# **Using a Self-Certification Process to Streamline Operation & Maintenance (O&M) of Private Stormwater Controls**

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## Purpose and Background

Ongoing maintenance of stormwater controls is essential for those controls to perform as intended to achieve water quality and water quantity benefits. Under the NPDES MS4 Stormwater General Permit for Massachusetts (MS4 Permit), municipalities intending to obtain credit for the phosphorus reductions achieved by stormwater controls (per Appendix F of the MS4 Permit) must ensure that ongoing maintenance is being performed. In accordance with Standard 9 of the Massachusetts Stormwater Handbook [[1]](#footnote-1), municipalities routinely require that applicants for stormwater, wetlands, subdivision, site plan review and special permits provide a stormwater operations and maintenance plan (O&M) in their applications. However, many municipalities find it challenging to ensure ongoing maintenance of stormwater controls occurs after a project is built by an applicant. One solution to this challenge is to require property owners annually self-certify they are inspecting and maintaining their controls. An O&M self-certification process as proposed herein would provide a reporting process that can fold directly into the municipality’s MS4 Annual Report and allow the municipality to focus inspections on auditing just a small proportion of the systems each year. Read on to learn how Stormwater O&M self-certification works.

O&M self-certification emerged as an interest and a need during the **Mystic Stormwater Collaborative Project**, which includes the communities of Cambridge, Lexington, Reading, and Watertown, and technical partners such as the Mystic River Watershed Association, University of New Hampshire Stormwater Center, and the U.S. Environmental Protection Agency (EPA). While the four participating communities understand the importance of conducting regular O&M on stormwater management controls, they expressed interest in new ways to address the challenges associated with ensuring O&M on smaller projects within existing regulatory frameworks and available resources.

## Model O&M Self-Certification Form

The O&M self-certification form should be simple and easy to complete by a property owner or their agent. A template form that communities can start with is provided in Appendix A.

The minimum information to be collected on a self-certification form should include:

* Name and contact information of owner
* Name and contact information of operator, if applicable
* Address/location of stormwater control
* Type of stormwater control
* Date of last inspection or maintenance for each control
* Certification statement
* Signature of owner or operator
* Date attesting to the certification statement
* Reference of the O&M Plan or guidance being followed

Many property owners may be unfamiliar with or unaware of their stormwater controls and maintenance responsibilities. Typically, a stormwater O&M Plan is approved as part of the permitting process for an improvement on their property.

Some projects that fall below a particular municipal permit threshold are often not required to develop a stormwater O&M Plan. For these properties, it may be helpful to append to the self-certification form a menu list of common small-scale stormwater control practices (e.g., dry wells, rain gardens, bio swales, and permeable pavers) along with O&M best practices. This will help serve as a reminder to such owners and their agents (e.g., operators) of the recommended O&M for their specific control(s). An O&M Plan approved through a municipal permit process should always take precedent over the maintenance best practices highlighted in an appendix to the form.

**Making Stormwater O&M Plans Readily Available:** Most property owners will not be well versed in stormwater controls and may not be aware that the stormwater controls approved on their site require ongoing maintenance. A municipality can help by ensuring that O&M plans approved through a permitting process are complete, include a map or figure identifying each control, and are attached to the permit when it is issued to the property owner. *(Note: Permits should be issued to property owners and linked to specific parcels, even if the applicant filing the permit application is an agent.)*

Depending on the municipality’s MS4 regulatory requirements and capacity for data collection, the form could include more specific operational information for the stormwater controls, such as:

* Permit number, so the municipality could track the form back to the original permit.
* A field to indicate whether the stormwater control ties into the MS4.
* Comment box for the owner/operator to describe specific maintenance performed or problems encountered since the last inspection.

Municipalities could require applicants of larger projects, which would be required to submit an O&M Plan with their permit application, to also customize and submit an O&M self-certification form as part of their permit application. The approved customized form could then be used by the owner for years to come.

## Regulatory Framework

For this self-certification process to succeed, property owners with stormwater controls must be legally required to submit the stormwater O&M self-certification form each year. This requirement should be embedded into the municipal permitting process either as a standard condition that is attached to the permit approval or found in regulations in the bylaw/ordinance or regulations. This approach will differ among municipalities depending on the existing permit structure for stormwater controls. Regardless of which permitting authority is responsible, the same form should be used and supplemented as needed with any other conditions that may be required by the issuing authority. The permit that includes the ongoing reporting requirement should be issued for a given property and should run with the property.

**New Controls:** Moving forward, owners/operators of all permitted stormwater controls should be required to submit an annual form certifying completion of the ongoing stormwater O&M Plan approved in their permit.

**Existing Controls:** Permits for prior permitted stormwater controls should be reviewed to determine if O&M was required and if annual reporting can be required. If O&M was required, the municipality can explore whether and how to include those properties in the self-certification process.

O&M self-certification may be beneficial to municipalities for small, medium, and large projects alike. Larger projects often manage O&M of stormwater controls well since they tend to have better access to resources (e.g., funding, engineers, site managers or operators). However, a municipality may find it useful to require larger projects to self-certify if the community has a significant number of these larger projects to oversee, and limited resources for inspections and enforcement. Smaller projects, on the other hand, may not be as well-informed to properly manage stormwater controls, but self-certification can provide an important educational service to the owners, even if there is no or limited follow-up and enforcement on small projects. Municipalities may find the best use of their resources to target the medium projects, like multi-family housing and mid-size commercial properties.

**Consistency in Stormwater Standards Across Permits:** If stormwater management controls are evaluated in multiple permit processes (e.g., Stormwater Management Permit, Wetlands Order of Conditions, Site Plan Review, Subdivision Approval, Drainage Connection Permit), those processes should be made consistent so that a given development project and its stormwater controls are held to a uniform set of stormwater standards, including a stormwater O&M Plan.

## Submission Frequency

Stormwater O&M self-certification forms should be collected from property owners on an annual basis. Maintaining one uniform submittal schedule, regardless of the installation date or permit issuance date for a given stormwater control, helps to simplify the process for both the property owners/operators and the municipality. The due date for self-certification forms should be selected to provide sufficient time for the municipality to review and compile the results and include them in the municipal MS4 Annual Report.

## Submission Process

Completed forms should be directed to a single department or individual to log the responses. The municipality can create a specific email address to receive completed forms, and allow paper copies to be mailed or hand delivered if desired. A municipality that has an online database system in place could create a mechanism for uploading completed forms or ideally an option for completing the form online (there could be a link to a town data base, where the user only has access to his/her submittal field). In the early years, the number of reporting forms collected each year may be minimal. However, over time, it will increase. For this reason, an automated process is recommended.

## Auditing and Enforcement

The crux of the self-certification process is auditing. An auditing process involves the municipality performing a small percentage of stormwater inspections each year and is essential to ensuring the credibility of the self-certification reporting. Municipal staff must be authorized through the individual permitting processes or the stormwater ordinance/bylaw to perform inspections and enforce the approved O&M Plan on the applicable properties.

Such authorization for enforcement may currently be provided to different departments, boards, or commissions depending on the permits issued for a given project. It could be beneficial to streamline the auditing and enforcement powers through just one department, such as Engineering, Public Works, or Health, so that the system can be more easily monitored. Many bylaws/ordinances or regulations include a provision by which a board or commission or other permitting entity can designate an agent to perform some of the duties, including enforcement. Review your code for this type of authorization and consider coordinating with other permitting entities to designate one consistent enforcement agent for all stormwater controls.

**Credible Enforcement Mechanism:** Credible enforcement is necessary to ensure MS4 permit holders can obtain phosphorus reduction credit for stormwater controls.

Although O&M self-certification may be required on projects of variety of sizes, the municipality should focus enforcement resources on medium and large projects. Including small projects in the self-certification process serves as a great educational tool; however, enforcing these types of projects may to be prohibitively burdensome for the municipality.

A properly designed audit program will allow a municipality to maintain confidence that individual self-certified stormwater controls are in fact being maintained. In addition, the MS4 permit requires municipalities to certify that all stormwater controls they are claiming pollution credit for are working and maintained as designed. An important mechanism to ensure that the municipality can make that claim with confidence is a statistically significant auditing program. The community may want to perform a statistical analysis to determine the percentage of audits that should be done each year to ensure general compliance with O&M across all self-certified sites. The box below provides some simple tips for developing an audit to consider for developing an audit program, including some guidance on selecting the number of annual audits to perform based on the total number of controls in the program. The goal is to perform the audits over the course of a 5 year permit cycle.

## Useful Tool: Permitting Database

**Tips for Developing an Audit Program:**

1. Select the number of audits to perform to ensure with a 95% confidence level that the audited systems will be representative of the total population. If your municipality has fewer than 50 certifications, all of the systems should be audited over the 5-year cycle. As the number of certifications increases, the relative number that needs to be audited decreases.
2. Randomly select the systems to audit (e.g., select every 5th certification in your database).
3. Notify property owners of audits electronically, to let them know when it will be, how long it will take, and to offer to change to a more convenient time if owners want to be present.
4. Develop an audit checklist that mirrors the self-certification standards, so the audit report can be used as an example for self-certification.
5. Communicate the results to the property owner, with a timeline to address deficiencies and a reporting requirement or re-auditing protocol, depending on seriousness of non-compliance
6. At end of the annual or 5-year audit period, tabulate audit data to identify common maintenance issues for further action or revised guidance as needed to improve compliance.

A permitting database, from a basic internal Excel file to a GIS database to an online cloud-based system, can be an exceptionally useful tool for communities working to track stormwater controls. A database can help multiple departments within a municipality monitor and participate in the permit approval process, and can serve as an organizational tool to log all permits issued to an individual parcel over time. Important data to track over the long term include permit issuances, parcel ID and up-to-date contact information for parcel owners.

Some communities have instituted an online database to coordinate and track permit applications, reviews, and approvals among municipal departments. The permit information is typically linked to individual parcels allowing a community to track all permits and additional relevant information on a parcel-by-parcel basis. In addition, a permitting database enables the municipality to run reports, compile records, generate electronic communications, and trigger certain reviews or audits on a designated schedule or frequency. In addition, an online permitting database with a public-facing interface can allow permittees to submit documentation to their record, such as an annual stormwater O&M self-certification form. Communities using an online permitting database, such as Viewpoint Cloud, may find it easy to develop and require electronic submission of the O&M self-certification form. Filing these forms electronically will help provide easy access to the forms and critical information required for annual reporting to comply with the MS4 Permit requirements.

**Common Online Permitting Platforms:**

Viewpoint Cloud (<https://www.viewpointcloud.com/>). Used in Cambridge and Lexington, MA.

CitizenServe (<https://www.citizenserve.com/>). Used in Lawrence, MA.

CityView (<https://www.municipalsoftware.com/>).

Govpilot (<https://www.govpilot.com/>).

*Note: Listing of permit database platforms in this document is for informational purposes only, and does not represent an endorsement by the authors or EPA.*

## Documenting and Tracking Prior Existing Stormwater Controls

Communities may lack records on the existence and location of small stormwater controls, particularly because stormwater controls could have been approved through one of several different permit processes (e.g., Wetlands Order of Conditions, Site Plan Review, Stormwater Permit, Building Permit). While it would be ideal to know where every stormwater control is located throughout the municipality, a community may only be interested or able to document the type and location of stormwater controls approved and installed in recent years. The MS4 Permit only allows phosphorus control credit for practices if an inspection is performed and any necessary maintenance is performed to bring the system into working order. Therefore, the process of folding these prior existing stormwater controls into the reporting process is useful for the overall health of the watershed in which they are located, but need not be prioritized over tracking and maintenance of new practices.

## Communicating with Property Owners

It is best practice to issue reminders to owners/operators to conduct O&M as part of completing the self-certification form. Reminders could be easiest sent via the online permitting database, if applicable. Communities that do not have an online database could send annual reminders to permittees through regular mail and include reminders in other general municipal communications such as social media, town website, or utility billing. Educational materials that are used to promote O&M to smaller projects should be careful to not include a punitive tone if the municipality does not intend to audit and enforce O&M self-certification for small projects.

Ensuring continuity of O&M practices through property transfer can be challenging. Property transfer is a time when information about municipal requirements for the property, such as O&M self-certification, can get lost. While some municipalities require the transfer of property with larger stormwater controls to renew an O&M plan, it is more difficult to track for small and medium projects. Municipalities can work with the water department to notify the stormwater authority when there is a change in water meter ownership. Other mechanisms may be readily available to the community if an online database is utilized. Municipalities may choose to adopt a bylaw to ensure continuity.

Under the MS4 Permit, municipalities are required to implement an education and outreach program for their community, including residents, businesses, and institutions, which comprise the targeted audience for O&M self-certification. Communities can use this opportunity to circulate a fact sheet on the importance of on-site stormwater management and conducting regular O&M.

## Appendix A: Template O&M Self-Certification Form

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| **Stormwater Control Operation and Maintenance**  **Annual Self-Certification Form**  **Calendar Year: \_\_\_\_\_\_\_\_** | | | | |
|  |  |  | |  |
| **Owner (required)** | | | **Operator (if applicable)** | |
| Name: | | | Name: | |
| Phone: | | | Phone: | |
| Email address: | | | Email address: | |
| Street Address of Stormwater Control Location: | | | | |
| Name and Date of Operations and Maintenance Plan:  (Note: If your property received or was a part of property that received any of the permits listed on the back of this form since 2020, your permit included a Stormwater O&M Plan that you should be following. Please see the back of this form for more information.) | | | | |
|  |  |  | |  |
| **Name/ Type of Stormwater Control** | | **Description and Date of Maintenance performed since July 1 of last year** | | |
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| **Certification Statement**  I understand that I own a stormwater control practice or practices on my property and I understand that I need to perform regular and ongoing maintenance of that/those practice(s) to ensure performance and functionality, and to protect the water resources in my community. I certify that I have performed the approved maintenance for my stormwater control practice(s) for this year. | | | | |
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| Signature of Owner or Operator: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |

Note: The Town/City performs maintenance audits each year on a small percentage of stormwater controls. You may be contacted by the Department of Public Works for this purpose.

**Stormwater Control Operation and Maintenance**

**Annual Self-Certification Form**

**ADDENDUM**

(This addendum is intended to serve as a reference for property owners in completing the Annual Self-Certification Form. It should be edited by each municipality to meet its own needs)

These are the types of land development or land alteration permits that may include Stormwater O&M Plans for your stormwater practices:

This list of permits should be adjusted by each individual municipality according to its own permit practices.

* Stormwater Management Permit
* Wetlands Order of Conditions
* Site Plan Review
* Subdivision Approval
* Drainage Connection Permit

Our records show that you received a ***[permit type]***on ***[date].*** Please contact the ***[appropriate department]*** at ***[municipality name]*** Town Offices for help in locating the appropriate Stormwater O&M Plan for your property.

If a database is used to track permits and communicate with permittees, a statement like this could be included on each individual self-certification reporting form that is generated for each permitted property.

## Appendix B. Maintenance Needs for Common Small Stormwater Controls for Small Projects

The information summarized below is for stormwater controls that have no approved Operations and Maintenance (O&M) Plan associated with it. Approved O&M Plans take precedent over the information provided below.

| **Stormwater Controls** | **Maintenance Summary** |
| --- | --- |
| **Bioretention** | **Regularly:** Inspect your bioretention practice, remove trash and debris, pull weeds, and repair any erosion gullies.  **Early Spring and Fall:** Mow grassy areas of the practice and prune your plants, remove dead vegetation and replace if needed, and replenish mulch in the bed as needed.  **If the practice is slow to drain:** you may need to aerate the top layer of soil or remove fine sediment that may have accumulated. Check the underdrain system through the cleanout to make sure there isn’t standing water in the pipe. |
| **Dry Well** | **Early Spring and Fall:** inspect the downspout connection to the dry well to be sure it is properly connected and clear of debris. For open downspouts, remove debris and sediment buildup in the upper gravel layer.  **If system appears clogged:** If excessive ponding or gully erosion is observed, and/or the system does not drain within three days, your dry well is not functioning properly. Check the drainage connection and gravel for clogging. Remove and replace all stone if needed, or possibly the entire drywell structure if crushed or otherwise damaged beyond repair. |
| **Infiltration Trench** | **Early Spring and Fall, and after major storms:** Inspect the system surface for damage and remove accumulated debris and sediment from the upper layer of gravel. Check the underdrain system through the cleanout to make sure there isn’t standing water in the pipe, if the practice has an underdrain system.  **Annually:** Inspect system and remove sediments, trash and debris from sediment removal (pretreatment) systems when ½ of the storage volume is full of sediment.  **If the trench is not draining:** remove and replace the top layer of stone and filter fabric. If ponding continues, gravel layers and pipes may need to be replaced but this usually does not occur until years of use with proper maintenance. |
| **Permeable Pavers** | **Monthly:** Remove debris and trash and sweep away sediment buildup that can clog the system over time.  **Early Spring and Fall:** Mow and seed the grass in the pavers. Add sand or gravel to stone pavers to replace any lost material.  **Winter:** Attach rollers to the bottoms of snowplows to prevent snagging, or perform snow removal with a snowblower or shovel.  **After any major storms:** Check that paver system is draining. If it is not, remove and wash gravel in joints, and remove any plant growth that was not originally planted. Refer to manufacturer’s instructions for pressure washing or vacuuming. |
| **Planters** | **Early Spring:** Inspect the planter and replace any dead or damaged plants, missing gravel, damaged infrastructure and repair any damage to the planter, especially to address leakage.  **As needed:** remove debris, trash and sediment that accumulates in the planter. |
| **Porous Pavement** | **Routinely:** Remove trash and debris (particularly leaves) from the surface.  **Start of each season:** Vacuum sweep (you will need to contract this service, as this requires special equipment)  **Annually:** Inspect the surface for deterioration and crumbling and take note of any surface ponding. Repair/replace when needed.  **Note:** Do not use sand on porous pavement for winter snow management. Porous pavement helps to significantly reduce standing water, which reduces icing and the need for sand or salt. Sand will clog the system. Salt can be used sparingly in most areas. |
| **Rain Garden** | **Regularly:** Inspect your rain garden and remove trash and debris, pull weeds, and repair any erosion gullies.  **Early Spring and Fall:** Mow or prune your plants, remove dead vegetation and replace if needed, and mulch the bed.  **If the rain garden is slow to drain**: you may need to aerate the top layer of soil or remove fine sediment that may have accumulated. |
| **Water Quality Swale** | **Spring and fall:** Mow the swale and remove any accumulated trash and debris.  **Annually:** inspect for accumulated sediment and/or erosion; remove sediment and repair gullies as needed.  **If draining poorly:** roto-till the bottom of the swale to improve aeration and reseed as needed. |

1 Some stormwater controls, including underground storage, are more advanced or more difficult to access than others and need an experienced operator to routinely inspect and conduct maintenance.

1. The Massachusetts Stormwater Handbook is currently being updated. Requirements for the individual stormwater standards may change. [↑](#footnote-ref-1)