**New Hampshire Small MS4**

**Phosphorus Source Identification Report**

**And**

**Potential Structural BMPs Report**

**Appendix H**

**Parts II.1.b (Year 4) and II.1.c (Year 5)**

**##MUNICIPALITY**

**Revised in May 2023 (Year 5)**

**Prepared By:**

**Seacoast Stormwater Coalition &**

**New Hampshire Lower Merrimack Stormwater Coalition**

**Important Note (May 2023): This template was updated in Year 5 to now include requirements in Parts II.1.c.i, II.1.c.ii, and II.1.c.iii of Appendix H. The template is now divided into two sections, Section 1 contains the Phosphorus Source Identification Report (Year 4) and Section 2 contains the Potential Structural BMPs Report (Year 5).**

*Introduction:*

*2017 NH MS4 permittees that fall under the Appendix H requirements due to a phosphorus impairment are required to complete a Phosphorus Source Identification Report (PSIR) during Year 4, and submit the report as part of the Year 4 Annual Report. Permittees with a phosphorus impairment are also required to complete a potential structural BMP report, using the information from their PSIR, and then submit this information as part of the Year 5 Annual Report. The following permittees are identified in the 2017 NH MS4 permit under Part 2.2.2.b.1 for a phosphorus impairment:*

*Atkinson Newton*

*Derry Pelham*

*Dover Raymond*

*Goffstown Rollinsford*

*Hampstead Salem*

*Kingston Sandown*

*Litchfield Somersworth*

*Manchester Windham*

*This report is only meant to complete the requirements in Appendix H sections II.1.b.i, II.1.c.i, II.1.c.ii, and II.1.c.iii which is for permittees with phosphorus impairments. This document is not meant for permittees with phosphorus Total Maximum Daily Loads (TMDLs). More information about the requirements associated with phosphorus TMDLs can be found in Appendix F section III.*

*The requirements in Appendix H section II.1.b.i are as follows (Year 4):*

*i. Within four years of the permit effective date the permittee shall complete a Phosphorus Source Identification Report. The report shall include the following elements:*

*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,*

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

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

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

*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 requirements in Appendix H Part II.1.c.i are as follows (Year 5):*

*i. 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 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 shall include:*

*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.*

*The requirements in Appendix H Part II.1.c.ii are as follows (Year 5):*

*ii. The permittee shall provide a listing of planned structural BMPs and a plan and schedule for implementation in the year 5 annual report. The permittee shall plan and install a minimum of one structural BMP 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. The demonstration project shall be installed targeting a catchment with high phosphorus load potential. The permittee shall install the* *remainder of the structural BMPs in accordance with the plan and schedule provided in the year 5 annual report.*

*The requirements in Appendix H Part II.1.c.iii are as follows (Year 5):*

*iii. Any structural BMPs installed in the regulated area by the permittee or its agents shall be tracked and the permittee shall estimate the phosphorus removal by the BMP consistent with Attachment 3 to Appendix F. The permittee shall document the BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated phosphorus removed in mass per year by the BMP in each annual report.*

**Section 1: Phosphorus Source Identification Report (Year 4)**

The purpose of this section of the document is to meet the requirement in Appendix H section II.1.b.i to create a Phosphorus Source Identification Report. Though ##Municipalitiy 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.

*Instructions for Section 1 of this document:*

*Following are step by step instructions to assist with the preparation of a PSIR for required permittees:*

***Step 1:*** *Go to the* [*Permittee-Specific Resources page*](https://www.nhms4.des.nh.gov/nh-resources/permittee-specific-resources) *on the NH MS4 website.*

***Step 2:*** *On each permittee’s Permittee-Specific Resources page is a section titled Appendix H. Note: Appendix H materials are only noted for permittees that are required to fulfill the Appendix H requirements for phosphorus impaired waterbodies.*

***Step 3:*** *Under the Appendix H section there are three spreadsheets*

*1.) Appendix H - Attachment A*

*2.) Appendix H – Attachment C*

*3.) Appendix H- Attachment D.*

*All three (3) of these documents are needed in order to fill in the required information for each permittees Phosphorus Source Identification Report.*

*Step 4: Attachment B is #Municipality Illicit Discharge Detection and Elimination (IDDE) screening and monitoring results which are located in #Municipality IDDE Program Plan.*

*Step 5: Attachments A-D should be included as attachments in the Phosphorus Identification Report.*

The requirements in Appendix H Section II.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

*Instructions:*

*Open the permittee’s Attachment A spreadsheet found on the permittee’s* [*Permittee-Specific Resources*](https://www.nhms4.des.nh.gov/nh-resources/permittee-specific-resources/bedford) *page on the NH MS4 website. In column B2 is the total MS4 Area in acres. Take that number and put it in the ##total MS4 area below.*

##Municipality 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. A spreadsheet containing all of the ##Municipalities raw data can be found in Attachment A.

The total MS4 area within ##Municipality is: ##total MS4 area acres

##Municipality 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 ##Municipality 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 ##Municipality 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 ##Municipality will complete a similar report for all privately-owned parcels located within the NH MS4 regulated area.

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

*Instructions: Attach all IDDE screening and monitoring results to this report and label it Attachment B.*

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

1. Impervious area and DCIA for the target catchment

*Instructions:*

*Open the permittee’s Attachment A spreadsheet found on the permittee’s* [*Permittee-Specific Resources*](https://www.nhms4.des.nh.gov/nh-resources/permittee-specific-resources/bedford) *page on the NH MS4 website. In column B3 is the total impervious area in acres. Take that number and put it in the ##total impervious area below.*

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

The total impervious cover (IC) area within the ##Municipality is: ##total impervious cover (IC) area acres

1. Identification, delineation and prioritization of potential catchments with high phosphorus loading

*Instructions:*

*When submitting the permittees annual report, attach Attachment C found on the permittee’s* [*Permittee-Specific Resources*](https://www.nhms4.des.nh.gov/nh-resources/permittee-specific-resources/bedford) *on the NH MS4 website. All the information needed for this requirement is located within Attachment C.*

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

##Municipality 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 ##Municipality 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 ##Municipality 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 ##Municipality will complete a similar report for all privately-owned parcels located within the NH MS4 regulated area.

1. 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

*Instructions:*

*Choose one of the following options:*

*Open Attachment D found on the permittee’s* [*Permittee-Specific Resources*](https://www.nhms4.des.nh.gov/nh-resources/permittee-specific-resources/bedford) *page on the NH MS4 website. Follow the instructions on the Purpose and Instructions tab to fill out the spreadsheet. Once the spreadsheet is complete, attach the newly completed Attachment D to this report.*

***OR***

*Use the list of top municipally-owned parcels from Attachment C to fill out the column labeled “Parcel” in the table below. Then fill out the rest of the table with the general information you have gathered about each of the individual parcels.*

##Municipality 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.

*Choose one of the following options:*

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.

**OR**

The following Engineering Feasibility Assessment Report table evaluates each of the identified target municipally-owned parcels based on the highest total phosphorus 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.

**Engineering Feasibility Assessment Report**

|  |  |  |  |
| --- | --- | --- | --- |
| Parcel | Next Planned Infrastructure Improvement | Estimated cost | Engineering and regulatory feasibility of redevelopment or retrofit |
|  |  |  |  |

A focus on municipally-owned properties is a priority for ##Municipality 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 ##Municipality will complete a similar ranking for all privately-owned parcels located within the NH MS4 regulated area.

**Section 2: Potential Structural BMPs Report (Year 5)**

**Important Note (May 2023): This template was updated in Year 5 to include requirements in Parts II.1.c.i, II.1.c.ii, and II.1.c.iii of Appendix H. Section 2 of this template contains the requirements due in Year 5.**

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 ##Municipality’s Phosphorus Source Identification Report in Section 1 of this document.

**Part II.1.c.i:**

***Note: This requirement is due in Year 5.***

##Municipality 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.

*Instructions:*

*Choose one of the following options:*

*If you chose to use and complete* ***Attachment D (Identification of potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment****), found on the permittee’s* [*Permittee-Specific Resources*](https://www.nhms4.des.nh.gov/nh-resources/permittee-specific-resources) *page on the NH MS4 website, in Section 1.5 of the Phosphorus Source Identification Report, use the information within Attachment D to fill out the Permittee-Owned Properties Retrofit Evaluation table below. In the “Engineering and regulatory feasibility of redevelopment or retrofit” column of the table, put “Engineering and regulatory feasibility study can be found in the attached Attachment D” for each of the parcels.*

***OR***

*If you chose to complete the Engineering Feasibility Assessment Report table in Section 1.5 of the Phosphorus Source Identification Report, take all the information from that table and paste it into the Permittee-Owned Properties Retrofit Evaluation table below.*

**Permittee-Owned Properties Retrofit Evaluation**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parcel** | **Next Planned Infrastructure Improvement** | **Estimated Cost** | **Engineering and Regulatory Feasibility of Redevelopment or Retrofit** |
| Street Address | 2024, unknown, estimated 2024, planned 2024, none | $ | See instructions above |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

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

***Note: This requirement is due in Year 5.***

##Municipality has provided a listing of planned structural BMPs and a plan and schedule for implementation in the table above.

##Municipality 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). ##Municipality will install the remainder of the structural BMPs in accordance with the plan and schedule above. This plan will be evaluated ##annual/biannually and will be adjusted accordingly.

##Municipality will provide a listing of planned structural BMPs and a plan and schedule for implementation in the Year 5 Annual Report. ##Municipality 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. ##Municipality will install the remainder of the structural BMPs in accordance with the plan and schedule above. This plan will be evaluated ##annual/biannually and will be adjusted accordingly.

*Instructions:*

*Copy all the 2023/2024 (Year 6) structural BMP project(s) from the Permittee-Owned Properties Retrofit Evaluation table above and paste them into the table below.*

**Permittee-Owned Properties Retrofit Evaluation**

**Planned or Estimated for Year 6 (2023/2024)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parcel** | **Next Planned Infrastructure Improvement for Year 6 (2023/2024)** | **Estimated Cost** | **Engineering and Regulatory Feasibility of Redevelopment or Retrofit** |
| Street Address | 2023/2024, estimated 2023/2024, planned 2023/2024 | $ | See instructions above |
|  |  |  |  |
|  |  |  |  |
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|  |  |  |  |

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

***Note: This requirement is due in Year 5.***

*Instructions:*

*Choose one of the following options:*

*If you have been using PTAP to track your BMP related metrics, attach the PTAP Annual Report as “Appendix E BMPs Located Within the Regulated Area Tracking Information” to the end of this report. The PTAP Annual Report will be provided by Jamie Houle in August or September of each year.*

***OR***

*If you did not use PTAP to track your BMP related metrics, use the “BMPs Located Within the Regulated Area Tracking Metrics” table below to report all the required information for each of the BMPs installed within the permittees regulated area.*

##Municipality’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. For tracking and quantifying load reductions from BMPs, there is a database called the Pollutant Tracking and Accounting Program (PTAP) supported by NHDES and a select number of municipalities. Coalition communities understand the importance of this effort and are committed to continuing to work towards better tracking and accounting strategies for both structural and non-structural BMPs. PTAP theoretically has limitless expansion capacity in the region and is already integrated with the EPA Region 1 supported BMP Accounting and Tracking Tool (BATT). This emerging collaboration will be a large component of future implementation efforts. This integrated planning tool provides a comprehensive solution to successful tracking and accounting metrics. The tracking information for each of the structural BMPs installed by ##Municipality in its regulated area can be found in Attachment E of this report. ##Municipality will provide the tracking metrics for all of the BMPs installed in its regulated area in the Year 5 Annual Report.

**OR**

##Municipality’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 ##Municipality in its regulated area can be found in the table below. ##Municipality will provide the tracking metrics for all of the BMPs installed in its regulated area in the Year 5 Annual Report.

**BMPs Located Within the Regulated Area Tracking Metrics**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **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** |
|  |  |  |  |  |
|  |  |  |  |  |

**ATTACHMENT A**

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

**ATTACHMENT B**

**Screening and Monitoring Results**

**ATTACHMENT C**

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

**ATTACHMENT D**

**Identification of Potential Retrofit**

**ATTACHMENT E**

**BMPs Located Within the Regulated Area Tracking Information**