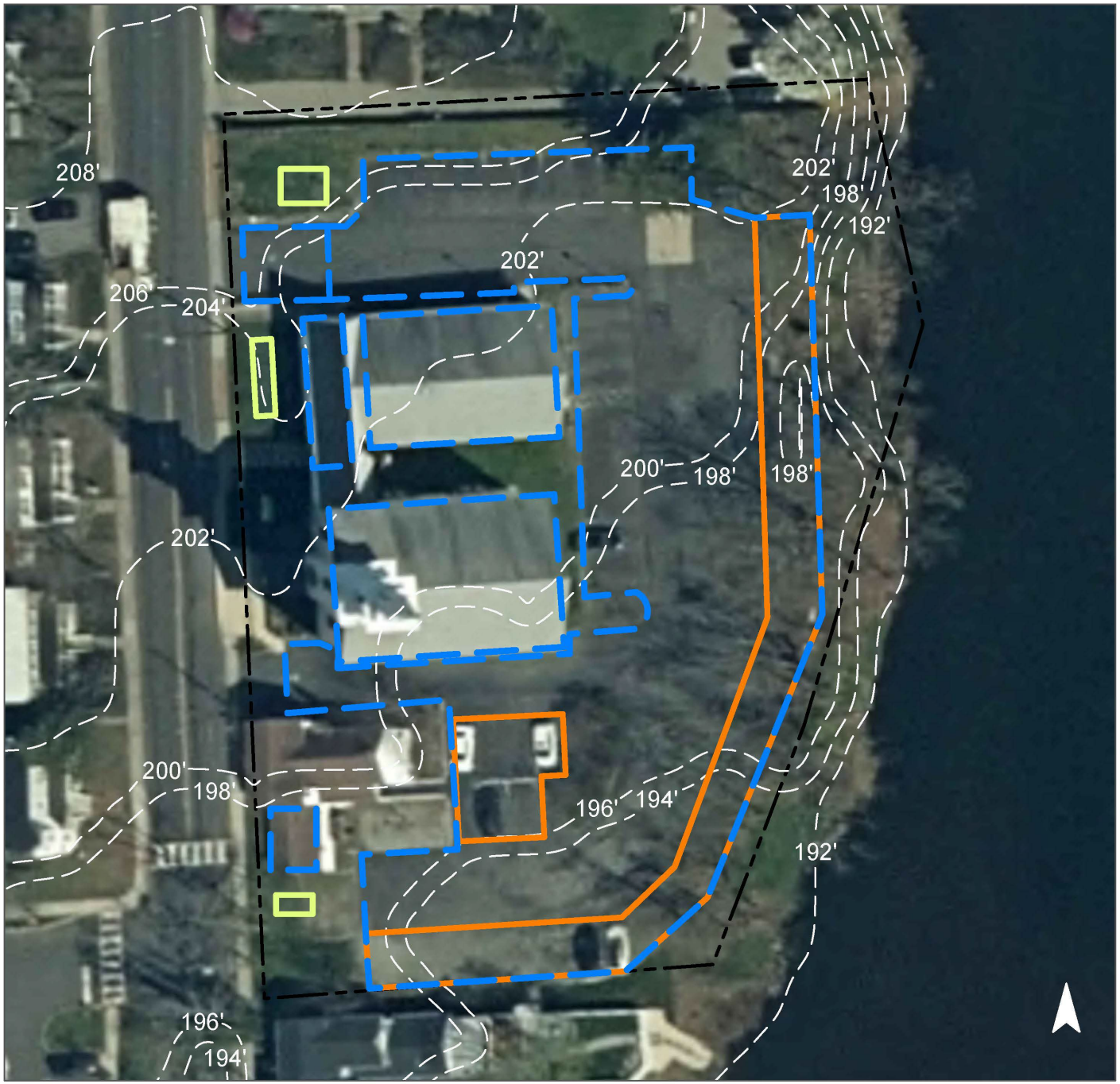
Block and Lot: Block 15, Lot 4

Rain gardens can be installed in multiple grass areas around the property to capture, treat, and infiltrate the stormwater runoff from the asphalt and rooftops. This will require downspout disconnections, trench drains, and curb cuts. Existing parking spaces in the east and south of the lot can be converted into pervious pavement to capture and infiltrate the stormwater runoff from the asphalt. The pervious pavement will also manage some rooftop runoff, as the connected downspouts on the east of the church building direct runoff to the parking lot. Trench drains will be needed to intercept and redirect some of the parking lot runoff to the pervious pavement. 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 49.4"
79	45,045	2.2	22.7	206.8	0.035	1.39

Recommended Green Infrastructure Practices	Drainage Area (sq. ft.)	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	1,605	0.047	8	3,220	0.12	405	$4,050
Pervious pavement	33,220	0.972	144	66,610	2.50	6,965	$174,125

GREEN INFRASTRUCTURE RECOMMENDATIONS



Clinton United Methodist Church

- bioretention system
- pervious pavement
- captured drainage area
- property line
- 2020 Aerial: NJOIT, OGIS

0 25' 50'

60. EAST MAIN STREET ALLEYWAY

Subwatershed: Raritan River South Branch

Site Area: 121,730 sq. ft.

Address: Washington Avenue
High Bridge, NJ 08829

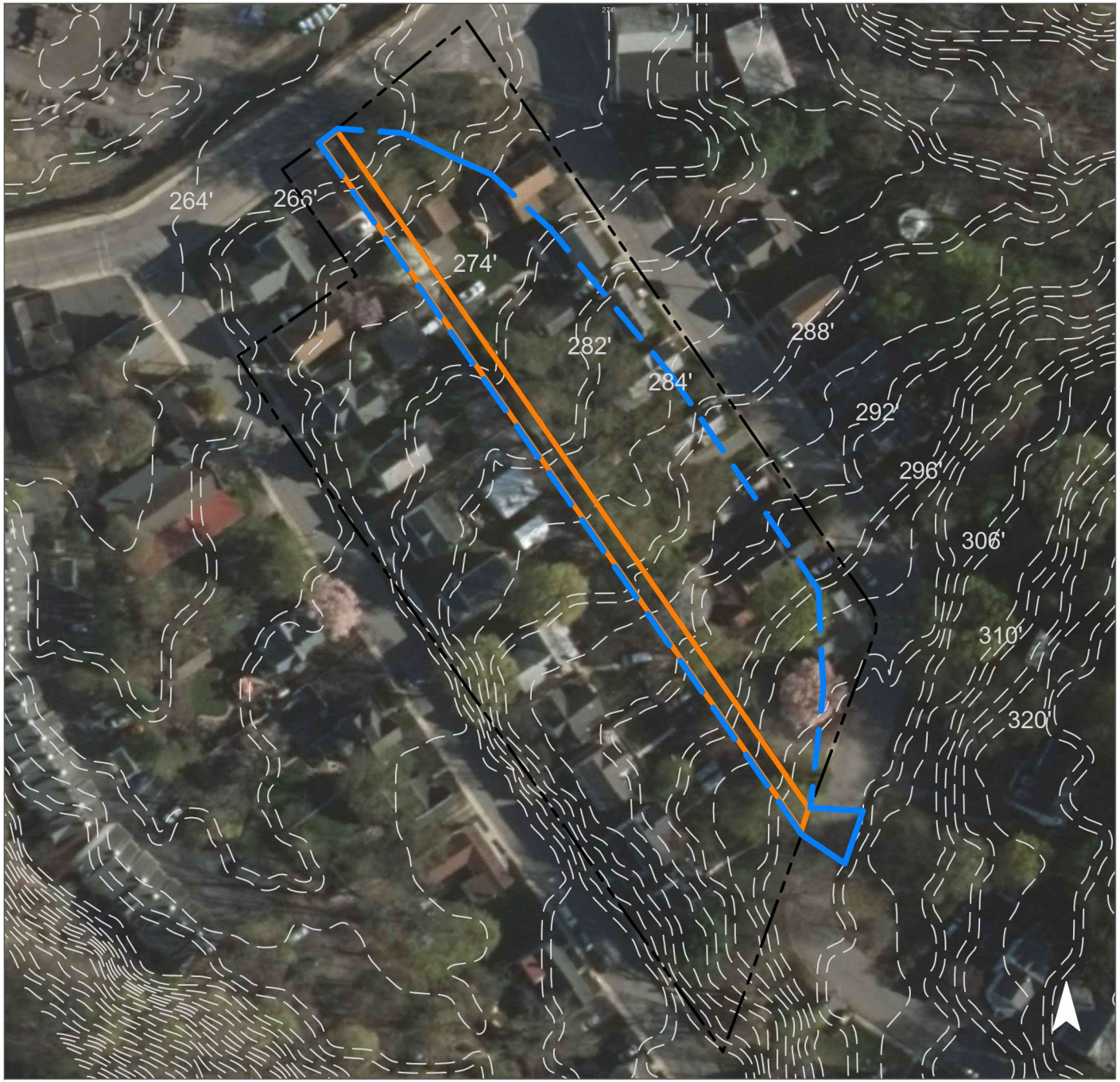
Block and Lot: Block 36, Lots 2-19 & 21

The alleyway between Washington Avenue and Elm Street can be converted to a pervious pavement road. It will capture and infiltrate the nearby stormwater runoff from Washington Avenue, Elm Street, and the adjacent properties.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
46	55,855	2.7	28.2	256.5	0.044	1.53

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Pervious pavement	1.409	236	106,770	4.13	8,240	$206,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



East Main Street Alleyway

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

0 50' 100'

61. HIGH BRIDGE DEPARTMENT OF WORKS

Subwatershed: Raritan River South Branch

Site Area: 139,031 sq. ft.

Address: 26 Main Street
High Bridge, NJ 08829

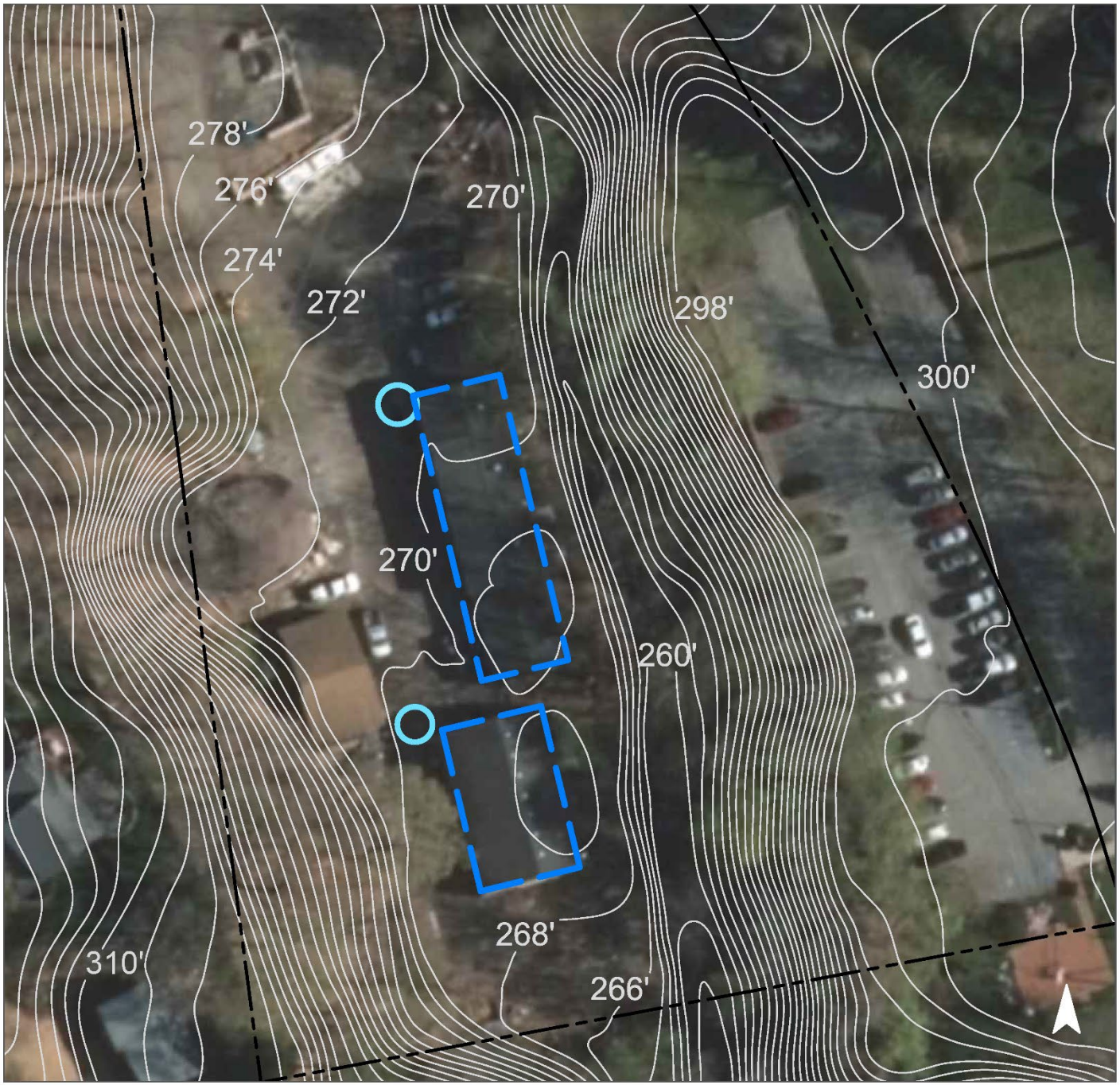
Block and Lot: Block 25
Lot 1

Downspouts on the garages at the High Bridge Department of Works can be connected to cisterns to harvest rainwater from the rooftops. Collected rainwater from the cisterns can then be used for washing public works vehicles as part of a green car wash or be used to water landscaping. 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	57,929	2.8	29.3	266.0	0.045	1.59

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Rainwater harvesting	0.167	28	5,000	0.19	5,000 (gal)	$10,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



High Bridge
Department of Works

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

0 30' 60'

62. HIGH BRIDGE ELEMENTARY SCHOOL

Subwatershed: Raritan River South Branch

Site Area: 983,059 sq. ft.

Address: 40 Fairview Avenue
High Bridge, NJ 08829

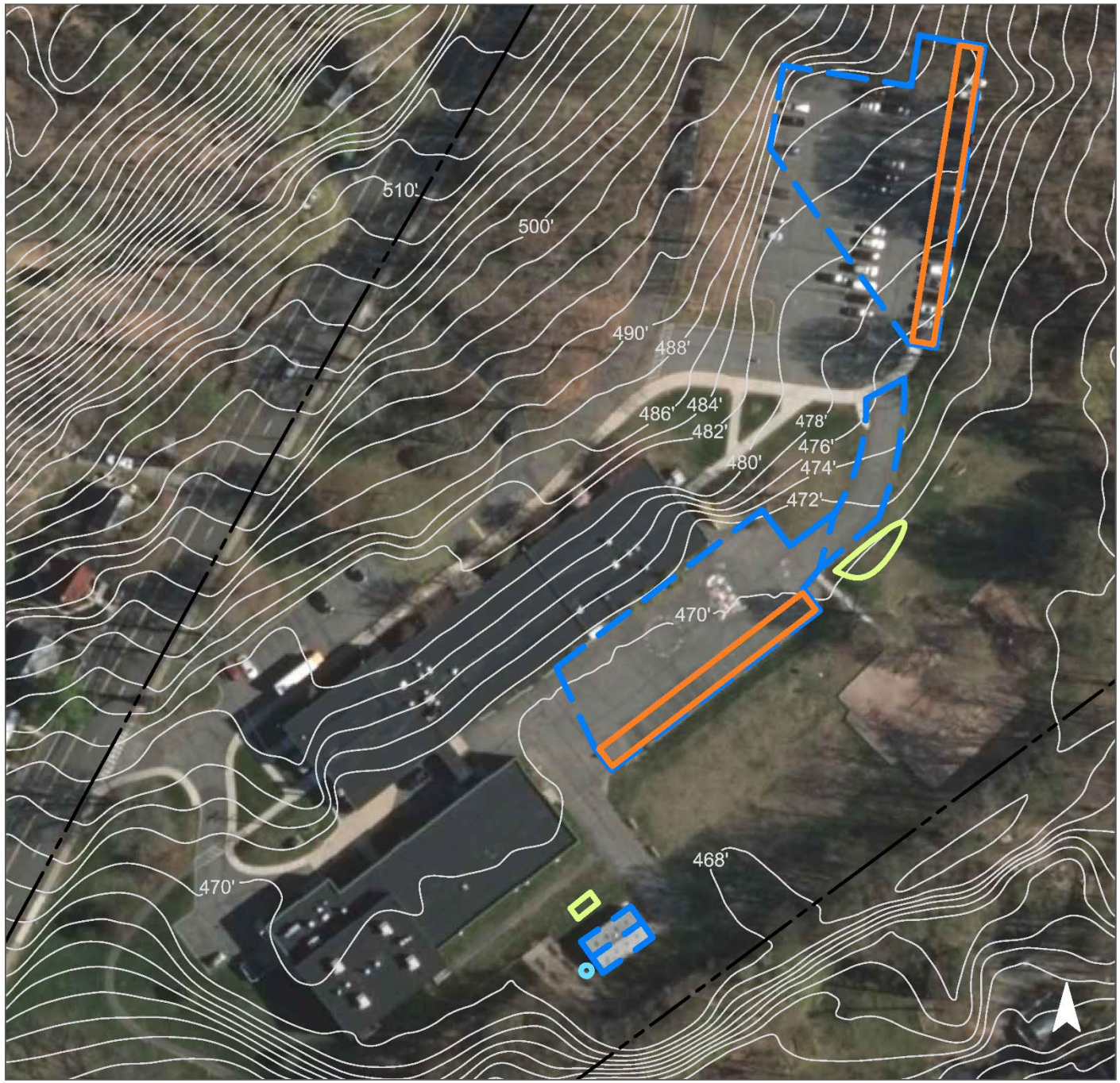
Block and Lot: Block 15, Lot 19

A rain garden can be installed in the turfgrass area near the garden shed and another near the rear parking lot to capture, treat, and infiltrate stormwater runoff from the roof and parking lot. Parking spaces can be converted to porous pavement to intercept water before reaching nearby catch basins. A small cistern could be installed on the shed to collect water for use in watering the garden. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
20	197,850	9.5	99.9	908.4	0.154	5.43

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.083	14	6,270	0.24	800	$4,000
Pervious pavement	0.791	132	59,940	2.32	6,700	$167,500
Rainwater harvesting	0.013	2	400	0.02	400 (gal)	$800

GREEN INFRASTRUCTURE RECOMMENDATIONS



High Bridge Elementary School

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

0 50' 100'

63. HIGH BRIDGE FIRE DEPARTMENT

Subwatershed: Raritan River South Branch

Site Area: 132,142 sq. ft.

Address: 7 Maryland Avenue
High Bridge, NJ 08829

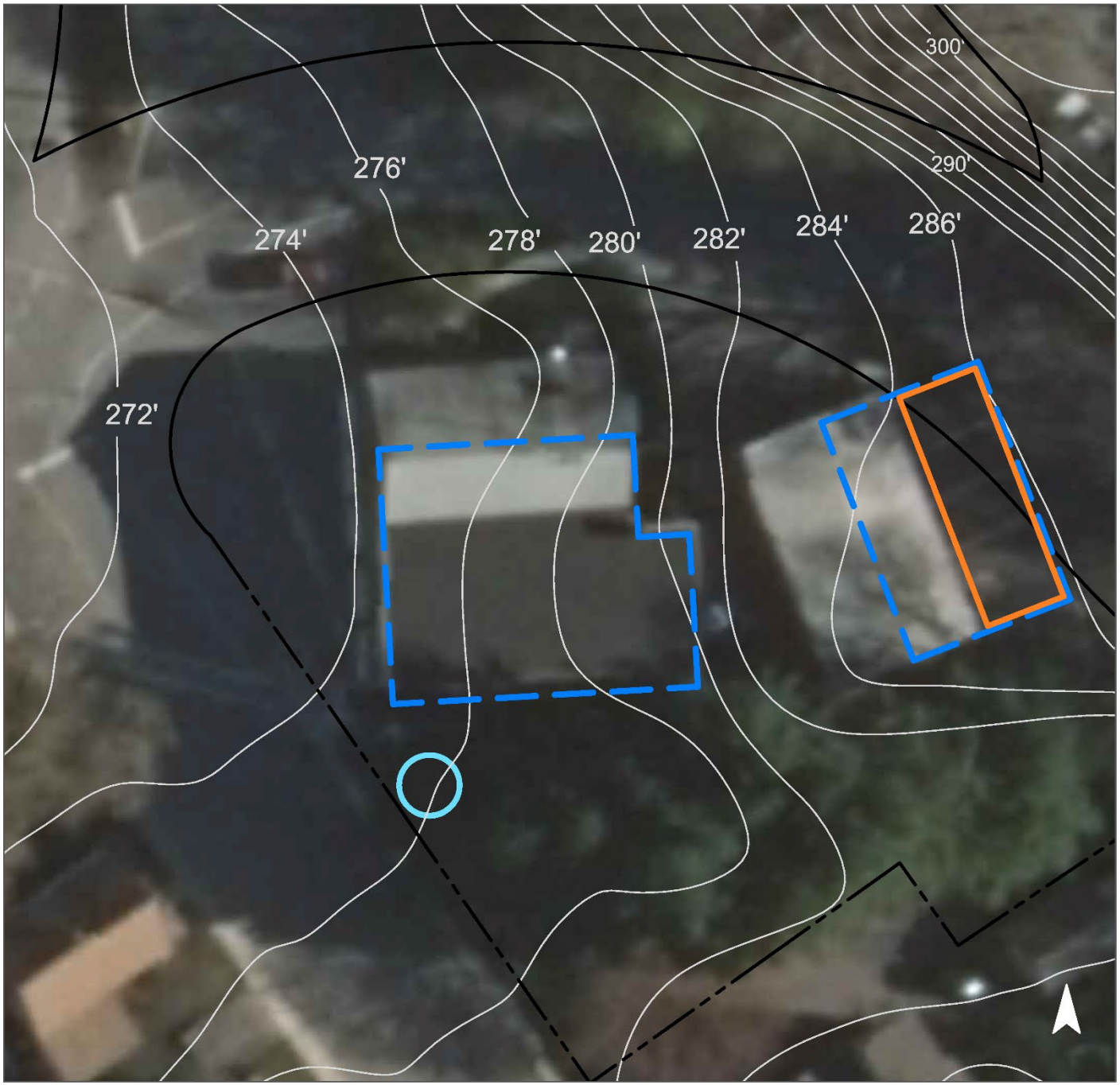
Block and Lot: Block 37; 38
Lot 23, 24, 25; 1

The connected downspouts of the High Bridge Fire Department, near the south end, can be rerouted into a cistern. The cistern can capture and store rainwater from the rooftop that can then be used for washing fire department vehicles or watering landscaping. The parking spaces adjacent to the side building can be repaved with porous asphalt. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
13	16,632	0.8	8.4	76.4	0.013	0.46

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	0.043	7	3,250	0.13	900	$22,500
Rainwater harvesting	0.073	12	2,200	0.08	2,200 (gal)	$4,400

GREEN INFRASTRUCTURE RECOMMENDATIONS



High Bridge Fire Department

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

0 15' 30'

64. HIGH BRIDGE GOLF CLUB

Subwatershed: Raritan River South Branch

Site Area: 4,084,581 sq. ft.

Address: 203 Cregar Road
High Bridge, NJ 08829

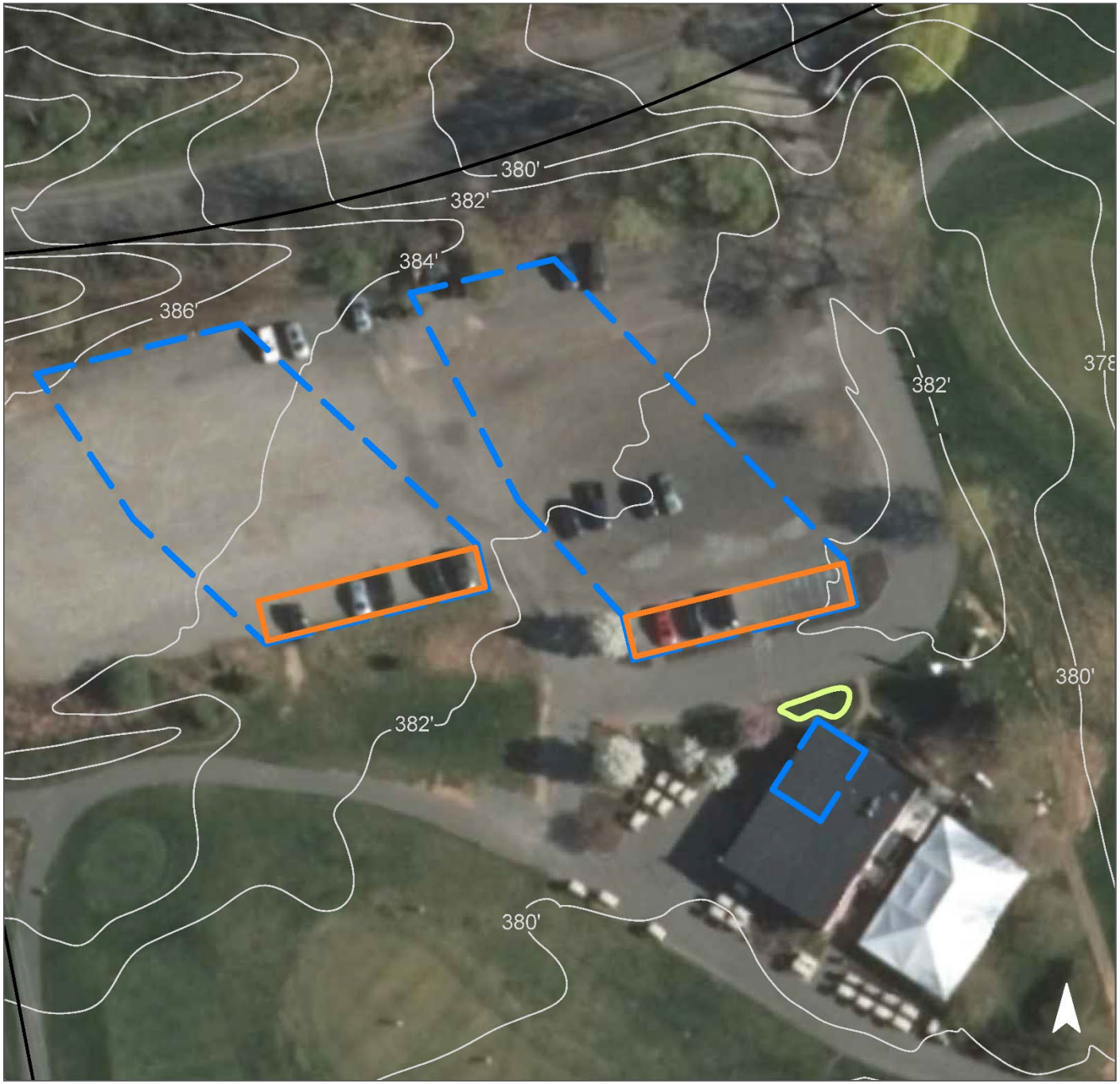
Block and Lot: Block 20, Lots 1 & 1.01

Near the entrance of the main building, a rain garden can be installed to collect water from the rooftop. Areas of the parking lot can be retrofitted with porous pavement to capture stormwater runoff from the parking lot. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
7	280,165	13.5	141.5	1,286.3	0.218	7.68

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	1,440	0.06	185	$925
Pervious pavement	0.473	79	35,810	1.38	3,240	$81,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



High Bridge Golf Club

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

0 30' 60'

65. HIGH BRIDGE MIDDLE SCHOOL

Subwatershed: Raritan River South Branch

Site Area: 96,239 sq. ft.

Address: 50 Thomas Street
High Bridge, NJ 08829

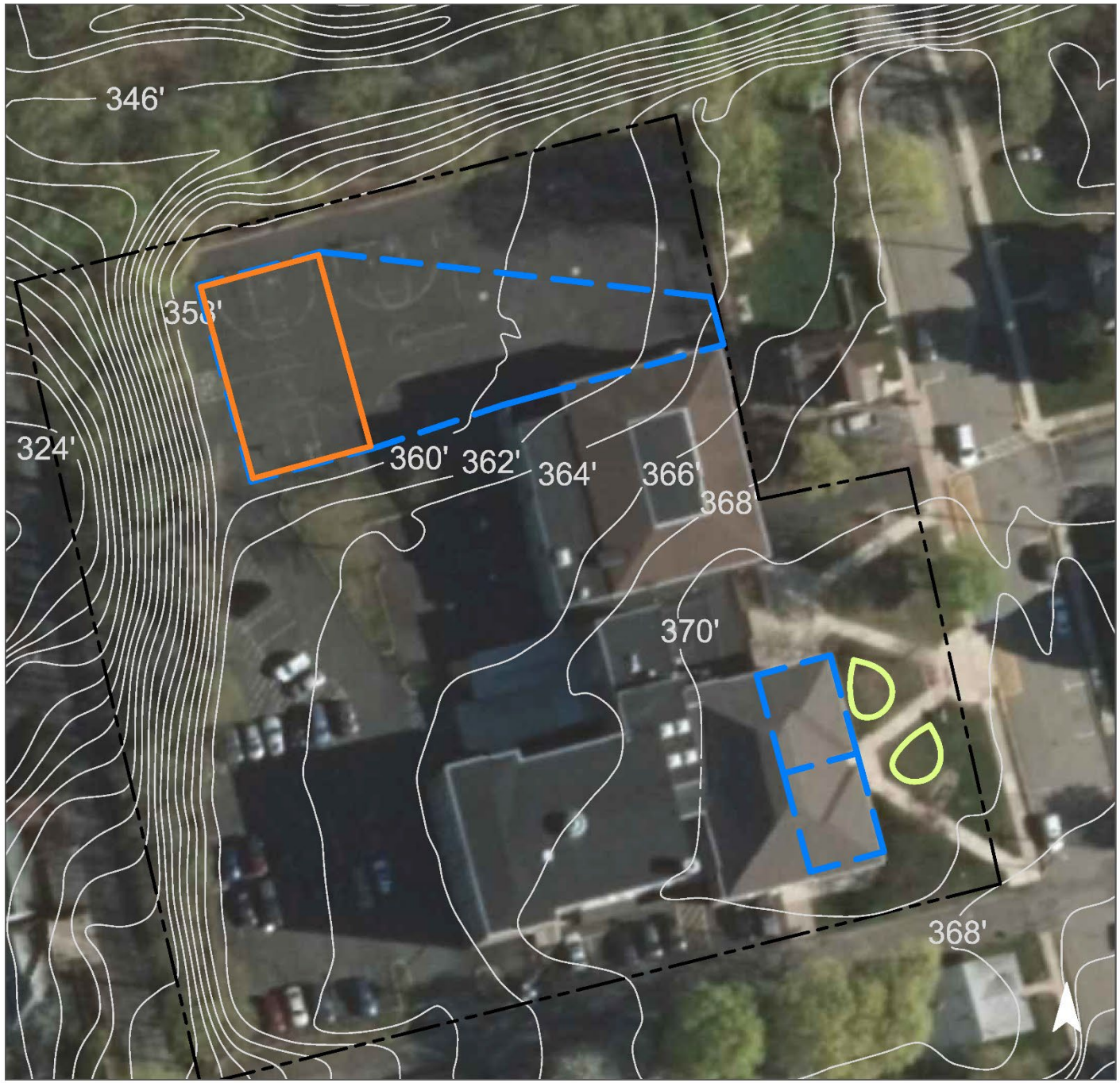
Block and Lot: Block 4.05, Lot 57

Rain gardens can be installed on the front lawn of the school to capture, filter, and infiltrate rainwater from the rooftop by redirecting downspouts into them. The blacktop playground area could be partially or fully repaved with pervious pavement to capture additional stormwater. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
72	69,508	3.4	35.1	319.1	0.054	1.91

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.063	10	4,730	0.18	600	$3,000
Pervious pavement	0.287	48	21,710	0.84	4,000	$100,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



High Bridge Middle School

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

0 30' 60'

66. HIGH BRIDGE PUBLIC LIBRARY

Subwatershed: Raritan River South Branch

Site Area: 13,154 sq. ft.

Address: 71 Main Street
High Bridge, NJ 08829

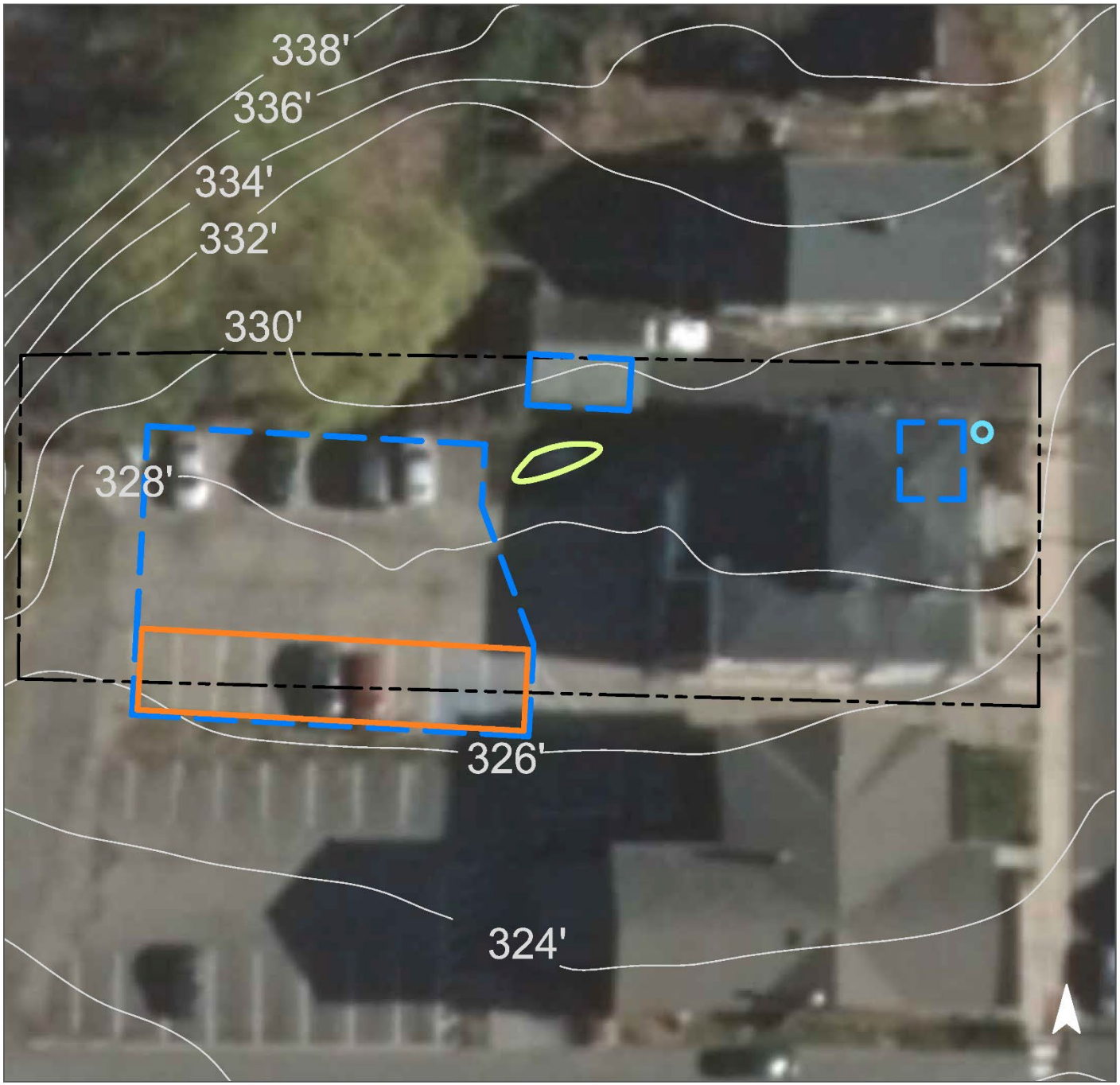
Block and Lot: Block 19.02, Lot 81

A rain barrel could be installed at one of the downspouts to collect rainwater to be used for watering the plants at the front of the building. A rain garden could be installed adjacent to the neighboring shed if the homeowner gives permission to redirect their gutter into it. The parking space could be repaved with porous asphalt to capture a majority of the parking lot's runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
78	10,299	0.5	5.2	47.3	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	0.005	1	400	0.02	50	$250
Pervious pavement	0.107	18	8,150	0.31	1,400	$35,000
Rainwater harvesting	0.002	0	55	0.00	55 (gal)	$250

GREEN INFRASTRUCTURE RECOMMENDATIONS



High Bridge Public Library

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

0 15' 30'

67. HIGH BRIDGE REFORMED CHURCH

Subwatershed: Raritan River South Branch

Site Area: 32,614 sq. ft.

Address: 23 Church Street
High Bridge, NJ 08829

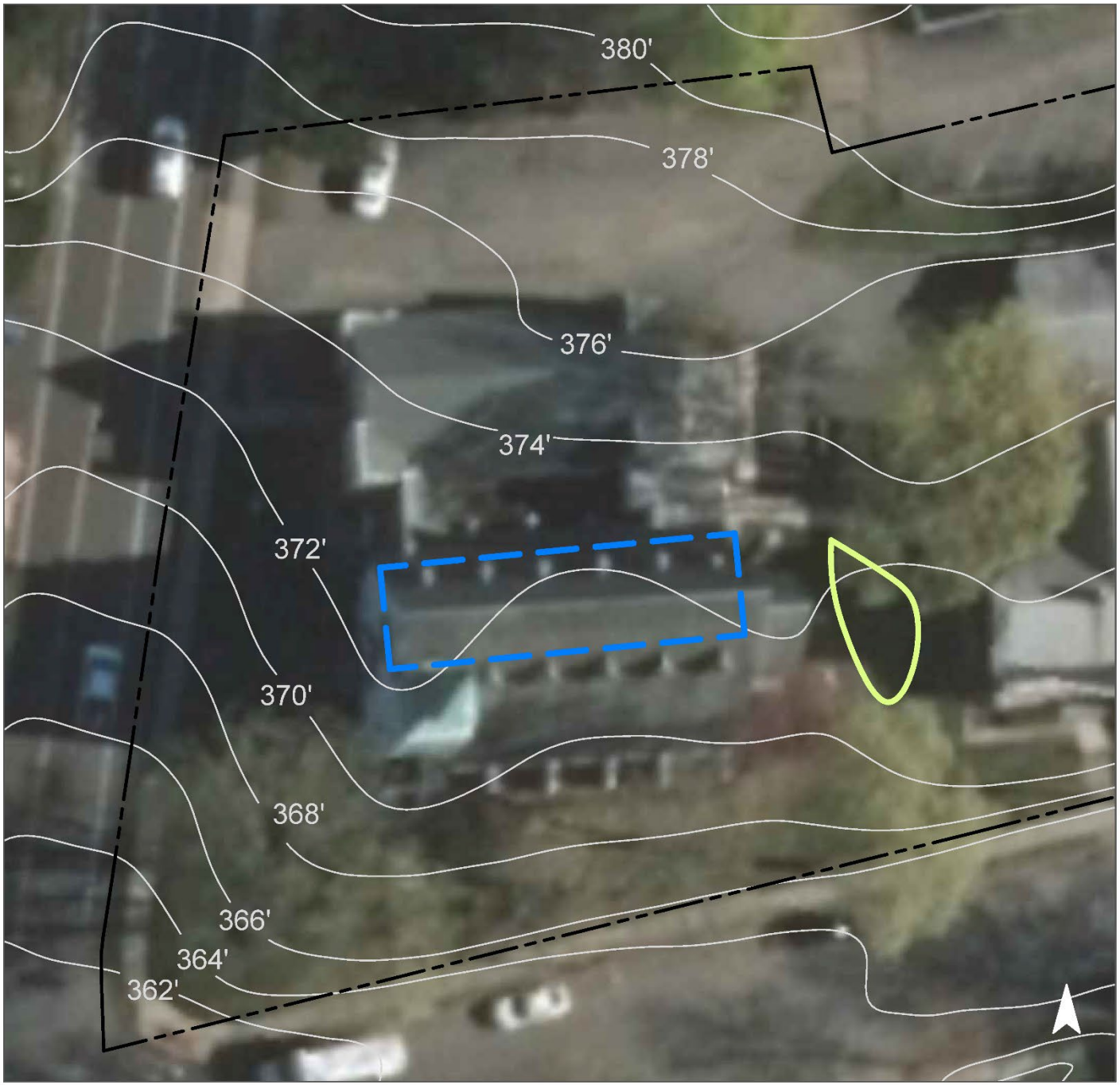
Block and Lot: Block 11, Lots 6 & 7

A rain garden to the east the church can be installed to capture, filter, and infiltrate roof runoff. The garden will also provide aesthetic value to the property, attract natural pollinators, and create an education experience. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
74	23,993	1.2	12.1	110.2	0.019	0.66

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	0.036	6	2,760	0.11	350	$1,750

GREEN INFRASTRUCTURE RECOMMENDATIONS



High Bridge Reformed Church

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

0 15' 30'

68. HIGH BRIDGE UNITED METHODIST CHURCH

Subwatershed: Raritan River South Branch

Site Area: 20,876 sq. ft.

Address: 36 Church Street
High Bridge, NJ 08829

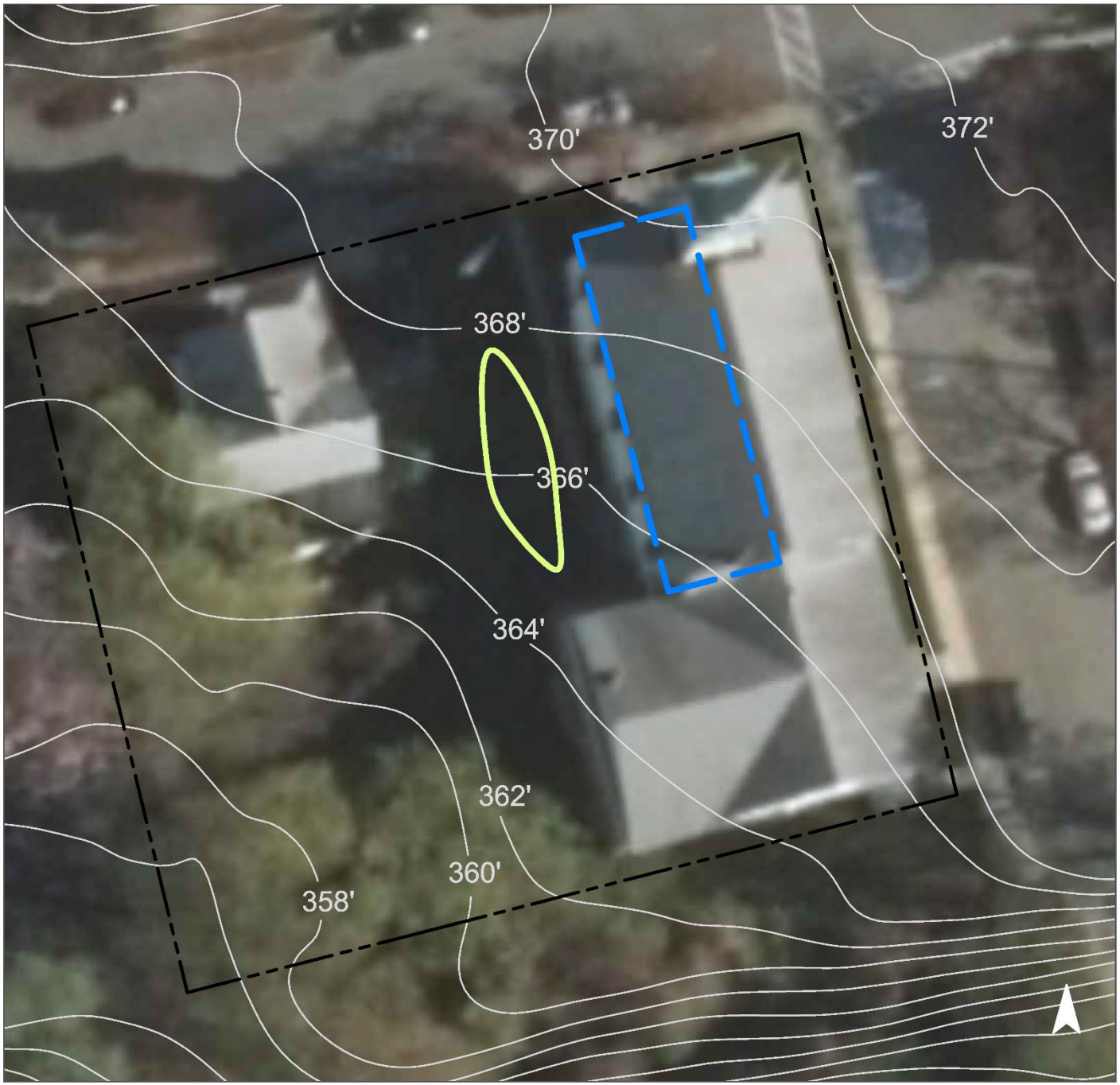
Block and Lot: Block 4.03, Lots 3 & 4

A rain garden can be installed to the west of the church to capture, treat, and infiltrate stormwater from the rooftop. The garden will provide aesthetic value to the property, attract natural pollinators, and create an education experience. 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"
61	12,632	0.6	6.4	58.0	0.010	0.35

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	0.042	7	3,200	0.12	410	$2,050

GREEN INFRASTRUCTURE RECOMMENDATIONS



High Bridge United Methodist Church

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

0 15' 30'

69. HILLTOP DELI & CATERING

Subwatershed: Raritan River South Branch

Site Area: 7,042 sq. ft.

Address: 115 Fairview Avenue
High Bridge, NJ 08829

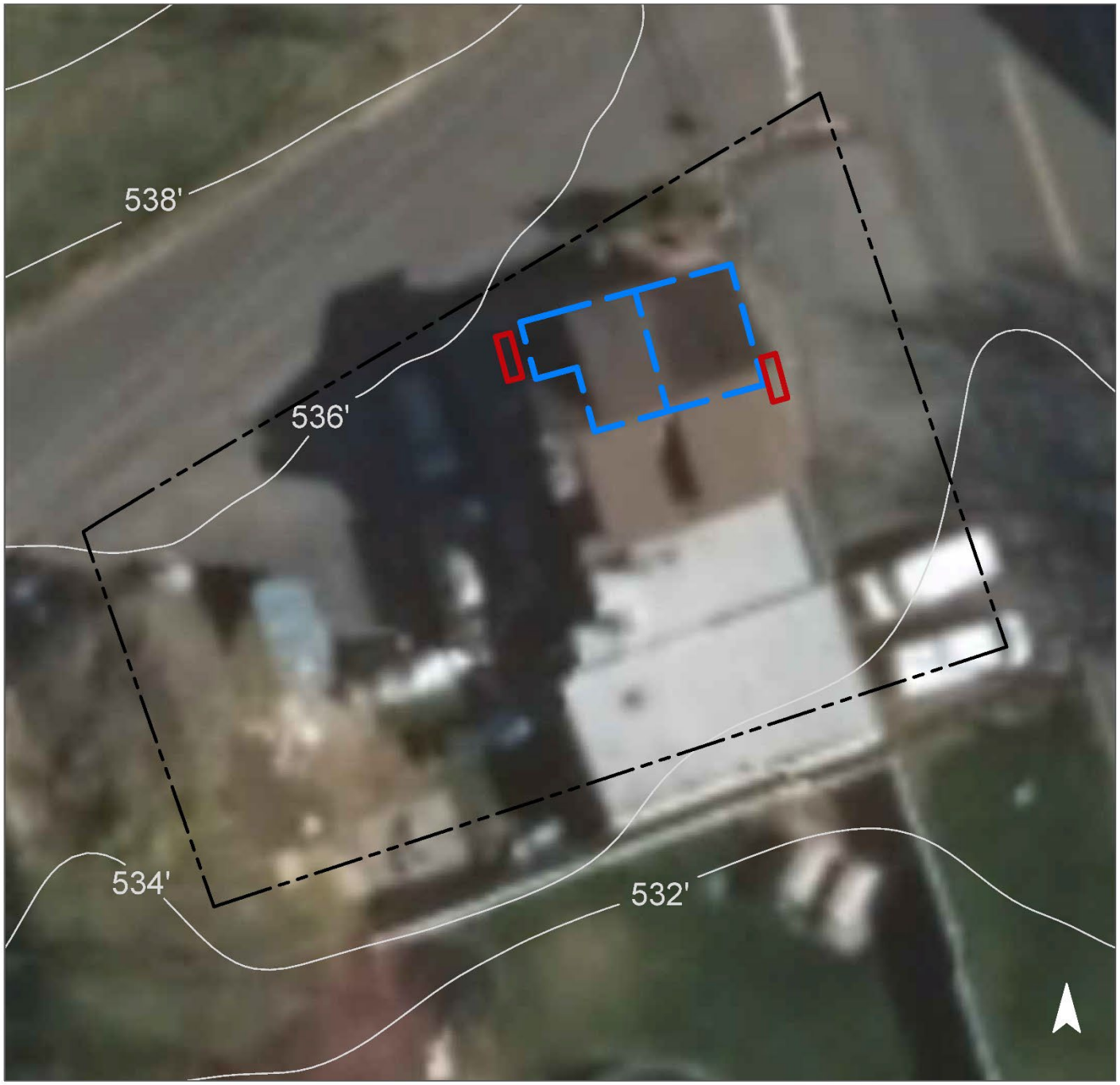
Block and Lot: Block 17, Lot 1

Downspout planter boxes can be installed at the downspouts of the building. Downspout planter boxes are constructed at the base of downspouts with plants that will utilize rooftop runoff. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
42	2,992	0.1	1.5	13.7	0.002	0.08

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size	Estimated Cost
Planter boxes	n/a	2	n/a	n/a	2 (boxes)	$2,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Hilltop Deli & Catering

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

0 10' 20'

70. HUNTERDON ART MUSEUM

Subwatershed: Raritan River South Branch

Site Area: 41,440 sq. ft.

Address: 7 Lower Center Street
Clinton, NJ 08809

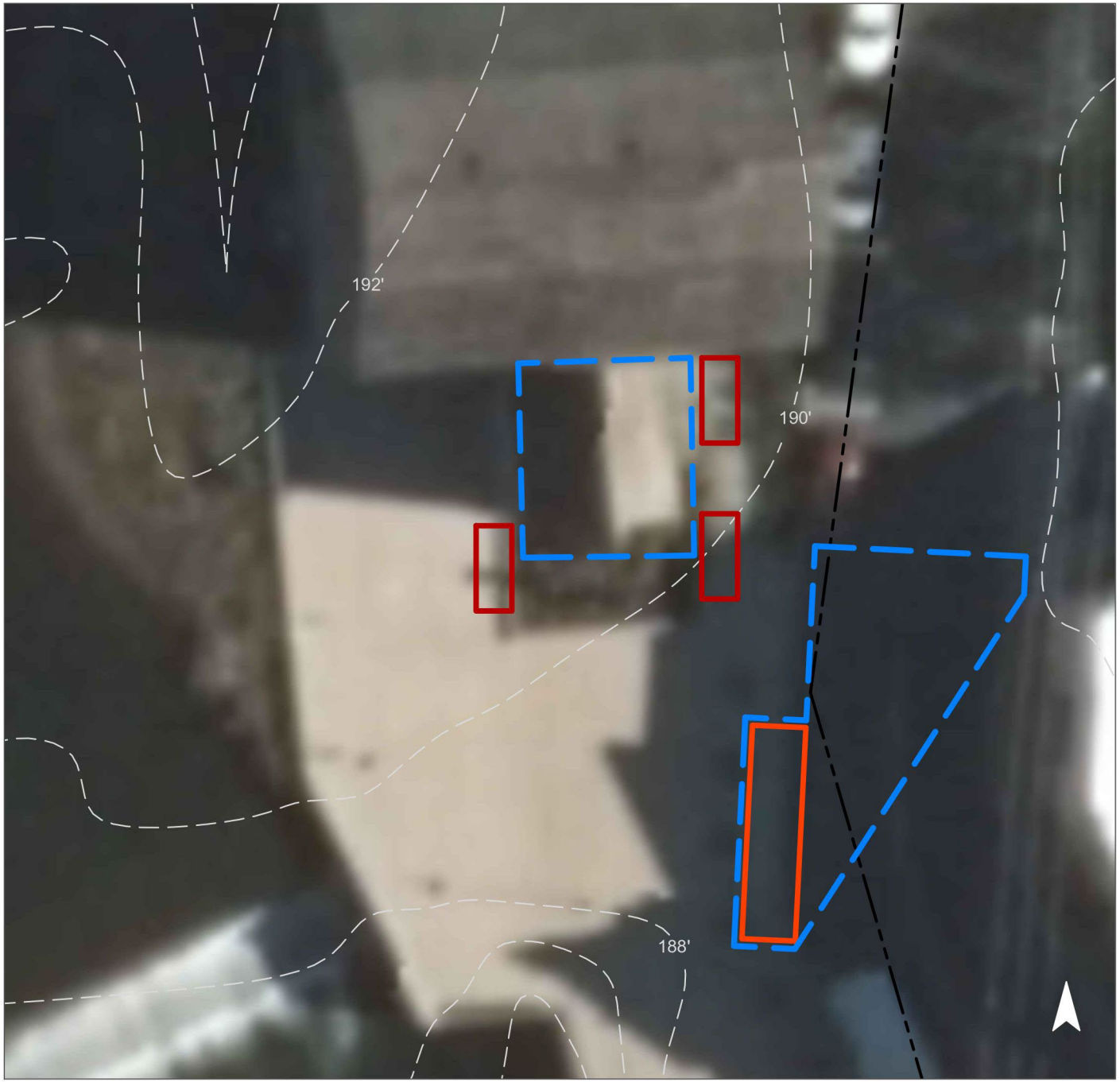
Block and Lot: Block 9, Lot 1

A stormwater planter can be installed in the sidewalk to intercept stormwater runoff from the roadway or sidewalk to allow the stormwater to infiltrate into the ground. Downspout planter boxes can be constructed along the building to allow roof runoff to be reused. 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"
28	11,704	0.6	5.9	53.7	0.009	0.32

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
Planter boxes	n/a	2	n/a	n/a	3 (boxes)	$3,000
Stormwater planter	0.025	4	1,890	0.07	240	$90,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Hunterdon Art Museum

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

0 10' 20'

71. ST. JOSEPH CHURCH

Subwatershed: Raritan River South Branch

Site Area: 20,531 sq. ft.

Address: 59 Main Street
High Bridge, NJ 08829

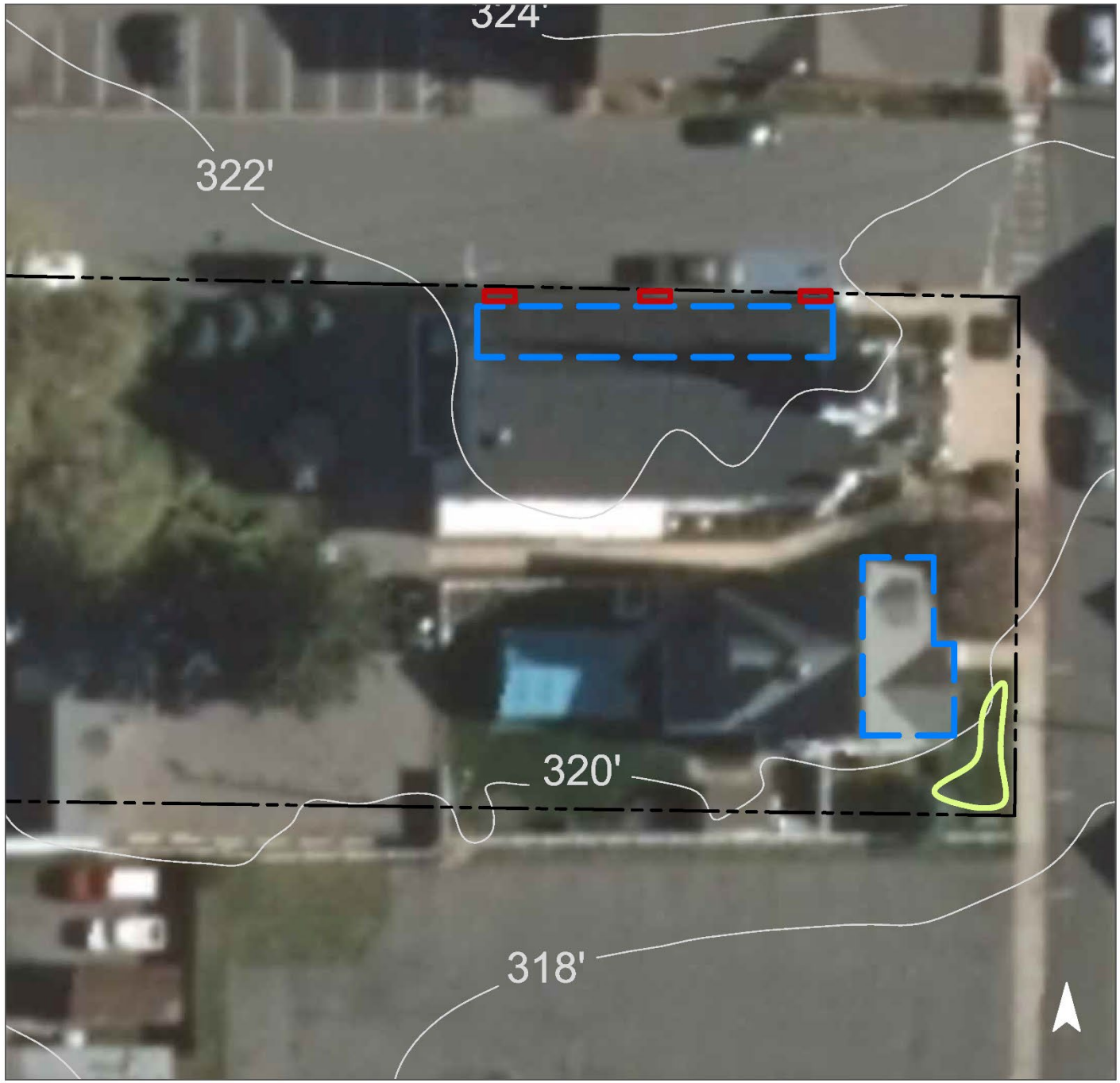
Block and Lot: Block 19.03, Lots 83, 83.01, 83.02

The downspouts along the north side of the building can be rerouted into downspout planter boxes to filter roof runoff. A small rain garden can be installed at the front of the building by redirecting downspouts into it. 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"
81	16,683	0.8	8.4	76.6	0.013	0.46

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	0.015	2	1,110	0.04	140	$700
Planter boxes	n/a	2	n/a	n/a	3 (boxes)	$3,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



St. Joseph Church

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

0 15' 30'

72. UNION FORGE PARK

Subwatershed: Raritan River South Branch

Site Area: 311,670 sq. ft.

Address: 16-34 Washington Avenue
High Bridge, NJ 08829

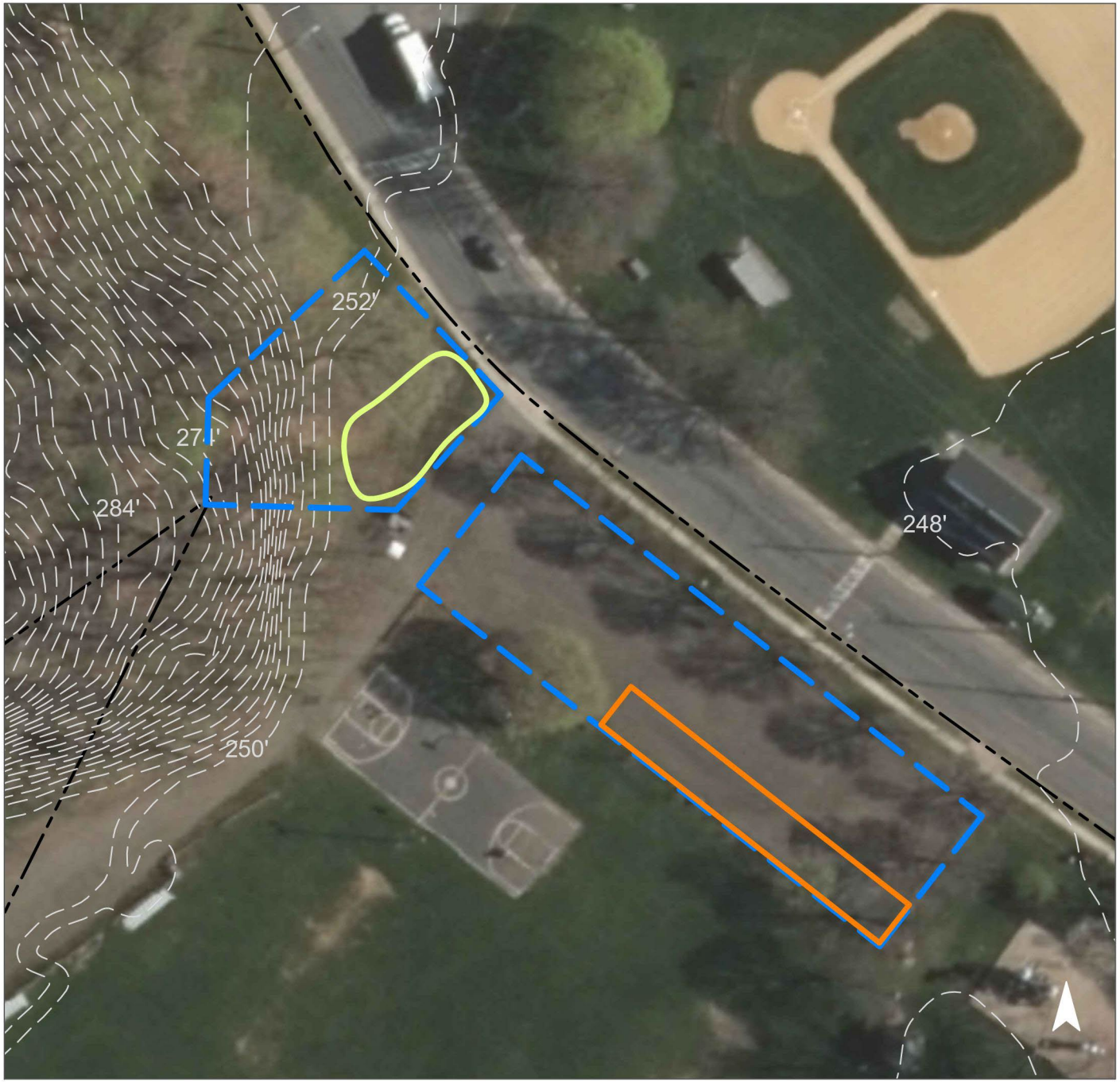
Block and Lot: Block 4.06, Lot 34.01

The southern corner of the parking lot can be converted to pervious pavement to allow for capture and infiltration of the stormwater runoff from the parking lot area. A bioretention system can be installed north of the parking lot to capture, treat, and infiltrate the stormwater runoff from the nearby grass and uphill area.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
13	40,355	1.9	20.4	185.3	0.031	1.11

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.193	32	14,610	0.56	1,850	$9,250
Pervious pavement	0.390	65	29,510	1.14	2,800	$70,000

GREEN INFRASTRUCTURE RECOMMENDATIONS



Union Forge Park

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

0 30' 60'

73. UNITED STATES POSTAL SERVICE

Subwatershed: Raritan River South Branch

Site Area: 10,090 sq. ft.

Address: 10 McDonald Street
High Bridge, NJ 08829

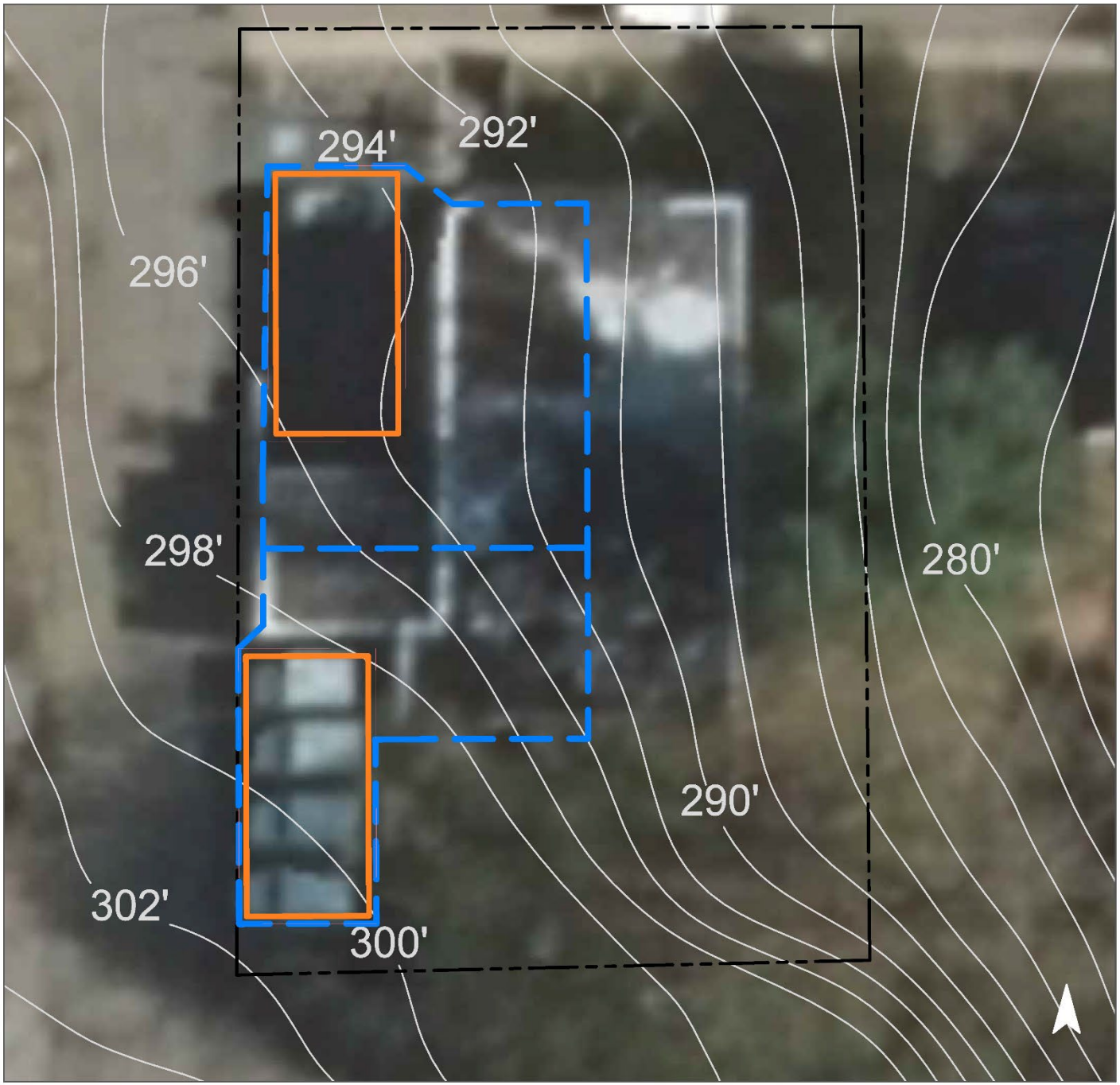
Block and Lot: Block 29.02, Lot 5

The parking spaces to the north and south of the building can be converted into porous pavement. Porous pavement will allow water directed from the rooftop to pass through where it is stored and allowed to infiltrate into the ground. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
72	7,228	0.3	3.7	33.2	0.006	0.20

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	0.092	15	6,990	0.27	1,300	$32,500

GREEN INFRASTRUCTURE RECOMMENDATIONS



United States Postal Service

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

0 10' 20'

74. VOORHEES RESIDENTIAL COMMUNITY HOME

Subwatershed: Raritan River South Branch

Site Area: 18,782,281 sq. ft.

Address: 201 County Road 513
Glen Gardner, NJ 08826

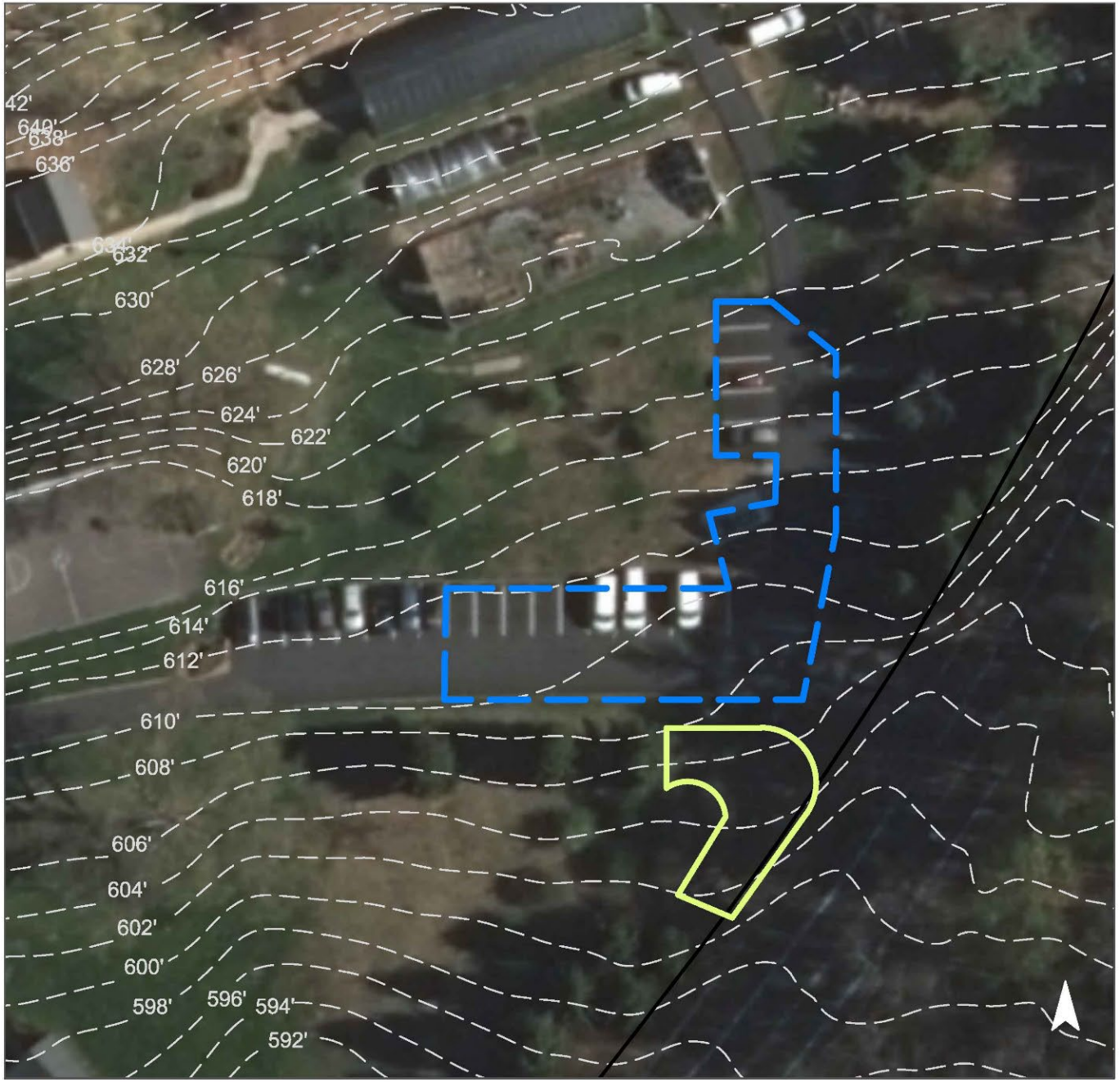
Block and Lot: Block 11, Lot 37

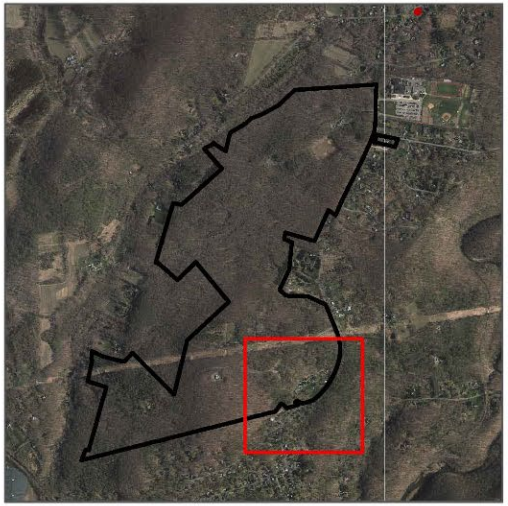
A bioretention system is proposed at the entrance of the property to reduce erosion and infiltrate the stormwater runoff from the parking area. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
3	626,716	30.2	316.5	2,877.5	0.488	17.19

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	0.195	33	14,300	0.54	1,830	$9,150

GREEN INFRASTRUCTURE RECOMMENDATIONS





Voorhees Residential Community Home

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

0 25' 50'