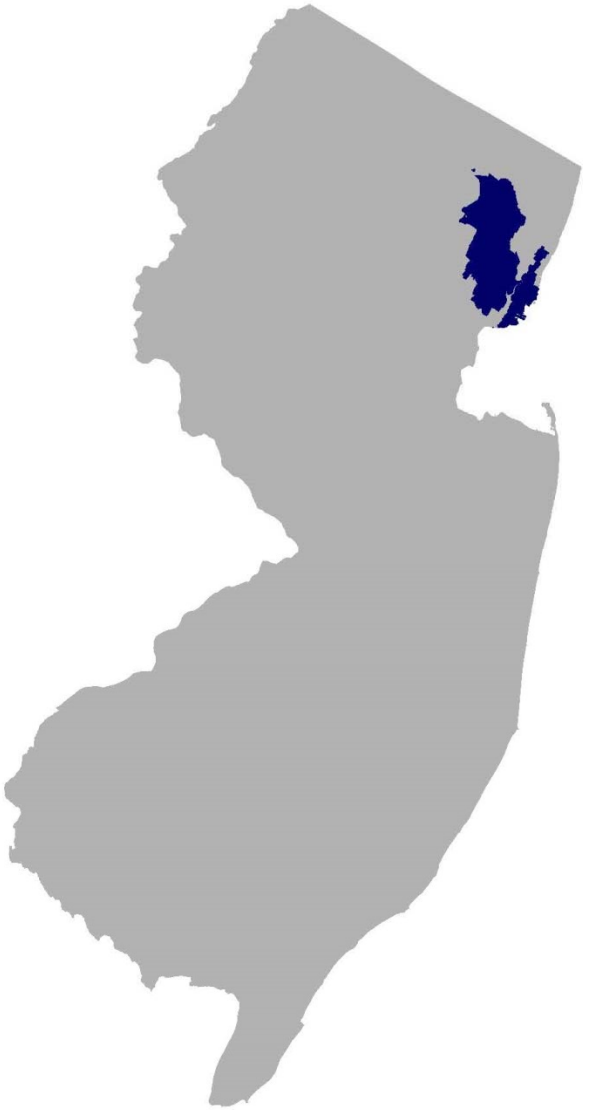
"Protecting Public Health and the Environment"

PASSAIC VALLEY SEWERAGE COMMISSION

EXERCISE: IDENTIFY GREEN INFRASTRUCTURE



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New Jersey Agricultural Experiment Station

PVSC:
GREEN INFRASTRUCTURE FEASIBILITY

1) New Jersey Regional Day School

- disconnection
- permeable pavement
- bioretention systems
- drainage area
- property line
- 2012 Aerial: NJOIT, OGIS

425 Johnston Avenue,
Jersey City, NJ 07304, Ward F

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PVSC:
GREEN INFRASTRUCTURE FEASIBILITY



New Jersey Regional Day School is a public school campus with ample open lawn and parking areas. Downspouts can be diverted to demonstration rain gardens in lawn areas adjacent to the building. Parking areas could manage stormwater runoff through the addition of permeable pavement.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	From the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
60.5	120,726	5.8	61.0	554.3	0.094	3.31

Recommended 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	0.245	41	18,072	0.68	2,390	$11,950
Disconnection	-	-	-	-	-	$1,250
Permeable pavement	0.499	84	36,749	1.38	4,500	$112,500

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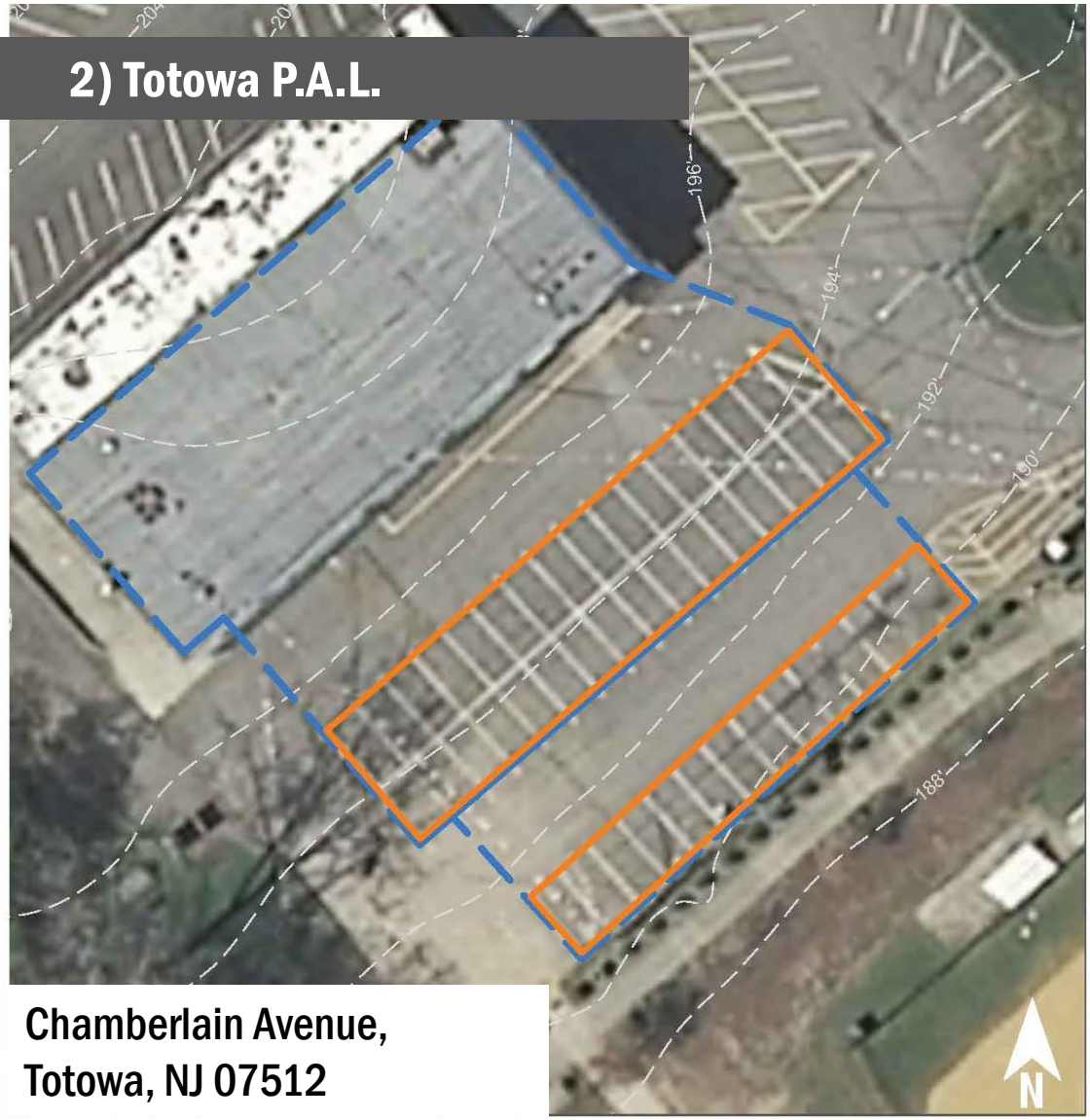
2) Totowa P.A.L.



Chamberlain Avenue,
Totowa, NJ 07512

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

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Sections of parking spaces can be replaced with porous asphalt. The porous asphalt will manage 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	From the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
16.5	142,214	6.9	71.8	653.0	0.111	3.90

Recommended 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	0.615	103	45,649	1.80	7,200	$180,000

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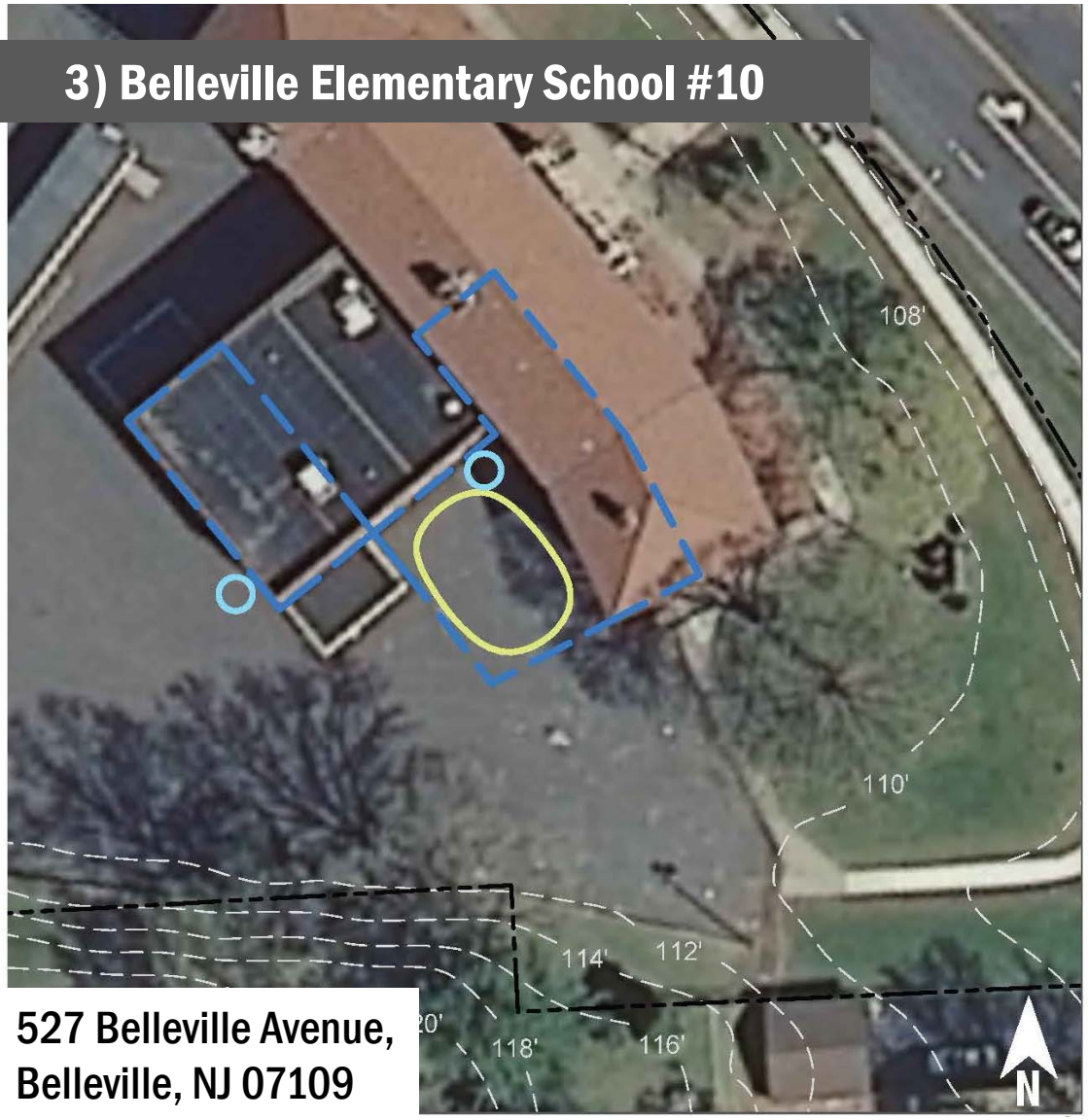
3) Belleville Elementary School #10



527 Belleville Avenue,
Belleville, NJ 07109

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

0' 20' 40'

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GREEN INFRASTRUCTURE FEASIBILITY



The paved area adjacent to the building can be depaved and replaced with a rain garden to capture, treat, and infiltrate rooftop runoff. Rainwater can be harvested by installing cisterns around the building. The water can then be used for watering gardens, washing vehicles, or for other non-potable uses. 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	From the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
66	66,110	3.2	33.4	303.5	0.052	1.81

Recommended 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	0.098	16	7,532	0.28	960	$4,800
Rainwater harvesting	0.060	10	4,600	0.17	5,000 (gal)	$10,000

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