

Phosphorus Reduction Tracking Calculations - DRAFT
Town of Scituate - 2022

Background and Assumptions

Phosphorus loading and reduction based on methodology in MA MS4 Permit, Appendix F

SITE INFO				BMP INFO	BMP LOAD							PHOSPHORUS REDUCTION						
Site					DA	DA-I			P Load-I	P Load Total			IR	BMP Vol	BMP Vol-I			
Site #	Site Name	Address	Watershed	BMP Type	Drainage Area Surface Type	Total Drainage Area (ac)	Impervious drainage area (ac)	Impervious land use	Impervious P load export rate (lbs/ac/yr)	Total Impervious P Load (lb/yr)	Total Annual Phosphorus Load (lb/yr)	Method	Applicable BMP performance curve	Field or Assumed Infiltration Rate (in/hr)	BMP Design Storage Volume (ft3)	Available BMP Capacity in inches of runoff (in)	Performance Curve % P Removal	Total P Load Reduction (lbs/yr)
BMP-001	Public Safety Bldg - Infiltration Basin	800 Chief Cushing Highway	Old Oaken Bucket Pond	Surface Infiltration	Parking	0.50	0.50	Commercial (COM) and Industrial (IND)	1.78	0.89	0.89	2	Surface Infiltration	0.52	1,000	0.551	82%	0.73
BMP-002	Public Safety Bldg - Constructed Wetland	800 Chief Cushing Highway	Old Oaken Bucket Pond	Gravel Wetland	Parking	1.00	1.00	Commercial (COM) and Industrial (IND)	1.78	1.78	10.06	2	Gravel Wetland	0.17	2,000	0.551	51%	5.13
BMP-003	Public Safety Bldg - Constructed Wetland	800 Chief Cushing Highway	Old Oaken Bucket Pond	Gravel Wetland	Parking	1.00	1.00	Commercial (COM) and Industrial (IND)	1.78	1.78	1.78	2	Gravel Wetland	0.17	2,000	0.551	51%	0.91
BMP-015	Williamsburg Lane - Wet Swale	23/29 Williamsburg Lane	Old Oaken Bucket Pond	Wet Pond or Wet Detention Basin	Road	1.10	1.10	Low Density Residential (LDR) - "Rural"	1.52	1.67	1.67	2	Wet Pond	0.17	1500	0.376	37%	0.62
BMP-016	Colonial Way - Wet Swale	15-19 Colonial Way	Old Oaken Bucket Pond	Wet Pond or Wet Detention Basin	Road	0.50	0.50	Low Density Residential (LDR) - "Rural"	1.52	0.76	0.76	2	Wet Pond	0.17	750	0.413	37%	0.28
BMP-017	Eisenhower Lane - Wet Swale	39 Eisenhower Lane	Old Oaken Bucket Pond	Wet Pond or Wet Detention Basin	Road	1.00	1.00	Low Density Residential (LDR) - "Rural"	1.52	1.52	1.52	2	Wet Pond	0.17	1500	0.413	37%	0.56
BMP-019	Stearns Road - Leaching Catch Basins	29 Stearns Road	Old Oaken Bucket Pond	Infiltration Trench	Road	0.10	0.10	Low Density Residential (LDR) - "Rural"	1.52	0.15	0.15	2	Infiltration Trench	8.27	200	0.551	98%	0.15
BMP-021	High School - Dry Swale	606 Chief Justice Cushing Highway	Old Oaken Bucket Pond	Bio-filtration	Parking	0.20	0.20	Commercial (COM) and Industrial (IND)	1.78	0.36	0.36	2	Bio-filtration	1.02	1000	1.377	53%	0.19
BMP-022	High School - Dry Swale	606 Chief Justice Cushing Highway	Old Oaken Bucket Pond	Bio-filtration	Parking	0.15	0.15	Commercial (COM) and Industrial (IND)	1.78	0.27	0.27	2	Bio-filtration	1.02	500	0.918	53%	0.14
BMP-023	High School - Infiltration Basin	606 Chief Justice Cushing Highway	Old Oaken Bucket Pond	Surface Infiltration	Parking	0.20	0.20	Commercial (COM) and Industrial (IND)	1.78	0.36	0.36	2	Surface Infiltration	1.02	1000	1.377	97%	0.35
BMP-024	High School - Dry Swale	606 Chief Justice Cushing Highway	Old Oaken Bucket Pond	Bio-filtration	Parking	0.30	0.30	Commercial (COM) and Industrial (IND)	1.78	0.53	0.53	2	Bio-filtration	1.02	1000	0.918	53%	0.28
BMP-025	High School - Dry Swale	606 Chief Justice Cushing Highway	Old Oaken Bucket Pond	Bio-filtration	Parking	0.25	0.25	Commercial (COM) and Industrial (IND)	1.78	0.45	0.45	2	Bio-filtration	1.02	1000	1.102	53%	0.24
BMP-040	Country Way - Perforated Pipe	88 Country Way	Old Oaken Bucket Pond	Infiltration Trench	Road	0.20	0.20	Low Density Residential (LDR) - "Rural"	1.52	0.30	0.30	2	Infiltration Trench	8.27	300	0.413	94%	0.29
BMP-043	Old Forge Road - Leaching Catch Basin	103 Old Forge Road	Old Oaken Bucket Pond	Infiltration Trench	Road	0.15	0.15	Low Density Residential (LDR) - "Rural"	1.52	0.23	0.23	2	Infiltration Trench	8.27	300	0.551	98%	0.22
BMP-044	Old Forge Road - Leaching Catch Basin	51 Old Forge Road	Old Oaken Bucket Pond	Infiltration Trench	Road	0.15	0.15	Low Density Residential (LDR) - "Rural"	1.52	0.23	0.23	2	Infiltration Trench	8.27	300	0.551	99%	0.23
BMP-045	Old Forge Road - Leaching Catch Basin	37 Old Forge Road	Old Oaken Bucket Pond	Infiltration Trench	Road	0.10	0.10	Low Density Residential (LDR) - "Rural"	1.52	0.15	0.15	2	Infiltration Trench	8.27	300	0.826	99%	0.15
BMP-046	Stearns Road - Leaching Catch Basin	15 Stearns Road	Old Oaken Bucket Pond	Infiltration Trench	Road	0.10	0.10	Low Density Residential (LDR) - "Rural"	1.52	0.15	0.15	2	Infiltration Trench	8.27	300	0.826	99%	0.15
BMP-047	Cudworth Road - Leaching Catch Basins (2)	19 Cudworth Road	Old Oaken Bucket Pond	Infiltration Trench	Road	0.20	0.20	Low Density Residential (LDR) - "Rural"	1.52	0.30	0.30	2	Infiltration Trench	0.27	300	0.413	63%	0.19
BMP-048	Cudworth Road - Leaching Catch Basins (2)	2 Cudworth Road	Old Oaken Bucket Pond	Infiltration Trench	Road	0.15	0.15	Low Density Residential (LDR) - "Rural"	1.52	0.23	0.23	2	Infiltration Trench	0.27	300	0.551	78%	0.18
BMP-049	Elm Street - Leaching Catch Basins (2)	144 Elm Street	Old Oaken Bucket Pond	Infiltration Trench	Road	0.20	0.20	Low Density Residential (LDR) - "Rural"	1.52	0.30	0.30	2	Infiltration Trench	0.27	300	0.413	63%	0.19
BMP-050	Cudworth Road - Leaching Catch Basins (2)	33 Cudworth Road	Old Oaken Bucket Pond	Infiltration Trench	Road	0.10	0.10	Low Density Residential (LDR) - "Rural"	1.52	0.15	0.15	2	Infiltration Trench	0.27	250	0.689	86%	0.13
BMP-051	Meadow Lane - Leaching Catch Basin	Intersection of Elm and Meadow Lane	Old Oaken Bucket Pond	Infiltration Trench	Road	0.10	0.10	Low Density Residential (LDR) - "Rural"	1.52	0.15	0.15	2	Infiltration Trench	0.27	250	0.689	86%	0.13
BMP-052	Daedalus Circle - Leaching Catch Basin	Intersection of Daedalus CT and Daedalus Circle	Old Oaken Bucket Pond	Infiltration Trench	Road	0.15	0.15	Low Density Residential (LDR) - "Rural"	1.52	0.23	0.23	2	Infiltration Trench	0.27	300	0.551	78%	0.18

TOTAL 11.61