

Dickinson College Grounds and Landscape Management Policies and Practices February 26, 2015

For most visitors to Dickinson College, their first introduction to the college is through the landscape – design, plant selection, and upkeep all play a part in a visitor’s first impression. At Dickinson College, the first impression is a college dedicated to sustainable landscapes, practices, and values.

Over the years, the Dickinson College landscape has gradually changed to reflect the college’s sustainability goals and contributes to a campus-wide dedication to sustainability and stewardship. Landscape management has become more ‘relaxed,’ focusing on the health of not only plants but on all the areas that sustain them – from soil to water management, to insects and other wildlife, and to how the landscape is viewed to fit in with these goals. The Dickinson College landscape has become a living laboratory, enhancing what is taught in the classroom with a hands-on, real-world experience. This document will be periodically reviewed and updated by the Dickinson Director of Grounds & Landscaping.

LANDSCAPE AREAS ON CAMPUS:

Total Landscape on campus proper (includes walking paths and hardscape): **Approximately 128 acres**
Within all landscapes are small plantings of vegetables and herbs for use by students and staff.

- **Traditional (shrubs, lawn, trees): Approx. 28 acres**
- **Native: Approx. 3 acres**
- **Athletic fields: Approx. 67 acres** (approximately 25 acres natural turf, 5 acres synthetic turf, and 37 acres low-maintenance turf)
- **Undeveloped: Approx. 30 acres**

TRADITIONAL LANDSCAPE: The traditional landscape consists of shrubs and trees (not necessarily native) and pleasant open areas of turf, such as the college greens and areas around dorms and academic buildings where people sit, relax, play games, and enjoy the open spaces. Most of these areas are high traffic/high visibility areas, and as such, particular care and maintenance are administered. As older trees, shrubs, and perennials die off or become over-crowded, more native plant species are planted to support local wildlife and native plant landscape education.

NATIVE LANDSCAPE: As the Dickinson Sustainability Initiative has become more established, the landscape of Dickinson College has also transformed. To date, four areas, approximately three acres, have been completely replanted with native plantings and include trees, shrubs, perennials, and grasses. One area has been turned into a native plant meadow, particularly for the study of entomology. A native landscape is very different, and very obvious, to our visitors and promotes questions and comments that create numerous educational opportunities. Many students who have selected Dickinson College state that they have done so because of the native/vegetable mix landscapes. Our native landscapes create a perfect educational opportunity to study native plants, insects, and wildlife; conservation of soil and water; and maintenance of gardens.

ATHLETIC FIELDS: Athletic and sports fields require a different set of maintenance techniques due to the constant pressure put on turf and its surrounds. However, IPM and sustainable practices are

used here as well, including using disease resistant turf seed cultivars and monitoring watering needs and pest thresholds.

UNDEVELOPED LAND: Approximately 30 acres on the west side of campus are undeveloped meadow and swale that is mowed once a year with the debris left on the fields. The fields are a mix of native wildflowers and exotic introductions. At one edge of the meadow is the Dickinson College Community Garden, an all-organic vegetable garden supplying about 30 gardeners with plots ranging from 40 to 100 s/ft.

SUSTAINABLE LAND MANAGEMENT PRACTICES:

As the science advances, the Facilities Management Grounds department is continually improving and updating sustainable landscape practices.

IPM:

- 1) Grounds personnel have strictly limited the use of pesticides within the landscape. If a pesticide is deemed necessary due to threshold limits, it is used for spot treatment when possible before being applied area wide. Pest thresholds are set and monitored with the implementation of organic means, such as sticky papers, traps, and visual observation. For athletic fields, the sod is lifted and grub monitoring is conducted per s/ft.
- 2) As pesticide materials are used or expire, more environmentally preferable materials are purchased for use. All personnel are educated in the most sustainable application techniques available, such as no spraying when pollinators are present and drift reduction.
- 3) Timing and efficiency are important in the application of pesticides. An example is the use of a properly timed pre-emergent in landscape beds and on athletic fields, and where appropriate, covered by mulch. This cuts down on weeds and the extra weeding time. In all landscapes, hand-weeding is the preferred method to use when appropriate.
- 4) The least environmentally toxic pesticide is used for any specific situation: for example using a bait trap rather than a spray for certain kinds of pests. Many times organic means are applied, such as water force for the removal of aphids and growing specific flowering plants to attract beneficial insects. Athletic fields are monitored for grub activity/fungal diseases on a weekly basis throughout the year to ensure early detection/action to decrease the amount of turf loss.

SUSTAINABLE LANDSCAPE MANAGEMENT PLAN:

- 1) **Plant Stewardship:** The landscape of Dickinson College is in a transitional stage as we move from more traditional landscapes to native ones. However, it is worth noting that our traditional landscapes of campus “greens” shaded by tall, old trees highlight an exceptionally beautiful urban campus that reflects the pride of 240 years in existence.
 - a. An inventory of all the trees on campus is being created by the college arborist, not only to record species and maintain health/maintenance records, but also with the goal of possibly becoming an arboretum in the future.
 - b. Sustainable turf management includes keeping clippings on lawns to promote healthier turf and soil and mowing to a height deemed healthy for turf. “Weeds” are not considered a bad thing and are kept in check by the judicious use of fertilizers and pesticides. Mowing frequency depends on the time of year and is timed to take only about one third of the leaf blade with each cut, thus reducing stress on the grass and

the chance of disease. Mower blades are checked on a weekly basis and sharpened frequently to ensure a clean cut, again to reduce stress.

- c. Athletic fields: Turf is monitored to keep thatch at $\frac{1}{4}$ to $\frac{1}{2}$ inches to ensure water/nutrient infiltration.
 - d. Athletic fields: Due to the stress of compaction, aerification is done on an annual basis to obtain proper air and water infiltration.
 - e. Battery powered blowers are used in the landscape to cut down on fuel emissions. Larger mowers are fuel-injected and/or diesel, which use less fuel than regular mowers and have the added benefit of more power.
 - f. Most of the fertilizing is done in the fall using a slow-release fertilizer to cut down on excess nutrients leaking into ground water and to prepare plants for winter and a healthy spring. Properly timed fertilization also helps with the amount of mowing done in spring and summer. Athletic fields are monitored for turf health, and a nitrogen-based fertilizer is put down up to three times a year if needed to keep turf healthy for the rigors of constant use.
 - g. Athletic fields: Using seed cultivars that are disease resistant cuts down on fungicide use.
- 2) **Soil Stewardship:** Soil tests are taken of areas that require new plantings or rejuvenation planting so that “right plant, right place” philosophy can be adhered to when combined with other growing needs. Rather than trying to fit the soil to the plant, fitting a plant to the existing soil is preferred.
- a. For athletic fields, soil tests are performed every two years to ensure optimum nutrient levels for healthy turf.
 - b. Compost and mulch are used throughout campus, not only for aesthetics, but to promote a healthy soil by attracting microorganisms and worms that in turn attract birds and other wildlife.
 - c. Grass clippings are left on all turf areas to return organic matter to soil.
 - d. Insecticide use on turf areas of main campus have been eliminated and are only used sparingly on athletic fields.
- 3) **Use of environmentally preferable materials:** The College is committed to the LEED program in its buildings and adheres to similar sustainability values in its landscape. Plants and seed from local nurseries that maintain a PA eco-type are used throughout the landscape when possible, and a variety of permeable surface materials are used to control water run-off. A current focus on all new landscapes is the use of native plants where appropriate.
- 4) **Hydrology and water use:**
- a. Rain gardens filled with native plants have been established around campus to help control rainwater run-off into the Chesapeake Bay watershed.
 - b. Curb-side planted retention basins have been installed in the new landscape around the Kline Center to control and direct storm water into a submerged holding tank for ground water control.
 - c. The irrigation systems at the athletic fields are checked on a weekly basis to ensure proper operation and to maintain optimum moisture levels for turf. Systems are manually controlled to prevent water use at night or on rainy/cloudy days.

5) **Materials management and waste minimization:** Composting is done on a large scale at the Dickinson College organic farm, at the college debris lot, and to a smaller degree at the on-campus community garden, the children's center, dorms, and other areas on campus. The college maintains a debris lot where leaves, plant debris, and woodchips are kept and turned into mulch for use in areas around campus, especially as top-dressing for turf and compost for flower beds.

6) **Snow and ice management:**

For snow and ice removal, mechanical means such as plows and shovels are used first, followed by the monitoring of sunlight and temperature to melt what is left on sidewalks and parking lots. The use of ice-melting compounds are used only when necessary. Parking lot mixture contains grit to cut down on the amount of salt applied.