

**New Hampshire Small MS4**  
**Phosphorus Source Identification Report**  
**And**  
**Potential Structural BMPs Report**

**Appendix H – Part II 1.b (Year 4) and Part II.1.c (Year 5)**

**Town of Windham, New Hampshire**

**Updated March 2024**  
**Revised June 2024 (Year 6)**

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

## Section I - Phosphorus Source Identification Report

The purpose of this document is to meet the requirement in Appendix H section II.1.b.i to create a Phosphorus Source Identification Report. Though the Town of Windham does include both the raw municipally and privately owned parcel data in Attachment A of this report, 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 II.1.c.i to evaluate all permittee-owned properties for BMP retrofit opportunities.

- 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 Town of Windham has calculated raw data for municipal-owned and privately-owned parcels, based on impervious cover, for the entirety of the regulated NH MS4 area. A spreadsheet containing all of the Town of Windham raw data can be found in Attachment A.

The total MS4 area within the Town of Windham is: 8,438.55 acres.

The Town of Windham is using raw data that was prepared by a collaborative effort between the UNH Stormwater Center, GRANITE, and NH Department of Environmental Services. Information contained in the raw data has been sorted to identify non-conservation parcels owned by the Town of Windham in descending order by acreage of impervious cover, which indicates the priority rank for BMP implementation of municipally-owned properties. A focus on municipally-owned properties is a priority for the Town of Windham in order to prepare for the Year 5 requirement which states, *“Within five years of the permit effective date, the permittee shall evaluated 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 phosphorus 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 C. During Year 5 the Town of Windham will complete a similar report for all privately-owned parcels located within the NH MS4 regulated area.

- 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 the Town of Windham can be found in Attachment B of this report.

### **3. Impervious area and DCIA for the target catchment**

For the purpose of this report, the Town of Windham does not distinguish between Impervious area and directly connected impervious area (DCIA). The Town of Windham determined priority parcels based on directly connected impervious cover (IC) areas for consideration of disconnection and treatment using structural BMP implementation.

The total impervious cover (IC) area within the Town of Windham is: 1,041.94 acres.

### **4. Identification, delineation and prioritization of potential catchments with high phosphorus loading**

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

The Town of Windham is using raw data that was prepared by a collaborative effort between the UNH Stormwater Center, GRANITE, and NH Department of Environmental Services. Information contained in the raw data has been sorted to identify non-conservation parcels owned by the Town of Windham in descending order by acreage of impervious cover, which indicates the priority rank for BMP implementation of municipally-owned properties. A focus on municipally-owned properties is a priority for the Town of Windham in order to prepare for the Year 5 requirement which states, *“Within five years of the permit effective date, the permittee shall evaluated 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 phosphorus 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 C. During Year 5 the Town of Windham 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, including the removal of impervious area of permittee-owned properties.**

The Town of Windham 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.

Attachment D contains the prioritized list of municipally-owned parcels with consideration of multiple factors including: 1.) prioritized list of municipally-owned parcels with the highest total phosphorus pollutant loads and 2.) a number of factors from section 2.3.6.e that are used to determine the potential of each parcel to be retrofitted with a stormwater BMP.

A focus on municipally-owned properties is a priority for the Town of Windham in order to prepare for the Year 5 requirement which states, “*Within five years of the permit effective date, the permittee shall evaluated all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMPs installation...*” During Year 5 the Town of Windham will complete a similar ranking for all privately-owned parcels located within the NH MS4 regulated area.

## Section II - Potential Structural BMPs Report

The purpose of this section of the document is to meet the requirements in Appendix H Part II.1.c.i to evaluate all permittee-owned properties for potential BMPs to reduce stormwater pollutants including phosphorus, Part II.1.c.ii to provide a list of BMP(s) that have been installed on permittee-owned properties, and Part II.1.c.iii to track and document the metrics for each of the BMPs installed within the permittees regulated area. The permittee-owned properties that are used in this evaluation are taken directly from the Town of Windham’s Phosphorus Source Identification Report in Attachment C of this document.

### Part II.1.c.i:

Windham has evaluated all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMP installation under permit Part 2.3.6.e. or identified in the Phosphorus Source Identification Report that are within the drainage area of the impaired water or its tributaries. The evaluation included:

1. The next planned infrastructure, resurfacing or redevelopment activity planned for the property (if applicable) OR planned retrofit date;
2. The estimated cost of redevelopment or retrofit BMPs; and
3. The engineering and regulatory feasibility of redevelopment or retrofit BMPs.

### Permittee-Owned Properties Retrofit Evaluation

Planned Retrofit or Structural BMP's for Phosphorus Removal in Cobbetts Pond Watershed				
Address	Parcel ID	Next Planned Infrastructure Improvement	Estimated Cost	Engineering and Regulatory Feasibility of Redevelopment or Retrofit
84 Gov Dinsmore Rd, Windham, NH	7-A-500	Unknown	\$1,000.00	Refer to attachment D of PSIR
Mockingbird Hill Rd, Windham, NH	7-A-501	Unknown	0	Refer to attachment D of PSIR
Indian Rock Rd, Windham, NH	11-C-350	Unknown	\$6,500	Refer to attachment D of PSIR
Bell Rd, Windham, NH	17-J-134A	Unknown	0	Refer to attachment D of PSIR
Third St, Windham, NH	16-P-560	Unknown	0	Refer to attachment D of PSIR
Ash St, Windham, NH	16-F-8A	Unknown	0	Refer to attachment D of PSIR
Ash St, Windham, NH	21-V-227A	Unknown	\$2,000.00	Refer to attachment D of PSIR
45 Cobbetts Pond Rd, Windham, NH	21-H-1A	2024 - 2025	\$44,000	Refer to attachment D of PSIR
156 Range Rd, Windham, NH	21-K-150	Unknown	\$7,000.00	Refer to attachment D of PSIR
Armstrong Rd, Windham, NH	17-I-49	Unknown	\$4,000.00	Refer to attachment D of PSIR

**Part II.1.c.ii:**

The Town of Windham has provided a listing of planned structural BMPs and a plan and schedule for implementation in the table above. Windham is planning to install the following projects within the drainage area of the water quality limited water or its tributaries in Year 6 (2023/2024). Windham will install the remainder of the structural BMPs in accordance with the plan and schedule above. This plan will be evaluated annually and will be adjusted accordingly. Windham will plan and install a minimum of one of the identified structural BMPs as a demonstration project within the drainage area of the water quality limited water or its tributaries within six years of the permit effective date. Windham will install the remainder of the structural BMPs in accordance with the plan and schedule above. This plan will be evaluated annually and will be adjusted accordingly.

**Permittee -Owned Properties Retrofit Evaluation Planned or Estimated for Year 6 (2023/2024)**

Parcel	Parcel ID	Next Planned Infrastructure Improvement for Year 6	Estimated Cost	Engineering and Regulatory Feasibility of Redevelopment or Retrofit
45 Cobbetts Pond Rd	21-H-1A	Planned 2024 - 2025	\$ 44,000.00	Refer to attachment D

**Part II.1.c.iii:**

Windham's tracking and accounting elements associated with Part II.1.c.iii of Appendix H of the NH MS4 permit are consistent with Attachment 3 of Appendix F of the NH MS4 permit. The tracking information for each of the structural BMPs installed by Windham in its regulated area can be found in the table below. Windham will provide the tracking metrics for all the BMPs installed in its regulated area annually.

**BMP's Located Within the Regulated Area Tracking Metrics**

Address	Parcel ID	Date BMP was Implemented	Type of BMP	Total Area Treated by the BMP	Design Storage Volume of the BMP	Estimated Mass of Phosphorus Removed by the BMP Per Year
45 Cobbetts Pond Rd	21-H-1A	Planned 2024/2025	Bioretention Cell	TBD	TBD	TBD

**ATTACHMENT A** (separate file)

**Raw Municipal and Private Parcel Data in MS4  
Regulated Area**

**ATTACHMENT B** (separate file)

**Screening and Monitoring Results**

## **ATTACHMENT C**

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

**PSIR Attachment C- Windham identification, delineation and prioritization of potential catchments with high phosphorus loading**

Treatment Priority	Street Address	Parcel Acreage (acres)	Impervious Cover Area (acres)	Total Phosphorus Load (lb/year)
1	Fellows Rd	50.44	4.74	16.11
2	2 Ledge Rd	12.11	3.23	9.02
3	Nashua Rd	26.47	1.61	5.18
4	39 Marblehead Rd	21.06	0.52	4.86
5	11 Cobbetts Pond Rd	8.09	2.47	4.27
6	Haverhill Rd	18.28	0.26	2.72
7	3 No Lowell Rd	3.27	1.33	2.54
8	Londonderry Rd	8.03	0.28	2.46
9	Cobbetts Pond Rd	6.77	1.00	1.89
10	45 Cobbetts Pond Rd	0.97	0.96	1.64
11	4 No Lowell Rd	1.49	0.60	1.30
12	21 Haverhill Rd	0.98	0.37	0.60
13	Rockingham Rd	0.51	0.43	0.58
14	8 Depot Rd	0.58	0.33	0.53
15	Frost Rd	1.03	0.22	0.51
16	Depot Rd	0.32	0.26	0.42
17	Seavey Rd	0.63	0.20	0.35

**ATTACHMENT D** (separate file)

**Identification of Potential Retrofit**