



Harvard University

Sustainable Site Maintenance (Landscaping) Standards

September 2023

The Sustainable Site Maintenance (Landscaping) Standards were developed to facilitate alignment and optimization across the University's (and its vendors') maintenance practices as they relate to site maintenance practices, existing landscaped areas, and green infrastructure. Green infrastructure includes, but is not limited to, measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspire stormwater and reduce flows to sewer systems or to surface waters.

With these Standards, Harvard University seeks to:

1. **Align** our site maintenance around a shared vision and common set of evidence-based principles and sustainability goals, while allowing for site specific adjustments.
2. **Drive** change in the marketplace through partnerships, best practice sharing, purchasing power and increased transparency.
3. **Enhance** education and increase training opportunities as it relates to sustainable site maintenance practices.
4. **Optimize** campus for nature and ecosystem protection, well-being, climate, and community.
5. **Quantify** the environmental and health impacts through reporting to track progress.

These standards outline the core requirements of a process-driven, holistic approach to land stewardship focused on the performance of natural systems, conservation, health, and innovation. Program goals prioritize the creation of healthier, more resilient landscapes for environmental, animal, and human health. They apply to the major landscaping vendors on Harvard's campus, and are provided as a resource for Harvard's Schools and Units to hold their vendors accountable in key priority areas. They set out priority areas of focus to encourage action, and are not meant to be used in a punitive way if some of the guidelines cannot be followed.

These standards are based on the best science available but will change over time to stay aligned with emerging research; this is a living document. Harvard recognizes that our campuses are part of a larger, interconnected ecosystem and will continue (1) to protect and restore our ecosystems, which will change over time as the climate of New England changes; (2) to prioritize conservation, research, and education; and (3) to incorporate sustainability goals into design and planning at the facility, campus, and district level to enhance regional biodiversity and personal well-being.

The following standards are intended strictly for site maintenance services in order to provide ongoing long-term sustainability of the University's site maintenance practices, landscaped areas, and green infrastructure. These standards do not include design guidance for newly developed sites and major redevelopment projects.



Sustainable Site Maintenance Plan

Develop and maintain, a Sustainable Site Maintenance Plan for all sites contracted for site maintenance services. If needed, a helpful template can be found in [SITESv2 Section 8: Operations and Maintenance P 8.1](#).

Adopt and sustain practices to address, at a minimum, each of the following topic areas for achieving low impact sites for all landscapes, green infrastructure, and maintained hardscapes throughout your portfolio. Guidance has been provided for some of these categories below.

- I. Biophilia and Biodiversity, including:
 - o invasive species management
 - o plant stewardship
 - o sensitive site features
 - o soil testing and stewardship
 - o turf selection and care
- II. Chemical application, including:
 - o conservation measures
 - o snow and ice
- III. Equipment, including:
 - o air quality & noise protection
- o outdoor energy use & emissions reductions
- IV. Materials Management
- V. Stormwater Management, including:
 - o erosion and sedimentation control
- VI. Water Conservation and Use

I. BIOPHILIA and BIODIVERSITY

Biophilia Considerations

- Incorporate landscape design principles such as prospect and refuge, complexity and order, connection with natural systems, and presence of water into reworked areas and replanting plans within annual site maintenance work.
- Prioritize year-round indoor and outdoor views in your plant selection process.

Biodiversity Considerations

- Prioritize plants that will attract pollinators, when possible.
- Define a clear approach and strategy for enhancing biodiversity through plantings and maintenance.

Tree and Shrub Care

- Strive to conduct sustainable and sound arboricultural practices such as:
 - o Remove trees only when necessary for: construction projects, the safety of humans or other nearby plants species, or preventing damages to infrastructure.
 - o Use synthetic fertilizers only in necessary circumstances; try to use them sparingly.



- Use non-toxic pest and disease control for trees, as certified by Organic Materials Review Institute (OMRI), whenever possible.
- Utilize certified arborists or horticulturalists, whenever possible.

II. CHEMICAL APPLICATION

- Use practices that rely on observation and planning (e.g., integrated pest management) to reduce synthetic inputs that may have short and long-term deleterious impacts on human health, animals, and the environment.
- Use synthetic fertilizers only in necessary circumstances, try to use them sparingly.
- Use non-toxic pest and disease control for plants, whenever possible, as certified by [Organic Materials Review Institute](#) (OMRI).
- Reschedule chemical applications whenever possible if winds are above 10MPH to ensure public health and safety.
- Ensure snow/ice removal and types of melting agents used are safe for ecosystems and human and animal health.
- Submit the [MA Pesticide Use Report](#) as part of the annual reporting form (see end of document).

III. EQUIPMENT

Air Quality and Noise Protection

- Protect air quality during landscape maintenance by scheduled maintenance, eliminating vehicle idling, low-emitting equipment, and manual or electric powered maintenance equipment.
- Reduce pollution by minimizing the use of powered landscape maintenance equipment that exposes site users to localized air pollutants and generates greenhouse gasses.
- Use powered maintenance equipment only when the site is closed or when there is the lowest volume of site users.
- Prohibit smoking on-site.

Outdoor Energy Use and Emissions Reduction

- Develop Equipment and Vehicle Guidelines that address reduced need for powered maintenance equipment, reduced mowing time, and reduced equipment replacement. Prioritize the purchase of electric and environmentally sustainable equipment that minimize emissions and meet or exceed EPA standards.
- Conduct annual evaluation of vehicle and equipment practices.



- Institute an anti-idling policy, informed by the [MA DEP Anti-Idling Law](#), for all landscaping vehicles present on campus.
- Adhere to energy efficiency and safety requirements, as well as light pollution reduction efforts, for all outdoor lighting installed on-site.
- Use high efficiency exterior lighting and renewable sources for landscape electricity needs, when possible.

IV. MATERIALS MANAGEMENT

Recycling, Compost Collection and Use

- Provide for storage and collection of recyclables, trash, and compost for maintenance and site visitors.
- Recycle all organic matter and reuse on-site to the highest degree possible.
- Utilize the application of compost teas, whenever possible.

V. STORMWATER MANAGEMENT

Maximize Peak Flow Reduction

- Acquire and/or identify Best Management Practices (BMPs) for all on-site stormwater management, site infiltration systems, and green infrastructure that address stormwater volume and quality. Continually ensure BMPs are well known across maintenance staff and executed to ensure high performance.
- Prioritize permeable hardscapes, rain gardens, rainwater harvesting, planter boxes and bioswales where appropriate.
- Create and maintain a comprehensive soil management plan that includes soil maintenance, preventive care, aligning plant selection with existing light, moisture, and soil conditions that will allow for healthier landscape and the need for less care, etc.
- Perform regular drainage maintenance to reduce chances of local flooding.
- Consider implementing rain gardens, if feasible, to reduce chances of local flooding.

VI. WATER CONSERVATION/USE

- Perform annual startup audit of irrigation equipment to ensure workability, upgrading (e.g., to smart equipment) as necessary, to ensure the highest level of water conservation.



- Install and monitor dedicated (preferably smart) irrigation clocks for all irrigation systems in order to optimize water savings and understand how much water is being applied to the landscape. (Note: Irrigation equipment and clocks require the EPA WaterSense label.)
- Limit or eliminate the use of potable water or other natural surface or subsurface water resources available on or near the project site for landscape irrigation.

Advancing Sustainable Site Maintenance Practices

A. PROFESSIONAL DEVELOPMENT

Professional Knowledge

- Familiarize crew with established soil texture and biological specification standards for the landscapes to be properly maintained in natural balance and long-term health. If none exist, create appropriate soil specifications based on best practice organic maintenance standards.
- Ensure the maintenance contractor or site manager commits to educating maintenance personnel on the goals and implementation of the Sustainable Site Maintenance Plan via annual workshop, online training, or other preferred method.

Professional Opportunity

- Require all landscape teams to be [Sustainable Landcare](#) or [Organic Land Care](#) accredited, or complete comparable training program.
- Host best practice sharing forums.
- Follow University guidelines for the advancement of diversity and inclusion.

NOTE: The accompanying “annual reporting form” will include an opportunity to any innovative Professional Development opportunities that your team has participated in, including dates and title of Sustainable Site Maintenance workshop(s) and best practice sharing forum(s).

B. COMMUNITY ENGAGEMENT

Landscaped Sites as a Living Lab

- Promote sustainability awareness and education.



- *Example: Harvard students have worked with landscaping crews to establish rain gardens, micro-prairies, and native species – supported by the Office for Sustainability’s Student Grant Program.*
- Find innovative ways to showcase or amplify the innovations in sustainable site maintenance.
- Develop and communicate case studies highlighting innovation in sustainable site maintenance.

NOTE: The attached “annual reporting form” will include an opportunity to list any innovative Community Engagement Opportunities including Living Lab sites, case studies, etc.

Performance Tracking

Submit “annual reporting form” to the Office for Sustainability (sustainability@harvard.edu) by
(Month, Day, Year)

Annual reporting form ([linked](#)) includes:

1. Current versions of all Sustainable Site Maintenance Plans that reflect any changes in line with adaptive management.
2. [MA Pesticide Use Report](#)
3. Additional Information