

6.1 Property Owner Inspections and Maintenance

Post-construction, the property owner is responsible for inspecting and performing long-term maintenance of all stormwater management practices (SMPs) and the associated drainage areas in accordance with the Operations and Maintenance (O&M) Agreement, the Philadelphia Water Department (PWD) Stormwater Regulations (Stormwater Regulations) ([Section 1.2](https://water.phila.gov/development/stormwater-plan-review/manual/chapter-1/1-2-stormwater-regulations/) water.phila.gov/development/stormwater-plan-review/manual/chapter-1/1-2-stormwater-regulations/) or applicable design criteria for Stormwater Retrofit projects that have received Stormwater Grant funding, and the Philadelphia Property Maintenance Code. SMPs and associated drainage areas must be continually inspected and maintained to ensure long-term functionality in accordance with the approved design function. Property owners are expected to document inspection and maintenance activity for each SMP. Maintenance and inspection records should be submitted when applying for Stormwater Credit renewals ([Section 6.3](https://water.phila.gov/development/stormwater-plan-review/manual/chapter-6/6-3-stormwater-credits/) water.phila.gov/development/stormwater-plan-review/manual/chapter-6/6-3-stormwater-credits/). These records can also assist PWD at the time of PWD inspections. An SMP-specific, site-specific SMP Maintenance Guide, prepared by the designer and submitted to, and reviewed by, PWD during the Post-Construction Stormwater Management Plan (PCSMP) Review Phase, should be provided to and implemented by the property owner as a guide for long-term O&M of the SMPs on-site. A sample of a compiled SMP Maintenance Guide is available in [Appendix G](https://water.phila.gov/development/stormwater-plan-review/manual/appendices/g-smp-maintenance-guide-documents/) water.phila.gov/development/stormwater-plan-review/manual/appendices/g-smp-maintenance-guide-documents/ for reference, along with Maintenance Schedule Form templates and related maintenance information.

Operations and Maintenance Agreement

O&M Agreements are created during the development phase of a project and are recorded against the property with the Philadelphia Department of Records. Accordingly, the Agreements run with the land, not the owner, if and when the property is sold or otherwise conveyed. Therefore, when a new owner assumes ownership of the property, they also assume all responsibilities of the property owner, as described in the Agreement. PWD does not take action against property owners for projects that do not advance to construction.

The property owner of record is bound by the O&M Agreement and must maintain the SMPs such that they adequately perform their designed functions. The Agreement also requires the property owner to maintain the site in accordance with the Approved PCSMP, prohibiting alterations including the conversion of pervious areas to impervious cover without authorization from PWD. In certain developments, a Homeowner's Association (HOA) or Condominium Association may assume the responsibility for maintenance. In these instances, PWD recommends that the O&M responsibilities associated with SMPs be incorporated in the declaration for the HOA or Condominium Association.

Property Owner Inspections

As described in [Chapter 4](#) water.phila.gov/development/stormwater-plan-review/manual/chapter-4/4-0-introduction/, SMPs consist of multiple components (e.g., inflow, conveyance, storage, outflow, and vegetation, etc.). Each of these components must be inspected and maintained regularly to properly function. Property owners, or individuals conducting inspections on the property owner's behalf, must have a strong working knowledge and understanding of each SMP and its critical design components prior to conducting inspections ([Chapter 4](#) water.phila.gov/development/stormwater-plan-review/manual/chapter-4/4-0-introduction/).

Frequent SMP inspections performed by the property owner are critical to identifying and remediating small maintenance issues before they have the potential to become large, costly repairs. Routine inspections should be performed by the property owner at least four times per year, preferably at the end of each season but should be modified based on the property owner's findings and frequencies or activities modified as necessary. Property owners should perform additional inspections throughout the year, especially during and after large rain events, to ensure that SMPs are functioning as designed.

The primary purpose of an inspection is to make sure an SMP is properly functioning and, if not, to identify corrective actions that are required to restore proper function. A properly functioning SMP allows water to freely enter at each inflow point, collect within the storage areas, infiltrate into the soil or, depending on the design, freely drain through an outlet control structure to a downstream conveyance system. During inspections, owners are to note the following conditions:

- Emergency spillways and overflows are clear of debris;
- Plants within properly functioning SMPs are healthy and thriving;
- Bare soil or areas of active erosion are not present;
- Structures appear to be sound and in good condition, with no signs of settlement; and
- Storage areas are slowly draining after significant rain events (in no more than 72 hours) and are free of significant accumulations of sediment, debris, and trash that would substantially reduce the available storage volume.

If any of these conditions are not true, maintenance is most likely required. More detailed information on conducting inspections for different SMP types is found in [Chapter 4](#) water.phila.gov/development/stormwater-plan-review/manual/chapter-4/4-0-introduction/ within each SMP section.

Owners should note that proper and thorough inspection may require special certifications for confined space entry and/or special equipment such as closed-circuit television systems required to inspect pipes. It is the property owner's responsibility to make sure that all inspections are conducted in a safe manner, according to applicable regulations, and using appropriate equipment.

Property Owner Maintenance

By conducting routine maintenance, property owners identify and address minor maintenance tasks that ensure the proper functioning of an SMP and reduce the need for larger, more expensive repairs over time. If SMPs begin to fail, the subsequent increase in stormwater loading on the sewer systems may contribute to backups and combined sewer overflows into nearby rivers. This can cause damage to aquatic life, endanger public health and safety, and violate State and Federal water quality laws.

Required routine maintenance is SMP- and site-specific. The property owner is referred to [Chapter 4](https://www.water.phila.gov/development/stormwater-plan-review/manual/chapter-4/) [water.phila.gov/development/stormwater-plan-review/manual/chapter-4/](https://www.water.phila.gov/development/stormwater-plan-review/manual/chapter-4/) for specific maintenance guidance for individual SMPs. The maintenance guidelines included in Chapter 4 represent typical, basic maintenance tasks and frequencies for the SMPs in each of the sections. SMP Maintenance Guides, however, are SMP- and site-specific. Prepared by the project's designer, they should be provided to, and implemented by, the property owner as a guide for long-term O&M of the SMPs on-site.

While maintenance is SMP- and site-specific, typical routine maintenance tasks include, but are not limited to, the following:

- Removal of sediment and debris from inlets and outlet control structures, storage areas, and conveyance pipes;
- Jetting/flushing and vacuuming subsurface basin pipes;
- Regular maintenance of pre-treatment structures including removal of sediment and debris from permanent filter bags and resetting dislodged pre-treatment hoods;
- Establishment watering for new plantings (during the first two to three years after the initial planting);
- Emergency watering during prolonged dry periods;
- Removal of invasive plants or weed species;
- Mulching;
- Replacement of worn bolts, latches, and other appurtenances;
- Minor asphalt or concrete patching/repair;
- Maintenance of porous pavement;
- Minor erosion repairs including slope stabilization;
- Minor replanting, reseeding, and re-grading; and
- Pruning of trees and shrubs, as appropriate, prior to winter months.

These tasks are associated with SMPs that are generally in good condition and properly functioning. If SMPs are not properly functioning, more extensive maintenance or repairs may be needed, which may include, but is not limited to, full excavation, removal, and replacement of permanently clogged media, porous surfaces, or subsurface components.

Proper execution of routine maintenance tasks may require confined space entry and/or the use of specialized equipment. Property owners are responsible for safely conducting maintenance activities in accordance with applicable regulations and using appropriate equipment and properly trained personnel. Some SMPs, such as porous pavement and subsurface basins, require special equipment and/or training to maintain. PWD has a list of **local contractors** water.phila.gov/pool/files/smp-maintenance-contractors.pdf who provide these maintenance services. This list is not all-inclusive and does not constitute a recommendation of the companies listed. This list is merely a collection of businesses that have performed the type of work that is typically required in stormwater management maintenance. The property owner may hire any qualified stormwater professional of their choice.

Site Modifications

Any proposed changes to SMPs, drainage configurations, or cover type must be approved by PWD to confirm that the change will not affect the property's continued compliance with the Stormwater Regulations or approved stormwater management design. This includes notifying PWD if any site improvements are planned to the property that could affect SMP functionality or regulatory compliance, such as changes in site grading or stormwater drain location/configuration, as well as the addition of new impervious areas, such as walkways, patios, decks, driveways, parking lots, sheds, or buildings. Unauthorized removal or modifications of any SMPs or drainage areas will result in enforcement actions by PWD.