

## APPENDIX E: GOLF COURSE BEST MANAGEMENT PRACTICE CHECKLIST

This checklist is intended to help the superintendent review operations at the course, determine where improvements can be made, and show the progress being made. It should be updated annually and then reviewed with the management team and greens committee.

No governmental agency or municipality can, without major changes to Florida law, require adherence to this checklist as written. It is meant to be comprehensive, and as such to help the golf course achieve a level of environmental stewardship and management greater than the minimums required by law. Conversely, any BMP checklist to be adopted by rule or ordinance must be nar-

rowly written and limited to the scope of the regulating agency's authority under the enabling statute, as well as being publicly noticed per Chapter 120, F.S. For example, while FDEP could, through the rule adoption process, adopt a BMP checklist addressing water pollution, it does not have the legal authority to address pesticide use or fire safety. Still, the practices listed are good ideas. (FDEP can, however, take action after pollution has occurred due to a spill or a fire, for instance.)

Please use the checklist on the following pages in the spirit in which it was written, and may your golf course always be green.

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ID#	Practice	Yes (or N/A)	Partial per Plan (Year to Finish)	No	Planned (Year Start/ Finish)
	<i>General Management Practices</i>				
1	Do you have a site-specific golf course natural resource management plan?				
2	Has a site characterization been completed for the following: location, topography, soils, geology, surface waters, ground water, vegetation, and wildlife habitat and populations?				
3	Have all environmentally sensitive areas been identified and mapped?				
4	Have all special management zone (SMZ) areas been identified and mapped?				
5	Have all SMZs been implemented?				
6	Have all drainage patterns and features been mapped along with associated buffers and SMZs?				
7	Are maps displayed in areas where all maintenance employees will be familiar with them and the BMP/SMZ procedures to be followed?				
8	Do all maintenance workers receive BMP training on a regular basis, in addition to or alternating with safety training?				
9	Are the individuals responsible for environmental management, safety and training, and emergency response clearly identified?				
10	Have you assigned a designated spokesperson for media inquiries in the event of an emergency?				
11	Are regular emergency response drills scheduled with employees?				
12	Is a list of emergency response agencies and contacts displayed in visible areas throughout the facility?				
13	Is the most current response plan on file with all the appropriate agencies (fire department, local emergency planning agencies, etc.)?				
14	Have you provided a tour of golf course facilities to the local emergency response team?				

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	<i>General Management Practices</i>				
15	Have you formed a resource advisory group, including nongolf community representatives, to assist with planning and implementing environmental projects and educational efforts?				
16	Do you have written materials such as brochures, signs, and newsletters, to promote environmental awareness among the golfing and nongolfing community?				
17	Do you invite patrons and community members to participate in environmental projects?				
	<i>General BMPs for Maintenance and Chemical Facilities</i>				
1	Are detailed maps of the facility provided in heavily traveled areas? Maps should include the location of fire extinguishers, showers, eye-wash stations, and evacuation routes.				
2	Is the proper emergency spill equipment on hand?				
3	Is portable fire equipment located throughout the facility?				
4	Are employees trained on the purpose and proper use of PPE to limit the potential of exposure to skin and eyes?				
5	Is the proper emergency response equipment and protective equipment available to respond to chemical spills or fires?				
6	Are first-aid and eye-wash stations maintained in critical areas in the facility?				
7	Do you maintain a detailed product inventory?				
8	Is a label and MSDS maintained for each chemical stored at the facility, including ammonia, certain fertilizer products, pesticides, solvents, and other hazardous waste materials?				
9	Are inspections and maintenance of environmental installations—including barriers, slopes, retention areas, and tank containment—performed regularly?				
10	Is there proper security throughout the facility (e.g., security fences/gates, lighting, surveillance, lockouts on secondary containment)?				
11	Is the property properly secured to control access in and out of the facility?				
12	Are visible safety reminders and warnings placed in storage areas?				
13	Are areas used for storage kept clean and clear of dust and damaged materials?				
	<i>Pesticide Storage and Handling</i>				
1	Do the design and construction of maintenance and chemical facilities prevent stormwater contamination and prevent potential contaminants from leaving the plant area? The facility should be carefully observed to ensure that no contaminated discharges occur either to existing on-site stormwater systems or to municipal storm sewer systems, or off-site by any other means.				
2	Are all pesticide containers stored in an impervious, curbed area?				
3	Do all mixing tanks, pumps, hoses, and other pesticide storage, mixing, and loading equipment have some type of containment to prevent contamination in the event of a spill or rupture?				

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4	Is a check valve or air gap separation ALWAYS used to prevent backflow into the water source?				
5	Are appropriate PPEs as indicated on the label or MSDS ALWAYS used when handling pesticides?				
6	Is adequate headspace left when filling the tank?				
7	Is adequate ventilation provided to prevent vapor accumulation?				
8	Are all dry pesticides stored above or away from liquids?				
9	Are all pesticides stored at or below eye level?				
10	Are all pesticide labels legible and containers in good condition?				
11	Are valves in the mixing and loading area properly labeled?				
12	Are valves locked during off hours to prevent tampering?				
13	Are all secondary containment walls and floors covered with an impervious coating?				
14	Are seams and cracks in secondary containment walls and floors sealed in a timely manner?				
15	Are all pesticides mixed and loaded into application equipment within a protected containment area?				
16	Are all spills cleaned up immediately?				
17	Is the sump drained and cleaned each day, or any time incompatible pesticides are handled?				
18	Is excess pesticide mix applied as a pesticide to a label-authorized site or saved for later use?				
19	Is tank or container rinse water applied as a pesticide to a label-authorized site or saved for later use as makeup water for compatible applications?				
	<b>Fertilizer Storage and Handling</b>				
1	Are pesticides and fertilizer stored in separate buildings, or with a concrete firewall maintaining separation?				
2	Is bagged ammonium nitrate stored at least 3 feet away from any building wall?				
3	Are ammonium nitrate and other strongly oxidizing materials stored away from sludge products or organic materials?				
4	Are all unloading and loading points for fertilizer/raw material designed to minimize accidental release and allow for easy cleanup?				
5	Are dry fertilizer and raw materials covered from the elements?				
6	Are unloading, loading, and other critical control points swept after use to further control dust and spills?				
7	Are all fertilizers loaded over impervious areas or over a tarp or other temporary barrier to contain spills?				

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	<b>Fueling</b>				
1	Are fuel and product tanks protected from potential damage caused from vehicle collisions if they are close to heavy traffic areas?				
2	Are all tanks registered, if required by Rules 62-761 or 62-762, F.A.C.?				
3	Do all tanks and hoses have shutoff valves?				
4	Are spill buckets located at all liquid transfer points?				
5	Are the correct line and couplers provided at each transfer point?				
6	Are all tanks and secondary containment inspected monthly for problems such as deterioration, defects, and leaking, and is the inspection documented?				
7	Are all storage tanks properly labeled?				
8	Does containment volume equal at least 110% of the largest tank capacity?				
	<b>Equipment Washing</b>				
1	Is all equipment blown with compressed air before washing to remove dry material and minimize wastewater generation?				
2	Are all washing hoses equipped with automatic shutoff nozzles?				
3	Are grass clippings composted and used elsewhere on the grounds?				
4	Are all exotic or diseased materials safely disposed of?				
5	Is all washwater for nonpesticide equipment filtered and recycled, or otherwise properly disposed of in accordance with an industrial wastewater permit or exemption letter?				
6	Is pesticide spray equipment washed separately at the chemical mixing center?				
	<b>Equipment Repair and Maintenance</b>				
1	Does each piece of equipment have a designated storage/parking space to allow the tracking of leaks?				
2	Are batteries properly stored and disposed of?				
3	Are drums containing used oil or oil filters properly labeled and stored in contained areas?				
4	Are washwater recycling system filters properly labeled and stored in contained areas?				
5	Are chemical materials, solvents, paints, lubricants, and other substances clearly and accurately labeled?				
6	Are solvents and other flammable materials properly stored, handled, and recycled or disposed of?				
7	Have you informed employees of materials classified as hazardous?				
8	Have you ensured proper training in the handling of hazardous materials?				

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	<i>Stormwater</i>				
1	Is stormwater diverted away from areas where it may become contaminated, such as loading/unloading areas, storage areas, and truck traffic areas?				
2	Is all stormwater that has contacted process areas, including parking lots and driveways that handle truck traffic, contained in an impervious containment structure and used for pasture irrigation or similar uses?				
3	Are equipment rinse pads curbed to prevent rinsate from being washed off the pad?				
4	Are all stormwater conveyances and holding facilities inspected frequently for cracks or leakage, and repaired immediately?				
5	Do all stormwater discharges from impervious areas flow through swales, rain gardens, bioretention areas, or other stormwater treatment train components before discharge to a waterbody or storm sewer?				
6	Do you maximize the use of pervious pavements or other pervious materials for overflow parking, walking paths, etc.?				
	<i>Water Supply and Irrigation</i>				
1	If the water supply is from a municipal source, is required protection from back-siphoning installed?				
2	For on-site wells, is the wellhead elevated or curbed to protect leaks and spills from entering the well?				
3	Is the wellhead protected from back-siphoning?				
4	Has the irrigation system been audited within the last year?				
5	Have all repairs and adjustments recommended by the last audit been completed?				
6	Is the system inspected frequently (at least weekly, if operating) as a part of regular course operation, and are all employees trained to report damaged heads, leaks, and other problems?				
7	Are preventive and corrective maintenance records kept in a manner to allow convenient review and identification of trends?				
8	Does the system allow for the selective irrigation of greens, tees, and fairways as needed (double heads, etc.)?				
9	Is irrigation control based on on-site weather information, soil moisture, and localized plant needs, rather than a fixed schedule?				
10	Are all defects in the irrigation system noted and repaired promptly and properly?				
	<i>Nutrient Management</i>				
1	Are individual applications of soluble nitrogen limited to 1/2 lb./1,000 ft <sup>2</sup> on sandy soils, including greens?				
2	Where existing distribution equipment cannot maintain even distribution of lower application rates of soluble nitrogen, are applications limited to 1 lb./1,000 ft <sup>2</sup> ?				

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3	Are soil tests performed before phosphorus is applied, and then only if test results show that phosphorus is needed?				
4	Are proper cultural practices employed to prevent stress to the turf, so that excess fertilizer is not required for recovery?				
5	Are records kept of all nutrient applications?				
6	In addition to plant needs, is the timing of fertilizer application adjusted to account for impending weather, to minimize loss to the environment?				
7	Are personnel trained and precautions taken to ensure that fertilizer is not applied to impervious areas or directly to waterbodies?				
	<b>Cultural Practices</b>				
1	Is turf mowed at the high end of the recommended range unless conditions dictate otherwise?				
2	Are mowing practices adjusted for shade or drought conditions?				
3	Are fertilizer and irrigation levels adjusted for shaded areas?				
4	Are clippings returned to the soil on roughs and fairways?				
5	Are collected clippings composted or otherwise recycled?				
6	Are aeration and verticutting practiced to avoid compaction and excessive thatch?				
	<b>Lake and Aquatic Plant Management</b>				
1	Are native plant or unfertilized grass buffers of 25 feet used around waterbodies wherever practicable?				
2	Are grass buffers mowed at 2 inches or higher to slow and filter overland flow to waterbodies?				
3	Are swales and berms used to avoid direct runoff whenever practicable?				
4	Is IPM practiced in lake management so that chemical controls are minimized?				
	<b>Pest Management</b>				
1	Is IPM used at all times?				
2	Are cultural controls, irrigation, and nutrient applications managed to minimize stress and minimize susceptibility to pest damage?				
3	Are records kept of all pesticide applications?				
4	Are employees trained in scouting and monitoring for pest damage?				
5	Are records of pest scouting maintained to assist in detecting trends?				
	<b>Environmental Monitoring</b>				
1	Do you visually inspect natural areas and waterbodies for erosion damage, sediment, exotic species, algae, fish kills, pollutant plumes, and other problems as a regular part of IPM scouting and course observation?				

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2	Do you have a mechanism for immediate employee reporting of water quality or other environmental problems to supervisors for corrective action or and/or reporting to regulatory agencies, if appropriate?				
3	Do you keep written records of monitoring and inspections, results, and corrective or preventive measures?				
4	Have you conducted at least 4 quarters of baseline water quality testing?				
5	Do you conduct routine follow-up water quality testing (at least every 3 to 5 years) and after significant modifications that might affect water quality?				

