Rhode Island Golf Course Green Certification

Self-Certification Workbook

Rhode Island Golf Course Green Certification Program

Rhode Island Golf Course Superinendents Association
Rhode Island Department of Environmental Management
Rhode Island Coastal Resources Management Council

May 2010

A Message from the Director

The Rhode Island Green Golf Course Certification Program is an exciting and new partnership with our state Golf Course Superintendent's Association. This work book provides a menu of Best Management Practices (BMPs) covering a wide range of golf course activities including efficient turf management , water conservation , energy conservation, recycling, and habitat improvements. Participation in the program will significantly reduce a facility's environmental impact and greatly improve the player's experience on the golf course.

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

W. Michael Sullivan PhD
Director

A Message from the CRMC Chairman

The Coastal Resources Management Council is pleased to be part of this new Rhode Island Green Golf Course Certification Program, especially in consideration of the many splendid golf course facilities located along our State's coastal shoreline. Participation by golf courses in this program and the implementation of the Best Management Practicies contained herein will help to improve our coastal environment, benefit the player's enjoyment of the golf course, and assist our regional tourist economy. The Golf Course Superintendent's Association is to be congratulated for their partnership in developing this Certification Program to improve their good stewardship of our natural resources and landscapes of their member golf courses.

Michael M. Tikoian
CRMC Chairman

A Message from the RIGCSA

It is with great pleasure that the Rhode Island Golf Course Superintendents are partnering with the States Department of Environmental Management and Coastal Resources Management Council on the Green Golf Course Certification initiative. Our mission has always been to advance the art and science of greenkeeping while collecting and disseminating practical knowledge of golf course management with the goal of more efficient, economical and environmentally sound golf courses. The development of this workbook provides a guideline for the entire golf facility; we encourage all managers, club officials, staff and golfers to work together in achieving certification. Golf courses provide a wonderful green space and recreational environment. By continuing with and enhancing best management practices we are excited to expand on our environmental stewardship for enjoyment at our facilities and surrounding areas.

John J. LeClair, Certified Golf Course Superintendent
President, Rhode Island Golf Course Superintendents Association

Rhode Island Golf Course Green Certification

BECOME A RHODE ISLAND GOLF COURSE GREEN CERTIFICATION PROGRAM PARTICIPATING FACILITY AND RECEIVE THESE BENEFITS

Become a Rhode Golf Course Green Certification Program participating facility and receive these **benefits**:

- Rhode Island Golf Course Green Certification award and decals to display at your property.
- Rhode Island Golf Course Green Certification logo to use for advertising (website, literature, decals, etc).
- A listing on the Rhode Island Golf Course Superintendents Association website, which identifies your business as Rhode Island certified as environmentally preferable, and on the DEM website at http://www.dem.ri.gov/programs/benviron/assist/grncert/index.htm.
- 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 golf course improvement projects.

Partners in the Rhode Island Golf Course Green Certification Program

How the program works:

1. Complete the Green Golf Course Self-Certification 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) 222-6822. Please see contact information below. Also, please visit the Golf Course Green Certification Program webpage at http://www.dem.ri.gov/programs/benviron/assist/grncert/index.htm for more information and resources.

   Please understand that it is not necessary to complete all of the items in the workbook to become a certified golf course; 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: Ronald Gagnon Ext. 7500

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

   If your business scores 300 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 350 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".

Golf Course Self-Certification Workbook

1400+ total available points
Only 300 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 contain a minimum of 30% post-consumer recycled content OR tree-free fiber content; coated paper shall contain a minimum of 10% post-consumer recycled content OR tree-free fiber content.** ☐ **3 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 AND HABITAT

Golf courses 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 golfing experience.

✓ **Conduct an inventory of the golf course resident wildlife and habitats.** ☐ **15 Points**

✓ **Current percentage of golf course providing wildlife habitat:**

5%-10%	☐ **2 Points**
11%-15%	☐ **4 Points**
16%-20%	☐ **10 Points**
> 20%	☐ **15 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 out-of-play areas that are currently maintained with mowed grass or that are visually unappealing.** ☐ **10 Points**

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

✓ **Construct or modify storage ponds with shallow margins that can be planted with native wetland vegetation, which is utilized by many wildlife species. Buffers of native herbaceous and shrub vegetation can also be planted around the perimeter of the storage ponds to enhance wildlife habitat.** ☐ **15 Points**

✓ **Other Initiatives (Points negotiable)**

_____

_____

_____

✓ **Conduct an inventory of the golf course resident wildlife and habitats after implementing habitat improvement plan.** ☐ **5 Points**

✓ **New percentage of golf course providing wildlife habitat:**

5%-10%	☐ **4 Points**
11%-15%	☐ **8 Points**
16%-20%	☐ **20 Points**
> 20%	☐ **30 Points**

Net area of new wildlife habitat developed: _____ Acres

Section 2: Wildlife and Habitat Category point total: _____

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 of waste generated in 20__ _____ ☐ **10 Points**

Pounds of recycled material generated in 20___ _____

Pounds of recycled material generated in 20___ _____ ☐ **10Points**

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** ☐ **1 Point**
Businesses are required by RIDEM regulation to recycle this commodity

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

Paper: _____

Cardboard:_____

Glass containers:_____

Metal containers: _____

Plastic containers: _____

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

_____

_____

Golf Course Recycling

✓ **Install containers for bottles and cans with waste disposal cans at tees and other golf course locations.** ☐ **10 Points**

Implement BMPs for Waste Management

- **Dispose of all non-hazardous wastes and litter in trash cans, dumpsters or other appropriate and properly maintained receptacles.** ☐ **2 Point**
- **Establish an inspection and maintenance schedule and reporting plan for on-site sewage treatment and septic systems in accordance with DEM regulations and requirements.** ☐ **2 Point**
- **Use septic systems for domestic (sewage) waste only. Do not dispose of**

process wastewater, hazardous waste, or raw chemicals down the drain because they can pass untreated to ground water. ☐ **2 Point**

- **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 Point**

- **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 Point**

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

Section 3: Waste Management Category point total: _____

SECTION 4: CHEMICAL USE REDUCTION & SAFETY

✓ **Eliminate chemicals in the 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 areas of the golf course. Use native plantings to reduce water and chemical fertilizers and herbicides.** ☐ **25 Points**

- *Describe which brands and products are currently being used.*

_____

_____

✓ **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) ☐ **5 points**

Exterior Flat paint: 100 grams per liter (g/L) ☐ **5 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 Course Operation

- **Store and maintain vehicles and equipment on covered, sealed impervious areas.** ☐ **2 Point**
- **Locate fueling facilities on roofed and concrete paved (not asphalt) and areas equipped with spill containment and recovery facilities.** ☐ **2 Point**
- **Locate fueling facilities away from surface waters and drinking water wells.** ☐ **2 Point**
- **Eliminate floor drains in fueling and maintenance facilities unless they drain to storage tanks.** ☐ **2 Point**
- **Equipment washing areas must drain to an oil/water separator and from** ☐ **2 Point**

there to a sanitary sewer or holding tank.

- **Keep containment booms and absorbent materials on hand for the containment and remediation of spills.** ☐ **2 Point**
- **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 Point**
- **Provide secondary containment for all hazardous materials, including storage areas for liquid fertilizers.** ☐ **2 Point**
- **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 Point**
- **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 Point**
- **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 Point**
- **Provide impervious surfaces in chemical mixing areas.** ☐ **2 Point**
- **Dispose of hazardous materials in a manner consistent with the label and state and federal regulations.** ☐ **2 Point**
- **Buy fertilizers and pesticides in limited quantities and do not store large volumes of chemicals on site.** ☐ **2 Point**
- **Minimize the use of underground fuel storage and eliminate chemical storage tanks in drinking water and/or ground water supply areas.**

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 tees and greens.** ☐ **25 Points**

✓ **Currently employ a computerized water irrigation system that utilizes evapotranspiration rates (ET) and other daily weather data to set irrigation rates.** ☐ **25 Points**

✓ **Current acreage of turfgrass irrigated: _____**

✓ **Current acre-feet of water per irrigated turfgrass acre annually: _____**

✓ **Develop a plan to reduce irrigated acreage and/or quantity of water per irrigated acre.** ☐ **10 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.** ☐ **3 Points**

√ **Use a computerized irrigation management system equipped with flow management to increase irrigation efficiency.** ☐ **15 Points**

√ **Rain shutoff switches should be installed on all new and existing irrigation systems to avoid over-watering following significant rainfall.** ☐ **3 Points**

Turf Grass

√ **Maintain existing vegetation, such as forest or grassland, that is consistent with golf course design objectives.** ☐ **3 Points**

√ **Select and use turf grass varieties that require less irrigation, such as velvet bent grass, 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.** ☐ **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. Avoid excessive amounts of nitrogen, and apply nutrients based upon turf species and cultivar nutrient requirements, level of use and soil type.** ☐ **3 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 and map areas of high seasonal water tables where irrigation demands may be less, due to capillary movement of water into the root zone from a shallow water table. Late winter and early spring are usually good times to observe.** ☐ **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**

Landscaping

√ **Use drip irrigation in landscape areas to apply water only to the plants that need it.**	☐ **3 Points**
√ **Use mulches in shrub and flowerbeds to reduce water evaporation losses.**	☐ **3 Points**
√ **Consider use of polymers 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 on a new course and plant native vegetation on new and existing courses.**	☐ **3 Points**

Specific BMPs for Water Conservation

√ **Reduce irrigation rates in secondary rough areas and, where possible, eliminate irrigation of non-play areas.**	☐ **3 Points**
√ **Develop a drought emergency plan to balance the most critical golf course 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 golf course. (Note: May require a specific permit from the DEM, contact the Office of Customer and Technical Assistance.)**	☐ **50 Points**

✓ **Acreage of turfgrass irrigated after developing and implementing reduction plan: _____**

✓ **Acre-feet of water per irrigated turfgrass acre annually after developing and implementing reduction plan: _____**

✓ **Net reduction of acreage of turfgrass irrigated: _____**

✓ **Net reduction of acre-feet of water per irrigated turfgrass acre annually: _____**

Sections 5 : Water Conservation Category point total: _____

SECTION 6: Energy Conservation

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:

√ **Installation of energy-efficient lighting (compact fluorescent bulbs to T-8 fluorescent) or development of a schedule for replacement with energy efficient lighting at operational and maintenance facilities, including outdoor lighting.** ☐ **10 Points**

√ **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.** ☐ **10 Points**

√ **Substitute natural light for electric light or use of daytime dimming sensors.** ☐ **3 Points**

✓ **Use solar panels or wind turbines to generate electricity.** ☐ **75 Points**

✓ **Use solar panels for a hot water system or for pumping irrigation wells.** ☐ **50 Points**

✓ **Install a geothermal system for HVAC**. ☐ **75 Point**

✓ **Use alternative fuel vehicles for golf course operations (lawn mowers, tractors, etc.).** ☐ **25 Points**

✓ **Use hybrid mowing vehicles that include an alternator to power the cutting reels while the engine can be operated at a reduced throttle.**

- **Up to 33% of fleet converted to hybrid** ☐ **10 Points**
- **34% to 67% of fleet converted to hybrid** ☐ **20 Points**
- **68% to 100% of fleet converted to hybrid** ☐ **40 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**

✓ **Purchase carbon off sets (renewable energy credit, green tags, etc.)** ☐ **Points negotiable**
Learn more by visiting Tufts Climate imitative, Voluntary Carbon Offset Information Portal, at http://www.tufts.edu/tie/tci/carbonoffsets/index.htm

- *quantity* _____

Annual kilowatt hours of electricity used after implementing BMPs:

_____ **Net Reduction:**_____

Annual cubic feet of natural gas used after implementing BMPs:

_____ **Net Reduction:**_____

Annual gallons of heating oil used at after implementing BMPs:

_____ **Net Reduction:**_____

Annual gallons of gasoline/diesel used after implementing BMPs:

_____ **Net Reduction:**_____

Section 6: Energy Category point total: _____

SECTION 7: WATER QUALITY MANAGEMENT

✓ **Develop an existing conditions survey and site plan that includes:** ☐ **50 Points**

- **drought emergency plan to balance the most critical golf course 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;**
- **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).

✓ **Implement Best Management practices to eliminate potential nutrient or pesticide contamination of water sources.** ☐ **15 Points**

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

Current use of Phosphate (P_2O_5):_____

Current Use of Potash (K_2O):_____

✓ **Conduct soil testing in the rough since the greatest amount of phosphate and potash are applied to the rough. Based on test results, determine phosphorus and potassium fertilizer needs.** ☐ **15 Points**

✓ **Develop and implement a Nutrient Management Plan that incorporates university scientist guidelines to determine minimum fertilizer requirements.** ☐ **25 Points**

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

Use of Phosphate (P_2O_5) after plan implementation:_____

Use of Potash (K_2O) 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):_____

Buffers - One of the best ways to protect surface water quality is to develop, enhance, restore or protect riparian and coastal vegetated buffers along the banks of golf course 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 may increase infiltration and ground water recharge.

Implementation for any of the following BMPs for vegetative buffers

- **Protect and maintain existing woody vegetation as natural buffers, to the maximum extent possible, during the design and construction of new courses or during course maintenance. It is important to mark the limit of clearing prior to construction.** ☐ **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** ☐ **2 Points**

should be native and non-invasive.

- **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 course layout, 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 fairway slopes 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 shrubs in preventing stream bank erosion.** ☐ **2 Points**

- **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** ☐ **2 Points**

vegetation when necessary.

- **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**
- **Leave roughs in natural condition but keep vegetation height at about one foot to allow raptors access to mice and voles and for tick control.** ☐ **2 Points**
- **Design detention ponds with a continuous wide band of tall emergent plants around the edges and in the shallow water to discourage geese.** ☐ **2 Points**
- **Inspect buffers several times each year, particularly after runoff events, to assure that sheet flow is occurring across vegetative buffers. Where channelized flow is developing, re-grade as necessary and use flow spreaders to encourage lateral flow of runoff along the outer edge of the buffer.** ☐ **2 Points**
- **Use a qualified professional to perform a watershed analysis to estimate the amount of runoff that could be captured using different sizes, shapes, and locations of storage ponds. Conduct this analysis in conjunction with the drainage planning for the course**. ☐ **2 Points**

Implementation of any of the following BMPs for constructed water storage ponds

- **Construct storage ponds to increase water supply for use during peak irrigation times.** ☐ **4 Points**
- **Direct drainage from natural slopes and impervious surfaces through areas with vegetative cover, such as swales and diversions, and into storage ponds to maximize the collection of runoff from local storm events.** ☐ **4 Points**
- **Use high flow diversions or pumping to fill the storage ponds during flood flows.** ☐ **4 Points**
- **Plan new ponds and the enlargement of existing ponds in upland areas to avoid disturbing wetlands and watercourses.** ☐ **4 Points**
- **Line excavated ponds based on an evaluation of potential seepage losses from the pond, especially in sandy soils or coarse geologic** ☐ **4 Points**

deposits such as stratified drift.

- **Construct ponds with irregular shorelines and bottom contours to enhance wildlife habitat.** ☐ **4 Points**
- **If possible, construct ponds with shallower side slopes (7:1 ratio) to encourage the establishment of a wetland shelf along the pond shoreline.** ☐ **4 Points**
- **If possible, construct ponds in a series, or "train", to treat stormwater/site runoff. The first pond will catch the "first flush", the second will provide additional filtering and the third will filter and serve as a primary withdrawal pond for irrigation.** ☐ **4 Points**
- **Design constructed ponds with an impervious lining to prevent loss of water to the ground water table where necessary. A pond lining may be clay or synthetic** ☐ **4 Points**

_____

_____

_____

Section 7: Water Quality Management Category point total: _____

SECTION 8: CRMC Greenwich Bay Special Area Management Plan (SAMP)

Note: This section applies only to the following four golf courses within the Greenwich Bay SAMP:

- **Warwick Country Club,**
- **Sea View Golf Course,**
- **Goddard Park Golf Course,**
- **Potowomut Country Club.**

Priority Action # 16 – Improving Water Quality in the Greenwich Bay SAMP, recommends development of a Green Golf Course program to limit pollutants from the four golf courses within the Greenwich Bay watershed. Section 470.8 of the Greenwich Bay SAMP establishes criteria for meeting a Green Golf Course program, which have been incorporated below.

Participation in this Rhode Island Golf Course Green Certification program meets the CRMC criteria for a Green Golf Course program, provided the golf course attains a minimum of 20 out of the 30 available points below.

a) Maintain at least 0.25-inch height cut on greens **Alternative – Commitment to altering the height of cut on greens to seasonal conditions and stress minimization.**	☐ **5 Points**
b) Plant velvet bentgrass on greens	☐ **5 Points**
c) Use IPM or other alternative practices to pesticides	☐ **5 Points**
d) Use controlled-release fertilizers	☐ **5 Points**
e) Install the most current irrigation technology	☐ **5 Points**
f) Educate members and golfers on the benefits of green golf course practices	☐ **5 Points**
Section 8: Greenwich Bay SAMP Category point total:	_____

SECTION 9: ENVIRONMENTAL EDUCATION

✓ **Maintain environmental information (display, brochure) for club members, guests and staff with current information on what your business is doing to reduce environmental impact. Can include tips, and solicit suggestions from customers/members and guests.**

In club house areas only ☐ **7 Points**

In club house areas and golf course ☐ **10 Points**

- *Describe display:*

_____

_____

_____

Section 9: Environmental Education Category point total: _____

SECTION 10: KITCHEN – CLUB HOUSE

Food

✓ **Purchase food grown on local farms, as much as possible.**

- *Check the estimated percentage of local food that is purchased or percentage of food budget.*

Note: Organic certification refers to meeting the standards in place in the USDA National Organic Program

✓ **Percentage of your fruits, vegetables and beans:**

come from Rhode Island farms?

10%-25% ☐ **2 Points**

25%-75% ☐ **4 Points**

75%-100% ☐ **10 Points**

carry organic certification?

10%-25% ☐ **1 Point**

25%-75% ☐ **3 Points**

75%-100% ☐ **5 Points**

✓ **What percentage of your milk, cheese, or other dairy products:**

come from Rhode Island farms?

10%-25% ☐ **2 Points**

25%-75% ☐ **4 Points**

75%-100% ☐ **10 Points**

✓ **What percentage of your eggs, chicken, beef, pork and other meats:**

come from Rhode Island farms?

10%-25% ☐ **2 Points**

25%-75% ☐ **4 Points**

75%-100% ☐ **10 Points**

✓ **What percentage of your seafood:**

aligns with sustainable seafood recommendations from the Monterey Bay Aquarium (Seafood Watch), Chef's Collaborative, or Audubon Society sustainable seafood programs?

10%-25% ☐ **1 Point**

25%-75% ☐ **3 Points**

75%-100% ☐ **10 Points**

✓ **What % of salmon is wild (vs. farm raised)?**

10%-25% ☐ **1 Point**

25%-75% ☐ **3 Points**

75%-100% ☐ **10 Points**

✓ **Seafood from Rhode Island waters is prioritized** ☐ **3 Points**

Food Sub-Category point total: _____

OTHER INITIATIVES

✓ **Eliminate the use of Styrofoam food containers in food service including "to-go" orders and reduce the amount of plastic containers and utensils, except where absolutely necessary. Paper cups are preferred over plastic.** ☐ **5 Points**

✓ **Send waste vegetable (cooking) oil for reuse to a facility approved by the DEM Office of Waste Management under a Solid Waste Beneficial Use Determination, for the production of biodiesel fuel.** ☐ **5 Points**

✓ **Establish a program to compost organic kitchen wastes for use as soil amendment in gardens or for farm animal feed.** ☐ **5 Points**

✓ **Use cleaners and detergents that are biodegradable, do not contain NTA (nitrilotriacetic acid), and do not contain chlorine bleach or phosphates.** (up to 10 points depending on use throughout property).

Facts and Resources

- Institutional users now report that, in general, green cleaners are cost competitive and perform just as well as their conventional counterparts
- Social and environmental benefits can be gained by switching to green cleaners; for example, using products certified by Green Seal http://www.greenseal.org/
- The States of Massachusetts, Minnesota, and Vermont report that green cleaners are cost competitive
- Using green cleaning chemicals can actually produce additional savings when other benefits are taken into account. Switching to green cleaners, for example, can help reduce the more than $75 million a year U.S. institutions spend to address the chemical-related injuries of custodial workers
- Use a Material Safety Data Sheet (MSDS), a form containing data regarding the properties of a particular product or substance, and contains comprehensive information including toxicity and health effects, to assist in switching to less hazardous chemicals
- They can be obtained through various web sites including MSDS Search http://www.msdssearch.com or Vermont Safety Information Resources MSDS Index at http://hazard.com/msds/

Describe which product brands are used and for which purpose.

glass cleaner:_____ ☐ **2 Points**

floor cleaner:_____ ☐ **2 Points**

bathroom cleaner:_____ ☐ **2 Points**

counter top cleaner:_____ ☐ **2 Points**

laundry soap:_____ ☐ **2 Points**

other:_____ ☐ **Points Negotiable**

OR…….

✓ **Use of "Green Seal certified" cleaning materials throughout property.**

http://www.greenseal.org/certproducts.htm#cleaners ☐ **15 Points**

✓ **High Temperature dish washer (as opposed to low temperature dish washers that use more chemicals).** ☐ **3 Points**

Other Initiatives Sub-Category point total: _____

Section 10: Kitchen Category point total: _____

SECTION 11: WASTE MANAGEMENT – Club House

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 of waste generated in 20___ _____ ☐ **10 Points**

Pounds of recycled material generated in 20__ _____

Pounds of recycled material 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** ☐ **1 Point**
Businesses are required by RIDEM regulation to recycle this commodity

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

Paper: _____

Cardboard:_____

Glass containers:_____

Metal containers: _____

Plastic containers: _____

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

_____

_____

Universal Waste (Required by Regulation)

✓ **Store old or burned out fluorescent lamps (tube style), CFL's (compact fluorescent lamp bulbs), and CRT's (computer monitors and televisions) in a central accumulation area. Send YEARLY to a consolidation or recycling facility. This is a LEGAL obligation for all businesses within the State of Rhode Island. Points will be awarded with proof of proper disposal of this type of waste.**

Documentation_____ ☐ **2 Points**

This activity is only awarded 2 points because conformance to this is **required**, as it is a legal obligation for all businesses in Rhode Island to dispose of Universal Wastes properly

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

Section 11: Waste Management Category point total: _____

SECTION 12: 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 13: WATER CONSERVATION – Club House

Gallons of water used in 20___ _____

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.

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 waterless urinals
Number of waterless urinals:_____ ☐ **10 Points**

All restrooms conform with this ☐ **3 Points**

✓ **Automatic shut off faucets installed.** ☐ **2 Points**

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

SECTION 14: Energy – Club House

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:

_____

✓ **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).**

90% to 100% of the property
approx # of CFL's _____ Avg. CFL's per room_____ ☐ **15 Points**

50% to 90% of property
approx # of CFL's _____ Avg. CFL's per room_____ ☐ **3 Points**

25% to 50 % of the property
approx # of CFL's _____ Avg. CFL's per room_____ ☐ **1 Point**

✓ **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.**

75 - 100% of property ☐ **10 Points**

50 - 75% of property ☐ **5 Points**

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

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

✓ **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**

✓ **Purchase carbon off sets (renewable energy credit, green tags, etc.)** ☐ **Points negotiable**

Learn more by visiting Tufts Climate imitative, Voluntary Carbon Offset Information Portal, at http://www.tufts.edu/tie/tci/carbonoffsets/index.htm

- *quantity* _____

Annual kilowatt hours of electricity used after implementing BMPs:

_____ **Net Reduction:**_____

Annual cubic feet of natural gas used after implementing BMPs:

_____ **Net Reduction:**_____

Annual gallons of heating oil used at after implementing BMPs:

_____ **Net Reduction:**_____

Annual gallons of gasoline/diesel used after implementing BMPs:

_____ **Net Reduction:**_____

Section 14: Energy Category point total: _____

SECTION 15: 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 furnace.** **Year:** ☐ **Points negotiable**

✓ **Grow herbs and flowers for use in kitchen and hotel.** ☐ **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)

✓ **Other activities to reduce environmental impact.** ☐ **Points negotiable**

_____

_____

_____

Section 15: Other Initiatives Category point total: _____

Add up ALL points, and enter the total …… **_____ Total Points**

- **300 points qualifies for an *automatic certification*.**
- **If you scored your business at less than 300 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!

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