

**Rhode Island Higher Education Turf
Maintenance and Landscaping Sustainability
Certification**

Self-Certification Workbook

Rhode Island Higher Education Turf
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Certification



July 2014

A Message from the Director

The Rhode Island Higher Education Turf Maintenance and Landscaping Sustainability Certification Program is an exciting and new partnership with the Association of Physical Plant Administrators (APPA). APPA is the largest international association of educational institutions and their facilities and physical plant departments. APPA represents the majority of colleges and universities in the United States.

This work book provides a menu of Best Management Practices (BMPs) and Pollution Prevention (P2) techniques focusing mainly on turf management and landscaping activities while addressing facilities management, energy conservation, recycling, and wildlife habitat improvements. Participation in the program will significantly reduce an educational institution's environmental impact and will improve environmental quality.

The Department of Environmental Management encourages your participation and is ready to provide assistance with your efforts to improve our State's environment.

***Janet Coit
Director***



Rhode Island Higher Education Turf Maintenance and Landscaping Sustainability Certification



BECOME A
**Rhode Island Higher Education
Turf Maintenance and
Landscaping Sustainability
Certification**



PROGRAM PARTICIPATING FACILITY AND RECEIVE THESE BENEFITS

Become a

Rhode Island Higher Education Turf Maintenance and Landscaping

Certification Program participating facility and receive these **benefits**:

- A listing on a brochure available at the Rhode Island Visitor's Centers.
- Free on-going technical assistance from Rhode Island Department of Environmental Management on how to continue to reduce environmental impact while saving money.
- Expedited permit review status for improvement projects.

**Partners in the Rhode Island Higher
and Landscaping Sustainability**



**Education Turf Maintenance
Certification Program**

How the program works:

1. Complete this Sustainability Workbook by checking off all of the initiatives that your facility is currently undertaking. If you need assistance filling out the workbook, please call DEM's Office of Customer and Technical Assistance at (401) 222-4700 ext. 7284. Please see contact information below.

Please understand that it is not necessary to complete all of the items in the workbook to become a certified institution; the workbook is a comprehensive list of the many different ways to generate points. Employing all of the initiatives in this workbook is

unrealistic, so please use the ones that you have not yet implemented as recommendations.

2. Calculate your score by adding up all of the checked boxes.
3. **Send completed workbook to the DEM's Office of Customer and Technical Assistance.**

**Rhode Island Departmental of Environmental Management
Office of Customer and Technical Assistance
235 Promenade Street
Providence, RI 02908-5767**

Telephone: (401) 222-6822
Contact: Ann Battersby Ext. 7284

4. Your workbook will be reviewed and receive a final score by DEM's Office of Customer and Technical Assistance.

If your business scores **330 points**, your business qualifies for an automatic certification from the state for two years. In two years, you will need to increase the point total to **380 to** be eligible for a re-certification.

5. Upon final scoring of the workbook, you will be sent an official letter detailing your point total and possible low cost recommendations. The official notice of certification will allow you to display the Green Golf Course logo on a banner, flag, sticker or your letterhead and marketing materials.
6. The DEM Office of Customer and Technical Assistance will randomly select businesses for verification appointments throughout the year. These visits will be scheduled and not "unannounced".

Higher Ed Sustainability Self-Certification Workbook

1550 total available points
Only 350 points necessary for automatic certification

Business name: _____
Facility name (if different): _____
Address: _____

Contact person: _____
Telephone number: _____
E-mail Address _____
Facility Telephone Number (for Certified Facilities List): _____

SECTION 1: ADMINISTRATIVE

- ✓ **Adopt and display an environmental policy.** 15 Points
- *Attach a copy of the written environmental policy.*
 - *Describe where it is displayed to employees and customers:*
-
- ✓ **Property shall use printing and writing papers (e.g., letterhead, stationary, copy paper, envelopes, invoices, business forms, etc.) that are Forest Stewardship Certified (FSC) paper.** 10 Points
- *Attach description from packaging and brand*
- ✓ **Machines default settings are programmed to photocopy and print on both sides automatically, with single sided print being optional.** 3 Points
- ✓ **Ink jet cartridges, computer disks are recycled.** 2 Points
- *Method:* _____
- ✓ **Laser toner cartridges are recycled** 1 Point
- NOTE:** Businesses are required by RIDEM regulation to recycle this commodity

Section 1: Administrative Category point total: _____

SECTION 2: WILDLIFE HABITAT FOR ON-CAMPUS AND OFF-CAMPUS

The campuses of institutions of higher education and the properties owned by these institutions can provide a multitude of habitat opportunities for wildlife. Enhancing existing conditions and creating new habitats can provide a safe haven for many species and enhance the environmental quality of these areas. It can also serve as a learning tool for college courses.

- ✓ Conduct an inventory of the existing resident wildlife and habitats on all campuses and properties owned by the educational institution. 15 Points

 - ✓ Current percentage of land devoted to providing wildlife habitat: 2 Points
 - 5%-10% 4 Points
 - 11%-15% 10 Points
 - 16%-20% 15 Points
 - > 20% 20 Points

 - ✓ Develop a plan to improve and expand wildlife habitat. Protect existing native habitats and expand or enhance existing natural amenities. 5 Points

 - ✓ Establish wildlife corridors to connect areas of habitat. Corridors enable animals to travel and forage for food and should be at least 30 yards wide and located away from roads, trails and paths. 15 Points

 - ✓ Naturalize (with native species) landscaped areas that are currently maintained with mowed grass or that are visually unappealing. 10 Points

 - ✓ Increase height of vegetation (8 inches or higher) around existing ponds and streams and plant trees and shrubs where possible to provide areas of wildlife habitat. 10 Points

 - ✓ Install vegetative buffers along the perimeter of landscaped or maintained areas that are adjacent to wildlife habitat to provide a habitat transition zone (Ecotone) for wildlife. Vegetative buffers protect wildlife from human disturbance. Buffers can be established by planting evergreen trees (i.e. Eastern White Pine or White Spruce) and/or evergreen shrubs. 15 Points

 - ✓ Other Initiatives (Points negotiable)
-
-

✓ Conduct an inventory of the resident wildlife and habitats on campus or on off- campus properties after implementing habitat improvement plan. 5 Points

✓ Develop and implement a “Wildlife Habitat Improvement Plan” (if need guidance please contact Office of Customer and Technical Assistance). 25 points

✓ OPTIONAL: Calculate new percentage of on- campus or off – campus areas providing wildlife habitat after implementation of habitat plan:

- 5%-10% 4 Points
- 11%-15% 8 Points
- 16%-20% 15 Points
- > 20% 25 Points

Net area of new wildlife habitat developed: _____ Acres

Section 2: Total Points: _____

SECTION 3: WASTE MANAGEMENT

Note: To get points in the recycling category, it is mandatory to use RIDEM’s on-line reporting tool, the Rhode Island Annual Recycling Report:

<http://www.ri.gov/DEM/recycling> (Note: Need ID Number & PIN to login - Click “Need login information?” on the report’s front page, for assistance to obtain)

Pounds of waste generated in 20____ pounds; _____ 10 points

Pounds of waste generated in 20____pounds: _____ 10 points
(**pounds of waste generated are available from your waste hauler if you do not know the amount).

Pounds of recycled material generated in 20____ _____ 10 points

Pounds of recycled material generated in 20____ _____ 10Points

Pounds of leaf and yard waste generated in 20____ _____ 10 points

Pounds of leaf and yard waste generated in 20____ 10 points

NOTE: Recycling is mandatory, in accordance with DEM Rules & Regulations for Reduction & Recycling of Commercial & Non-Municipal Residential Solid Waste (Commercial Recycling Regulations)

✓ **Corrugated cardboard is recycled**

Businesses are required by RIDEM regulation to recycle this commodity

1 Point

Describe recycling procedures. Who performs it, how often, waste types segregated:

Paper: _____

Cardboard: _____

Glass containers: _____

Metal containers: _____

Plastic containers: _____

Wood containers: _____

Batteries: _____

Light Bulbs (incandescent, CFL, LED): _____

List recycling services providers used, and what commodities they are handling

Recycle Food Waste through on-site composting or waste hauler.

Describe food waste recycling procedures: _____

20 Points

Outdoor Sports Fields (Greens) Recycling

✓ **Install recycling containers for bottles and cans at green spaces and sports facilities and fields.**

20 Points

Implement BMPs for Hazardous and Non Hazardous Waste Management

Dispose of all non-hazardous wastes and litter in trash cans, dumpsters or other appropriate and properly maintained receptacles.

2 Points

• **Store, recycle or dispose of waste products such as used motor oil, electric batteries and unused solvents properly according to the law and available community disposal techniques.**

2 Points

• **Ensure that solid waste dumpsters have plugs intact and covers closed and that spillage won't drain to surface waters, drinking water wells or storm drains.**

2 Points

If you need further assistance complying with this section, please contact the DEM Office of Customer and Technical Assistance to assist you.

SECTION 4: CHEMICAL USE REDUCTION & SAFETY

✓ Eliminate or reduce chemicals in the maintained gardens. Use botanical controls such as organic insecticides, controlled release fertilizers and biocides and/or integrated pest management (IPM) techniques to treat fungus and insect problems on all landscaped areas (including planting beds) on both on-campus and off-campus. Utilize native species for plantings to reduce water use and chemical fertilizers and herbicides in these areas. 20 Points

- Describe which brands and products are currently being used.

Pesticide use

Do employees responsible for pesticide applications hold a valid commercial applicator’s license or commercial applicator’s certificate as per the Rhode Island Rules and Regulations Relating to Pesticides (Pesticide Regulations). 25 points

- ✓ Provide License Number: _____
- ✓ Do those responsible for application of pesticides maintain the necessary record keeping as required by the “Pesticide Regulations” 25 points
- ✓ Please list the types (name), frequency, and consistency (granular, liquid) of pesticides used on the property. Attach an additional sheet if necessary. 75 points

Purchases of paint products with volatile organic compounds (contribute to ground level ozone); off-gassing potential shall be evaluated and lower VOC products purchased where available. (100% of all paint purchases = 10 points)

The VOC content shall not exceed:

Interior Flat paint: 50 grams per liter (g/L)

2 points

Exterior Flat paint: 100 grams per liter (g/L)

2 points

- *Describe brand of paint and VOC content and percent purchased:*

- ✓ **Minimize stockpiling and storage of excess paint and paint products, by periodically reviewing excess paint and paint products in storage, reusing or donating usable paint, and recycling/disposing of this material that is outdated, not reusable, or not needed.**

5 points

Implement BMPs for Facilities Management Operations

- **Store and maintain vehicles and equipment on covered, sealed impervious areas.** 2 Points
- **Locate fueling facilities on roofed and concrete paved (not asphalt) and areas equipped with spill containment and recovery facilities.** 2 Points
- **Locate fueling facilities away from surface waters and drinking water wells.** 2 Points
- **Eliminate floor drains in fueling and maintenance facilities unless they drain to storage tanks.** 2 Points
- **Equipment washing areas must drain to an oil/water separator and from there to a sanitary sewer or holding tank.** 2 Points
- **Keep containment booms and absorbent materials on hand for the containment and remediation of spills.** 2 Points
- **Familiarize employees with the locations of all underground structures, such as storage tanks, septic fields and storm drains. (Note: These structures should be shown on the site plan as described in Section 7, below.)** 2 Points
- **Provide secondary containment for all hazardous materials, including storage areas for liquid fertilizers.** 2 Points
- **Store all hazardous materials in sealed, locked areas or buildings. Identify locations for these materials on the site plan and register all materials with the local fire marshal.** 2 Points
- **Locate pesticide, fertilizer and hazardous material storage, mixing and loading areas at least 200 feet away from surface water resources, high ground water table areas and drinking water wells.** 2 Points
- **Locate pesticide, fertilizer and hazardous material storage, mixing and loading areas in separate buildings/areas so that they cannot be confused with one another.** 2 Points

- Provide impervious surfaces in chemical mixing areas. 2 Points
- Dispose of hazardous materials in a manner consistent with the label and state and federal regulations. 2 Points
- Buy fertilizers and pesticides in limited quantities and do not store large volumes of chemicals on site. 2 Points
- Minimize the use of underground fuel storage and eliminate chemical storage tanks in drinking water and/or ground water supply areas. 2 Points
- Familiarize and regularly train employees regarding hazardous waste management policies and chemical use and safety. 2 Points

Section 4 Chemical Use Reduction & Safety Category point total: _____

SECTION 5: WATER CONSERVATION

Examine opportunities to reduce the number of acres watered and the quantity of water used for irrigation.

✓ Water only high priority sports greens, high priority landscaped areas, and high priority planting beds (i.e. areas at entrances) 15 Points

✓ Currently employ a computerized water irrigation system that utilizes evapotranspiration rates (ET) and other daily weather data to set irrigation rates. 15 Points

✓ Current acreage of sports greens irrigated: _____ 10 Points

 ✓ Current acreage of landscaped beds irrigated: _____

 ✓ Current acreage of campus turf (turf includes all maintained turf areas) irrigated _____

✓ Current acre-feet of water per irrigated turf and landscaped beds annually: _____ 6 Points

✓ Develop a plan to reduce irrigated acreage and/or quantity of water per irrigated acre. (**see page 12 to document reductions after implemented) 20 Points

Implementation of any of the following BMPs:

 ✓ Determine irrigation rates based on Evapotranspiration rates, rainfall, soil conditions, and Distribution Uniformity. 3 Points

Specific BMPs for leak detection and system layout

- √ Perform leak detection on a regular basis several times per year, including in the spring at the start of the irrigation season and at the end of a season to ensure the proper closure of the system. 3 Points
- √ Install water meters in critical locations throughout the irrigation system. For example, metering should be done at the original source(s) (wells, streams) and between any storage ponds and the distribution system. 3 Points
- √ Use isolation valves before all main lines and major laterals to be able to quickly shut off leaking areas before turf is damaged and water is lost. 3 Points
- √ Use an onsite weather station combined with an automated sprinkler system governed by atmospheric conditions. The computer system should be easily programmed to accommodate expected weather conditions and expected turf water requirements. 3 Points
- √ Use long and medium range forecasts to schedule irrigation to reduce the risk of runoff and leaching during large rainfall events. 15 Points
- √ Use a computerized irrigation management system equipped with flow management to increase irrigation efficiency. 3 Points
- √ Rain shutoff switches should be installed on all new and existing irrigation systems to avoid over-watering following significant rainfall. 3 Points

Turf

- √ Maintain existing vegetation, such as forest or grassland, that is consistent with design objectives. 3 Points
- √ Select and use turf grass varieties that require less irrigation, such as turf type tall fescue, and maintain at least 0.25 inch height cut on all greens or alter height of cutting to adjust to seasonal conditions and stress minimization. 10 Points
- √ Mulch turf clippings or compost 3 Points
- √ Designate areas that can be naturalized for lower maintenance, thus less water use. 3 Points
- √ Provide adequate and balanced levels of nutrients to the turf based on soil samples results. Avoid excessive amounts of nitrogen, and apply nutrients based upon turf species and cultivar nutrient requirements, level of use and soil type. 10 Points
- √ Use soil cultivation techniques such as spiking, slicing and core aerification to improve water infiltration and minimize runoff during irrigation or rainfall events. 3 Points

- √ Use environmentally safe wetting agents to improve water infiltration. 3 Points
 - √ To reduce evaporation losses, irrigate in the early morning or evening hours when evaporation and winds are at their lowest. 3 Points
 - √ Vary the irrigation amount and rates in accordance with different soil types, degree of slope and slope aspect, drainage patterns and microclimates. 3 Points
 - √ Observe runoff producing zones under typical winter/spring storms (e.g. nor'easters) and summer thunderstorms. Avoid over irrigation and use precautions in fertilizer/pesticide applications in these runoff zones, especially during early spring and late fall. 3 Points
 - √ Observe and map areas that have different water use patterns based on turf response to dry periods. Use the maps to plan and operate the irrigation systems. 3 Points
- Choose sprinkler heads that do not exceed the lowest infiltration rate of the specific soil. 3 Points

Landscaped areas (beds, gardens)

- √ Use drip irrigation or low flow heads in landscape areas to apply water only to the plants that need it 3 Points
- √ Use mulches and ground covers in shrub and flowerbeds to reduce water evaporation losses. 3 Points
- √ Consider use of polymers (wetting agents) as a means of increasing water retention and reducing water loss to evaporation. 3 Points
- √ Use xeriscape landscaping or native drought tolerant plants where feasible around buildings, parking areas or other appropriate places. Gravel pathways or borders that permit infiltration but have low evaporation potential are one example of xeriscape landscaping. 3 Points
- √ Retain existing vegetation when possible and plant native vegetation on new and existing . 3 Points

Specific BMPs for Water Conservation

Reduce or eliminate irrigation rates in secondary low use areas (i.e. low priority areas within the landscape that are not feature areas such as an entrance or heavily used quadrangles).

- √ Develop a drought emergency plan to balance the most critical sports greens water demands during times of water use restrictions. 3 Points

- ✓ Use hand watering when feasible in place of activating the irrigation system. 3 Points
- ✓ Use soil sensors to regulate irrigation/watering. 3 Points
- ✓ Used recycled water on the campus landscapings. (Note: May require a specific permit from the DEM, contact the Office of Customer and Technical Assistance.) This can be accomplished by the use of rain barrels to collect roof run-off or cisterns. 20 Points

Optional : If Implemented an irrigation reduction plan within past two years, please fill out the following information.

- ✓ Acreage of turf irrigated before developing and implementing reduction plan: _____ 3 Points
- ✓ Acreage of turf irrigated after developing and implementing reduction plan: _____ 3 Points
- ✓ Net reduction of acreage of turfgrass irrigated: _____ 3 Points
- ✓ Net reduction of acre-feet of water per irrigated turfgrass acre annually: _____ 3 Points

Sections 5 : Water Conservation Category point total: _____

SECTION 6: WATER QUALITY MANAGEMENT

- ✓ Develop an existing conditions survey and site plan that includes: 50 Points
 - drought emergency plan to balance the most critical water demands during times of water use restrictions;
 - existing contours, direction of drainage, surface water resources, wetland boundaries, floodplains and the type and function of all affected wetland areas (e.g. vernal pools, intermittent streams, marshes, etc.), located both on and neighboring offsite;
 - soil maps with identification of steep slopes and erodible soils;
 - location of existing or potential drinking water sources, including reservoir watersheds, public wells and private well areas;"
 - existing land cover (e.g. forest, meadow, old field, etc.);

Natural Diversity Data Maps and a flora and fauna inventory

- location of all existing and proposed buildings, roads, parking lots, storm drainage, water supply ponds, sewers, septic systems, stream crossings, and other permanent structures and their proximity to surface waters and wetlands;
- location of all facilities, structures, treatments and measures used for soil erosion and
- sedimentation control and long-term stormwater management;
- location of existing and proposed site vegetation and the extent of proposed or existing buffer areas;
- location of pesticide/fertilizer storage and mix/load sites and fuel and chemical storage areas in relation to water resources;

50 Points

Identification of areas of active erosion (e.g. stream banks, exposed slopes, drainage channels);

- identification of upstream and downstream land uses;
- ground water locations in relation to the surface of the course, particularly in any areas that have a seasonally high water table (<24") or shallow bedrock (<4');
- location of saturated source areas that become seasonal runoff producing zones (these areas can be determined by field observations after high rainfalls in both early spring and in late summer and will vary seasonally within the landscape due to the variation in water tables and amount of recent evapotranspiration).

50 Points

Fertilizer Use

Current total use of Nitrogen (N) (lbs): _____

25 Points

Current total use of Phosphate (P₂O₅): _____

Current total use of Potash (K₂O): _____

✓ Conduct soil testing in fertilized areas. Based on test results, determine phosphorus and potassium fertilizer needs.

15 Points

✓ If have developed and implemented a **Nutrient Reduction Plan** that incorporates university scientist guidelines to determine minimum fertilizer requirements in the past two years, record reductions below.

35 Points

Use of Nitrogen (N) (lbs) after plan implementation: _____

Use of Phosphate (P₂O₅) after plan implementation: _____

Use of Potash (K₂O) after plan implementation: _____

Net reduction in use of Nitrogen (N) (lbs); _____

Net reduction in use of Phosphate (P_2O_5): _____

Net Reduction in use of Potash (K_2O): _____

Implementation for any of the following BMPs for vegetative buffers

Buffers - One of the best ways to protect surface water quality is to develop, enhance, restore and protect freshwater vegetated buffers and coastal vegetated buffers along the banks of wetlands, watercourses and other water bodies and along the edges of surrounding, undeveloped upland areas. Buffers function as sediment filters that catch and trap sediment, as well as pollutants attached to sediment, from runoff before it can reach surface waters. Buffers slow runoff and increase infiltration and ground water recharge.

- **Protect and maintain existing woody vegetation during the design and construction of new buildings.** 2 Points
- **Plant grasses, other herbaceous vegetation and woody vegetation in buffer strips where existing vegetation is lacking. Plants included in a riparian buffer zone restoration or an overall habitat enhancement plan should be native and non-invasive.** 2 Points
- **Locate new vegetated buffers between water bodies, wetlands and wellheads and any potential pollution sources such as fertilized areas or runoff producing areas, such as impervious surfaces and seasonally saturated soil areas.** 2 Points
- **Design buffer widths to vary in accordance with landscape position and amount of runoff and potential pollutants entering the buffer at a specific location. Minimum buffer widths will vary with the intended buffer function and the specific site conditions including hydrogeology, slope, vegetation, soil type, presence of wetlands and the type of nutrient or pollutant to be removed.** 2 Points
- **Where a desired buffer width cannot be met due to landscaping restriction, prevent runoff from entering the water body at that location by diverting it to adjacent areas where adequately wide buffers can be developed and maintained. Methods of diversion can include shallow swales, low berms, and grading of landscape areas that slope away from stream banks.** 2 Points
- **Maintain wider temporary buffers for sediment control during construction periods.** 2 Points
- **Maintain appropriate vegetation on steep or highly erodible stream banks at all times to prevent stream bank erosion. Dense woody vegetation such as willow shrubs and saplings (*Salix* sp.) is often best at resisting and reducing high stream velocities that can easily erode stream banks. Mature hardwood trees may impede development of a dense ground cover due to shading. This makes mature trees less effective than dense** 2 Points

shrubs in preventing stream bank erosion.

- Vary the width, height and type of vegetation to meet the specific functions of the buffer and growing conditions at the specific location. Use a combination of native trees, shrubs and grasses along or around the wetland, watercourse or water body to meet the objectives for pollutant control and to provide a variety of habitats at each location. 2 Points

Select some woody vegetation to provide shade, especially along the south side of wide sections of a watercourse or water body, to provide shading, cool water temperatures and to maintain suitable dissolved oxygen levels. 2 Points

- Mow grass buffers infrequently, (e.g. 1 or 2 times per year), to preserve the functions of the buffer while controlling woody vegetation. Remove clippings after mowing grass buffer zones to help reduce the cycling of nutrients back into the buffer zone and ultimately to a water resource. 2 Points
- Do not dispose of grass clippings or prunings in the buffer areas. 2 Points
- Maintain buffer vegetation by regular monitoring of the health of the plants, by disease and pest management using an integrated pest management plan and by appropriate pruning and cutting of woody vegetation when necessary. 2 Points
- Protect woody vegetation from root damage caused by heavy equipment during construction. 2 Points
- Prevent placement of fill within the drip line of woody vegetation (where the water runs off the tree canopy). 2 Points
- Control foot and cart traffic in buffer areas through signs and fencing. 2 Points
- Rotate public access points to buffers as needed to protect or restore vegetative cover. 2 Points
- Maintain a pesticide-free zone adjacent to buffer areas and around drinking supply wells. 2 Points

Water Quality Treatment Practices (Examples found within the Rhode Island Stormwater Design Standards and Installation Manual) are required by law to implement under certain conditions. They can also be implemented voluntarily. Contact the Office of Customer and Technical Assistance to assure that there are no permits required for the work.

<http://www.dem.ri.gov/pubs/regs/regs/water/swmanual.pdf>

- Install *Wet Vegetated Treatment Systems* (WVTS). A WVTS is a BMP that promotes settling of stormwater while at the same time treating the stormwater through biological activity from plants and soil. The treatment is conducted by the uptake of plants and the soil fauna. 2 Points

- Increase *Infiltration* for stormwater where feasible. Infiltration areas temporarily store stormwater before allowing it to infiltrate into soil. Such practices will include infiltration trenches, permeable pavement, dry wells, sub surface chambers, infiltration basins. 2 Points

- Install *Filtering Systems (FS)* for Water Quality. Filtering Systems capture and temporarily store stormwater allowing it to return to a conveyance system or to partially infiltrate the soil. The “filtering” that is done is achieved by plants and soil within such FS as Bioretention, Organic Filters, Tree Filters, and Sand Filters. 2 Points

- Install *Green Roofs*. Green Roofs are areas on roofs that are vegetated to promote storage and infiltration of stormwater that would otherwise run off the roof. Green roofs can be extensive, not designed for public access, or intensive, designed for public access. 2 Points

- Install *Open Channels*. An Open Channel is a channel or a depression designed to promote filtration and detain stormwater into an underlying soil matrix. These channels may also intercept groundwater for treatment. Rain gardens are an example of Open Channels. Please follow rain garden installation guidelines found at: 2 Points
<http://www.uri.edu/ce/healthylandscapes/raingarden.htm>

More Information on implementing and incorporating water quality treatment practices at your institution can be found on EPA’s “Soak up the Rain” website : <http://www.epa.gov/region1/soakuptherain/>

Section 7: Water Quality Management Category point total: _____

SECTION 7: ENVIRONMENTAL EDUCATION

- ✓ **Maintain environmental information (display, brochure) for students, staff and faculty with current information on what your school is doing to reduce environmental impact. Can include tips, and solicit suggestions from the campus community and neighborhoods.**

On the web

- *Describe display:* 20 Points

Section 9: Environmental Education Category point total: _____

SECTION 8 CAMPUS KITCHENS & DINING HALLS

✓ Does your institution take part in the Rhode Island DEM “Hospitality Program” for Restaurants and Dining Halls Green Certification. Details about this certification program can be found at the following link:

30

Points

<http://www.dem.ri.gov/programs/benviron/assist/grncert/pdf/restwork.pdf>

SECTION 9: CAMPUS REST ROOMS

✓ Use refillable amenity dispensers rather than individual containers for soap, lotion, etc. where possible.

5

Points

✓ Use biodegradable soap. Use no products tested on animals.

5

Points

- Name and brand of products:

SECTION 10 WATER CONSERVATION – REST ROOMS

Gallons of water used in 20 _____

10Points

Gallons of water used in 20 _____

10 Points

(NOTE: 1 cubic foot = 7.48 gallons)

✓ Use the following water conserving fixtures or retrofits:

2.2 gpm faucets and aerators;
1.6 gpf toilets.

10 Points

Any existing faucets, and aerators that exceed these flow rates shall be on a schedule for replacement within two years. Toilets shall be replaced in conjunction with major room renovations. (Higher flow toilets may be exempt from the flow rate requirement if the plumbing infrastructure will not adequately function with lower flow rates).

All restrooms conform with this and include low flow urinals or dual-

flush toilets

Number of low flow urinals or dual flush toilets: _____

All restrooms should conform with this.

3 Points

✓ Automatic shut off faucets installed.

2 Points

Sections 12 & 13: Rest Rooms, Water Conservation Category point total: _____

SECTION 11: Energy

IMPORTANT: Free energy audits are available to businesses through National Grid. The audit will include a report of recommended energy efficiency improvements, as well as information about available incentives. For more information, call National Grid at 1-800-332-3333, or visit <http://www.nationalgridus.com/narragansett/business/energyeff/energyeff.asp>.

✓ Conduct an energy audit to determine existing energy uses.

15 Points

Annual kilowatt hours of electricity used at existing conditions:

Annual cubic feet of natural gas used at existing conditions:

Annual gallons of heating oil used at existing conditions:

Annual gallons of gasoline/diesel used at existing conditions:

Implementation of any of the following BMPs for any reduction. Calculate net reductions after implementation at bottom of section:

✓ Installation of LED or electroluminescent exit signs.

3 Points

✓ Installation of on/off timers and/or sensors for lighting and HVAC in low traffic and low occupancy areas (e.g., corridors, meeting rooms, storage rooms, equipment rooms, parking lots).

3 Points

✓ Installation of high efficiency air conditioning units, SEER of 13 or greater or EER of 11 or greater.

3 Points

- ✓ Substitute natural light for electric light or use of daytime dimming sensors. 3 Points

- ✓ Indoor lighting shall be energy-efficient (compact fluorescent bulbs to T-8 fluorescent) OR on a schedule for replacement with energy-efficient lighting. The first lights replaced shall include lights typically on for 24 hours (e.g., hallways, exit signs, lobby lights, etc.), followed by lights typically on for 8+ hours (e.g., restrooms, staff offices, meeting rooms, etc.). All indoor lights not currently energy-efficient shall be part of a 5-year replacement schedule. Lighting fixtures that are clearly historic in nature or specialty light fixtures (e.g., display or accent lighting) may be exempt from this requirement if compatible options are not available (free energy audits and incentives are available from National Grid). 10 Points

90% to 100% of the property	
approx # of CFL's _____	Avg. CFL's per room _____
50% to 90% of property	
approx # of CFL's _____	Avg. CFL's per room _____
25% to 50 % of the property	
approx # of CFL's _____	Avg. CFL's per room _____

- ✓ LED or electroluminescent exit signs. 5 Points
 approx # _____

- ✓ Programmable on/off timers and/or sensors shall be used for lighting and HVAC in low traffic and low occupancy areas (e.g., back of the restaurant, corridors, meeting rooms, storage rooms, equipment rooms, parking lots) 5 Points
Describe types of timers or sensors used and where:

- ✓ Install high efficiency “energy star” appliances. 5 Points
Describe types of products used, and where

- ✓ Low E or thermapane windows. 10 Points
 75 - 100% of property 5 Points
 50 - 75% of property

- ✓ Install high efficiency air conditioning units. SEER of 13 or greater or EER of 11 or greater. 10 Points

- ✓ Vending Misers on vending machines. 10 Points
 approx # _____

- ✓ **Natural light substituting for electrical light, or use of the daytime dimming sensor.** **5 Points**
- ✓ **Hybrid vehicle for business.** **10 Points**
- ✓ **Solar hot water system.** **50 Points**
- ✓ **Use solar panels or wind turbines to generate electricity.** **20-75 Points**
- ✓ **Purchase clean electricity, get information for providers through National Grid's "GreenUp Providers" page at https://www.nationalgridus.com/narragansett/business/energychoice/4_greenup_provider.asp**
 - Entire business** **75 Points**
 - Partial facility** **25-50 Points**
 - Points negotiable**

SECTION 12: Energy Total Points

SECTION 13: OTHER INITIATIVES

(points negotiable during verification appointment)

- ✓ **Create an environmental team/ task force and meet at least quarterly.** **Points negotiable**
Attach meeting dates and attendees for past 3 meetings.
- ✓ **New furnaces.** **Points negotiable** **Year:**
- ✓ **Grow herbs and flowers for use in dining halls.** **Points negotiable**
- ✓ **Emphasize local, Rhode Island-made, and environmental education products.** **Points negotiable**
- ✓ **Other environmental certifications and awards.** **Points Negotiable**
(such as the Green Seal Environmental Standard for Lodging Properties)

Participate in sustainable campus gardens through community and student engagement.

Support sustainable urban gardens by providing shredded leaves.

Provide labor and supplies to local parks for annual clean-up activities. This includes the installation of new playgrounds, parks and sports fields.

Contribute to city/town by enhancing streetscapes with new planting and maintenance

of current street trees consistent with City forester guidelines.

✓ **Other activities to reduce environmental impact.**

Points negotiable

Section 13: Other Initiatives Category point total: _____

Add up ALL points, and enter the total

_____ **Total Points**

- **330 points qualifies for an automatic certification.**
- **If you scored your business at less than 330 points, but are confident that you can obtain the remainder, or if you want free technical assistance and low cost recommendations to help you obtain the remainder, apply for the provisional certification, which allows your business to receive the same benefits as the automatic certification while you plan and work towards the accumulation of 300 points.**

Thank you for your participation!

REFERENCES

Best Management Practices for Golf Course Water Use, Connecticut Department of Environmental Protection, July 2006

Rhode Island Hospitality Green Certification Self-Certification Workbook, Green Restaurants, Rhode Island Department of Environmental Management, March 2008

Rhode Island Hospitality Green Certification Self-Certification Workbook, Green Golf Courses, Rhode Island Department of Environmental Management, March 2008

Rhode Island Stormwater Design and Installation Standards Manual. Rhode Island Department of Environmental Management. 2010

Wetland Best Management Practices Manual. Rhode Island Department of Environmental Management. 2010.