

**New Hampshire Small MS4  
Nitrogen Source Identification Report  
Appendix H – Part I 1.b  
City of Dover**

**Prepared By:  
Seacoast Stormwater Coalition &  
Manchester/Nashua Stormwater Coalition**

The purpose of this document is to meet the requirement in Appendix H section I.1.b.i to create a Nitrogen Source Identification Report. Though the City of Dover has reviewed both the raw municipally and privately-owned parcel data, the information presented in this report focuses on municipally-owned parcels rather than privately-owned. The reason for this focus was to still complete this Year 4 requirement but to also start to prepare for the Year 5 requirement in section I.1.c.i to evaluate all permittee-owned properties for BMP retrofit opportunities.

The requirements in Appendix H section I.1.b.i are as follows:

1. Calculation of total MS4 area draining to the water quality limited receiving water segments or their tributaries, incorporating updated mapping of the MS4 and catchment delineations produced pursuant to Part 2.3.4.6

The City of Dover has calculated raw data for municipal-owned and privately-owned parcels, based on impervious cover (IC) area, for the entirety of the regulated NH MS4 area.

The total MS4 area within Dover is: 14,602 acres

Dover is using raw data that was prepared by a collaborative effort between the UNH Stormwater Center, GRANIT, and NH Department of Environmental Services. Information contained in the raw data has been sorted to identify non-conservation parcels owned by Dover in descending order by acreage of impervious cover (IC) area, which indicates the priority rank for BMP implementation of municipally-owned properties. A focus on municipally-owned properties is a priority for Dover in order to prepare for the Year 5 requirement which states, *"Within five years of the permit effective date, the permittee shall evaluate all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMPs installation..."* Reports using the raw data, and of which have the highest total nitrogen loads, have been prepared to identify the ranking and optimal number of parcels to be treated by BMPs. The top ranked municipally-owned parcels are represented as the "knee" and can be found in Attachment A.

2. All screening and monitoring results pursuant to Part 2.3.4.7.d., targeting the receiving water segment(s).

All screening and monitoring results pursuant to Part 2.3.4.7.d for Dover can be found in Attachment B of this report.

3. Impervious area and DCIA for the target catchment

For the purpose of this report, Dover does not distinguish between impervious cover (IC) area and directly connected impervious area (DCIA). Dover will assess priority parcels for treatment and will select those with verified directly connected impervious cover (IC) area for BMP implementation.

The total impervious cover (IC) area within the City of Dover is: 1,564 acres

4. Identification, delineation and prioritization of potential catchments with high nitrogen loading

A spreadsheet identifying and prioritizing the top municipally-owned potential parcels with high nitrogen loading can be found in Attachment A of this report.

Dover is using raw data that was prepared by a collaborative effort between the UNH Stormwater Center, GRANIT, and NH Department of Environmental Services. Information contained in the raw data has been sorted to identify non-conservation parcels owned by Dover in descending order by acreage of impervious cover (IC) area, which indicates the priority rank for BMP implementation of municipally-owned properties. A focus on municipally-owned properties is a priority for Dover in order to prepare for the Year 5 requirement which states, *“Within five years of the permit effective date, the permittee shall evaluate all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMPs installation...”* Reports using the raw data, and of which have the highest total nitrogen loads, have been prepared to identify the ranking and optimal number of parcels to be treated by BMPs. The top ranked municipally-owned parcels are represented as the “knee” and can be found in Attachment A. During Year 5 Dover will complete a similar report for all privately-owned parcels located within the NH MS4 regulated area.

5. Identification of potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment.

Dover has identified potential retrofit opportunities for the installation of structural BMPs of municipally-owned properties during redevelopment, including the removal of impervious cover (IC) area.

The following Engineering Feasibility Assessment Report table evaluates each of the identified target municipally-owned parcels based on the highest total nitrogen pollutant loads. Preliminary engineering determination for retrofit feasibility is based on best engineering judgment, and factors such as access for maintenance purposes;

subsurface geology; depth to water table; site slope and elevation; and proximity to aquifers and subsurface infrastructure including sanitary sewers and septic systems.

<b>Engineering Feasibility Assessment Report</b>			
Parcel	Site Notes	Next Planned Infrastructure Improvement	Engineering and regulatory feasibility of redevelopment or retrofit
271 Mast Rd	Public Works Facility has WQ Swale & Infiltration Basin	Potentially in next 5 years	If existing treatment is impacted, new BMP's will be installed
484 Middle Rd	WWTF – all stormwater is captured and treated in the facility	Potentially in next 5 years	Runoff will continue to be captured and treated in the facility
25 Alumni Dr	High School – recently renovated to include BMP's	Unknown	No modification proposed at this time
100 Portland Av	Ice Arena & Pool	Potential expansion for skate park	Skate Park will be designed with BMP
16 Daley Dr	Middle School	Unknown	No modifications proposed at this time
East Watson St	Cemetery & Facilities and Grounds Building	None	F&G facility was built in 2021 and includes BMP's
31 River St	Pump Station	2023	BMP's to be included as part of waterfront development
Woodman Park Dr	Woodman Elementary School	Unknown	No modifications planed at this time. A large rain garden captures a portion of the runoff
Towne Dr	Ball fields & Gravel Lot	2023	A paved parking lot is proposed as part of the cap of the dredge cell. BMP's

			will be included in design
78 Horne St	Horne St. Elementary School	Unknown	Several BMP's were installed at the school as part of the Berry Brook project.
50 Garrison Rd	Garrison Elementary School	Unknown	An infiltration BMP has been constructed at the corner of Garrison and Shaws Ln. Additional BMP's should be included if/when any additional sitework is undertaken.
61 Locust St	McConnell Center	Unknown	If/when any sitework is undertaken, BMP's should in included
131 Central Av	Cemetery	Unknown	No Construction work proposed in this area.
31 Union St	Dover Housing Authority	Unknown	All development or redevelopment is subject to the Dover Stormwater Regs.
6 Washington St	Henry Law Park, Children's Museum, Rotary Pavilion	2024	A substantial BMP to be located below the existing park is currently in design. Construction of BMP will be based on funding availability.
11 Lowell Av	Water Treatment Facility	Unknown	Several BMP's have been constructed on this property as part of the Berry Brook project.
Abbey Sawyer Memorial Dr	Garrison Tower and Garrison Tank	Unknown	If any sitework is undertaken, BMP's should be included

46 Chestnut St	Police Station and Parking Garage	Unknown	There is no proposed construction in the future at this lot.
3 Green St	Dover Housing Authority	Unknown	All development or redevelopment is subject to the Dover Stormwater Regs.
262 Sixth St	North End Fire Station	Unknown	A gravel wetland was constructed as part of this project
Orchard St	Public Parking Lot	Unknown	Any future construction at this lot should include a BMP.
32 Long Hill Rd	Dog Park	Unknown	Any future construction at this lot should include a BMP.
279 Central Av	Dover Housing Authority	Unknown	All development or redevelopment is subject to the Dover Stormwater Regs.



## **ATTACHMENT A**

### **Identification, Delineation and Prioritization of Potential Catchments with High Nitrogen Loading**



Attachment A- Dover identification, delineation and prioritization of potential catchments with high nitrogen loading

Treatment Priority	Street Address	Parcel Acreage (acres)	Impervious Cover Area (acres)	Total Nitrogen Load (lb/year)
1	271 Mast Road	-	-	-
2	484 Middle Rd	-	-	-
3	25 Alumni Dr	47.47	14.08	277.10
4	100 Portland Av	39.53	6.10	174.59
5	16 Daley Dr	20.14	6.92	133.62
6	East Watson St	41.24	2.78	116.06
7	31 River St	32.12	5.69	110.48
8	Woodman Park Dr	17.44	5.75	87.31
9	Towne Dr	31.00	1.11	83.07
10	78 Home St	13.62	4.43	78.82
11	50 Garrison Rd	18.00	3.37	61.96
12	61 Locust St	5.33	3.67	51.60
13	131 Central Av	33.45	3.44	48.75
14	31 Union St	9.90	2.59	43.23
15	6 Washington St	6.50	2.43	41.87
16	11 Lowell Av	5.92	1.19	24.67
17	10 Abbey Sawyer Memorial Dr	11.00	0.87	22.95
18	46 Chestnut St	1.31	1.28	18.89
19	3 Green St	2.11	1.02	17.70
20	262 Sixth St	2.99	0.96	16.98
21	Orchard St	2.02	1.00	16.12
22	32 Long Hill Rd	14.50	0.86	14.85
23	279 Central Av	1.61	0.93	14.44
24	Garrison Rd	2.82	1.29	13.53

**ATTACHMENT B**  
**Screening and Monitoring Results**

















