

## Green Section Record - September/October 2005

# Setting Standards

Creating effective written maintenance standards is easier than you think.

By Todd Lowe

Let's face it; golf courses are businesses that service thousands of customers each year. Golf course superintendents are given a budget, equipment, and staff and are asked to meet or exceed customer expectations. Other successful businesses have standard operating procedures and long-range plans to improve daily operations and customer satisfaction. Likewise, golf courses should also have a set of written maintenance standards that outline the goals and procedures for day-to-day operations.

Golf course maintenance standards are guidelines that detail the manner in which the golf course is maintained on a daily basis. They are not instruction manuals for each cultural practice or a list of job descriptions for employees, although these can be included. They are, however, formal documents that outline golf course maintenance goals and the necessary practices for meeting these goals.

There are maintenance standards in place on all golf courses, but most of them are intangible guidelines, developed and implemented by the golf course superintendent. From our experience, only a small percentage of golf courses develop written maintenance standards with golfer input. Why do so many golf courses operate without any tangible guidelines? Perhaps most of us are apprehensive to step into the unfamiliar, and unless you have been involved with creating maintenance standards, it is difficult to know where to begin.

Creating formal maintenance standards is not a difficult task, but it can seem intimidating at first. Several articles have been published previously and are excellent resources to utilize in formulating maintenance standards.<sup>3,4,5</sup> This article combines important aspects of the previous articles and



Aerial photographs can be taken from mobile platforms, like cherry pickers. This picture helps justify the need for irrigation upgrades.

provides a step-by-step outline of what your maintenance standards should include, and addresses how they should be established and administered. Lastly, this article offers suggestions on how to establish high standards with minimal expense.

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## WHY STANDARDIZE?

One of the most important reasons for creating a formal set of maintenance standards is to match golfer expectation levels with maintenance procedures. An issue that the golf course superintendent might find important and devote a large amount of time and money towards may not be as important to the golfers. Obviously, there is an inherent hierarchy of golf course priorities that begins with putting greens, tees, fairways, and roughs that should not be compromised, but there are other areas of the golf course that require routine maintenance as well.



Input from golfers of various skill levels is necessary when establishing putting green standards of smoothness, speed, and consistency.

Another purpose for creating maintenance standards is to provide continuity in management goals from year to year. We often find golf clubs with new green committees that have preferences or agendas that do not necessarily mirror those of the membership. Whether the issues include altering putting speeds, creating tighter/fluffier fairway lies, or planting a forest on the golf course, there should be some continuity in directives from year to year.

Maintenance standards offer a safeguard against such occurrences.

Many clubs we visit have limited budgets, and it is important to allocate funds appropriately to each area of the golf course. Primary playing areas should be properly maintained,<sup>5</sup> but the remainder of the golf course requires a certain level of maintenance, too. A common topic discussed during many Turf Advisory Service visits is taking the golf course to the next level, and maintenance standards can help determine where this level is and what it will take to get there. During economically tight periods, these documents are helpful for deciding where budget cuts can be made, while maintaining acceptable quality.<sup>6</sup> Time/motion studies are an essential component of maintenance standards and can be calculated to track staffing needs and expenses for each part of the course. With these studies, it is easy to see where appropriate cuts can be made - if the need arises.

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## WHO SETS THE STANDARDS?

Representatives of the membership and the golf course superintendent should be responsible for establishing the maintenance standards. Ideally, the Green Committee represents a broad range of the membership.<sup>1,8</sup> If this is the case, maintenance standards can be created through a series of Green Committee meetings. It also may be helpful to put together a Standards Committee to survey the membership for the necessary information to formulate priorities and expectation levels.

The process begins by creating a rudimentary set of guidelines for each area of the golf course, listing current cultural practices. The objectives are then discussed with the Green Committee, or possibly a Standards Committee, and the document is edited based on results from those discussions. It may require several meetings to fully describe each cultural practice, its frequency, and why it is necessary.

Other individuals who might be called upon for help include the golf professional, general manager, USGA agronomist, or other course officials. Agronomists assist golf courses about various expectation levels and often recommend necessary cultural practices to meet those expectations. Agronomists are also especially helpful with planning long-range improvement projects. Golf professionals are valuable as they are generally aware of the skill level of the average golfer. They also have the most direct contact with golfers and are aware of common issues and concerns.

## WHAT TO INCLUDE

Maintenance standards should include a description of the desired level of quality and conditioning for each area of the golf course and the cultural practices necessary to sustain the standard. There are no set guidelines for writing standards, but they generally include a cover page, table of contents, introduction/mission statement, and sections on greens, tees, fairways, roughs, bunkers, trees/landscaping, aquatic features, long-range plans, and references.



Long-range improvement plans are often necessary to achieve appropriate golf course maintenance standards.

Time/motion studies are essential building blocks for establishing maintenance standards. Time studies calculate the time necessary to complete each daily task. They may require a few days to complete, as the data must be gathered and analyzed, but the information is crucial when discussing cultural programs.<sup>4</sup> Time studies can be included individually with each section or can be listed in a separate section. Data from time studies also can be grouped into sections that show percent resource allocation for each area of the golf course. You may be surprised that putting greens, areas of the golf course where the majority of the game of golf is played, actually receive a small percentage of the budget as compared to secondary playing surfaces, out-of-play areas, or hazards.

In developing written maintenance standards, the need for long-range planning will become apparent. For example, if the standard is to maintain level teeing grounds with uniform and dense turf, then tee leveling/enlargement may be necessary. Likewise, if the standard is to maintain firm/dry approaches with minimal plugged lies, but an outdated irrigation system with poor water distribution is in place, then it may be necessary to plan for irrigation system upgrades.

**Introduction:** Introductory statements might include types of grasses utilized, a brief description of the architecture, and the overall *feel* for how the golf course is to be maintained. Quite often a mission statement is included as well. Additional information should include the individuals and groups responsible for developing the standards and how they are to be utilized or amended. Also, mention should be made that the standards are not intended to be a rigid set of guidelines but are flexible and should be adjusted depending on weather or turf health considerations.

**Greens:** Objectives should include quality standards such as turf density, consistency, trueness, smoothness, firmness, and putting speed. A range of acceptable objectives for daily play and tournament play should be included. These objectives should be determined for the average golfer and not for the small percentage of low-handicappers. Necessary cultural practices for maintaining these objectives should include (but are not limited to) mowing heights and frequencies, core aeration, verticutting, grooming, sand topdressing, and rolling. Timing and frequency of each

aeration, verticutting, grooming, sand topdressing, and rolling. Timing and frequency of each practice should be included as well. Procedures for determining hole locations should also be included. Next, standards for collars and approaches should be determined, and necessary cultural practices listed. Lastly, type of construction should also be mentioned.

**Tees:** Teeing grounds should be level, of appropriate size for the amount of play, with dense and uniform turf. In addition to listing mowing heights, mowing frequencies, divot repair, and other necessary cultural practices, tee alignment and procedures for tee marker rotation should be discussed. Since tees become unlevel over time, it is also advisable to mention occasional leveling and enlargement.



Pictures are utilized to better explain unfamiliar cultural practices like core aeration.

**Fairways and Roughs:** Some objectives to mention for fairways and roughs include fairway ball lie, turf density, and surface firmness and uniformity. Maintenance practices should include mowing height/frequency, soil cultivation practices, sand topdressing, and thatch management. Herbicide and fertilizer programs may also be included. Drainage improvements are often ongoing projects at most golf courses to maintain good turf consistency and surface firmness. Likewise, there should be some

mention of irrigation design, maintenance, repair, and possible upgrades to maintain proper standards.

**Bunkers:** A general consensus on bunker firmness is required so that a certain standard can be maintained. Listing a few objectives like relative firmness and cleanliness of debris is common. Maintenance practices may include frequency of raking, mechanical vs. hand-raking, edging, and adding of new sand. Also, bunkers should be defined by a distinct edge, according to the Rules of Golf. It is important that bunkers drain appropriately so that they do not remain saturated or overly firm, and drainage installation may be necessary if it does not already exist. Eventually complete refurbishment may be necessary, depending on type of construction, annual rainfall, and golfer expectations.

**Aquatics:** Lakes, streams, and ponds are common golf course features that require ongoing maintenance. Water quality (algae and weeds) should be discussed, and practices like trimming, marking for the Rules of Golf, lake bank stabilization, water aeration, and buffer strip maintenance should be described.

**Trees and Landscaping:** Trees are integral components of golf courses that require continual maintenance. Practices like annual limb and root pruning and debris maintenance should be discussed. More importantly, there should be a policy for tree installation and removal. *Trees have a negative impact on turf quality, and the golf course superintendent should identify types of trees planted, tree location, and tree removal.* This is particularly important for addressing the previously mentioned standards for putting greens and tees, as improperly placed trees are particularly detrimental to these areas. Likewise, landscaping has become a prominent feature on many golf courses and, although they are aesthetically appealing, landscape beds require continual edging, weeding, trimming, mulching, and pest management. The desired level of quality for landscape beds and cultural programs should be listed.

**References:** There are numerous articles that can be attached to your maintenance standards. The goal is to educate golfers on the need for routine cultural practices and to justify rebuilding or

renovating certain areas of the golf course. Many reprints can be found on the USGA website at [http://www.usga.org/turf/articles/-articles\\_and\\_resources.html](http://www.usga.org/turf/articles/-articles_and_resources.html) or contact your local agronomist for additional resources.

**Other:** Each facility is unique and should decide the important topics to list in the maintenance standards. Such topics may include cart paths, the practice facility, pest management, irrigation, equipment maintenance and replacement, maintenance facility, tournament planning, "in-house" project procedures, budgeting processes, and The Audubon Cooperative Sanctuary Program.

With each of the playing surfaces, the standards should address objectives and procedures for "in-season" play as well as "off-season" conditions. For example, minimal quality standards or turf maintenance procedures are required for golf courses in northern regions during winter months, but the opposite occurs for courses in warmer regions.

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**STANDARDIZE WITH STYLE**

Maintenance standards can range from plain to highly professional, depending on the amount of time and effort invested. There is certainly room for individual creativity and style in using pictures, tables, and figures. With whatever style utilized, maintenance standards should be clear and concise, with a limit on unnecessary "verbiage."

Pictures significantly improve the quality and presentation of the maintenance standard document. A picture is worth a thousand words, and they can be added to inform members about unfamiliar cultural practices like verticutting, grooming, aerifying, topdressing, or root-pruning. Pictures also document the need for long-range improvement projects. For example, pictures of standing water in bunkers can help justify a bunker drainage project, or excessively worn turf on a practice tee suggests the need for tee enlargement. Aerial photographs add perspective and are especially helpful for explaining front, middle, and back tee rotation or putting green hole locations. Inserting digital pictures into documents is simple and can be done with minimal computer expertise.

Practice	Day of Week							April- Oct.	Nov.- March	Explanation
	M	T	W	T	F	S	S	Total	Total	
Change cups	4	4	4	4	4	4	4	28	28	
Practice green cups	1		1		1			8	3	
Clean ballwashers		2			2			4	4	
Sandpro	3	3	3	3	4	3		19	19	
Bunker touch-up	6	6	6	6		6	6	36	36	2 employees/3 hours
Bunker complete					16			16	16	4 employees/4 hours
Mow greens	16	8	16	8	16	8		72	72	4 employees
Mow greens & aprons	7	7	7		7			21	14	
84" mower	7	7	7		7			21	14	
Mow fairways	7	7	7	7	7	7		35	21	
5-gang rough	7	7	7	7	7	7		35	21	
Rough trim			7	7	7			21	14	
Spray greens				6				6	2	
Spot water	11	11	11	11	11			55	—	5 employees/4 hours
Sweeping	4	4	4	4	4			20	20	4 employees/8 hours
Irrigation maintenance	2	2	2	2	2			10	3	
Tee divots					20			20	20	
Fairway divots		16		16				32	32	

Fairway spot weed	6							6	6
Green syringe	2	2	2	2	2	2	2	14	—
Dew removal						8	8	16	16
Move ropes	3	3	3	3	3	2	2	19	19
								509	308
Daily work prep and break times — 10 minutes morning start-up									
15 minutes morning break									
5 minutes pre-lunch clean/preparation									
5 minutes post-lunch preparation									
15 minutes afternoon break									
10 minutes afternoon preparation									
60 minutes total × 5 days × 15 employees = 75 hours/week									
<i>Taken from "Required Maintenance Versus Available Labor" — Green Section Record 26(1):12-14.</i>									

Time studies of golf course maintenance practices are important components to include with maintenance standards.

Tables are also effective communication tools. In particular, time/motion studies are best presented in a table format. Most word-processing software, including Microsoft Word, are capable of formulating tables and graphs for documents. It may be necessary to hire a part-time secretary for a week or two or enlist the assistance of an individual with computer knowledge to perform these tasks.

Documents of highest quality are those that are professionally published.<sup>2</sup> Since developing maintenance standards requires time and effort, having them professionally published is worth the investment. In addition to rewarding the time involved, professionally finished standards are enjoyable to read. When completed, it is nice to have a manual that looks good and is easy to read.

**SUMMARY**

Like businesses, successful golf courses do not happen by accident. Each year USGA agronomists visit many golf courses of various sizes, shapes, and budgets. Successful clubs, regardless of budget, have a clear understanding of what they want to be and are characterized by effective working relationships between golf course management and golfers. Maintenance standards are employed on all golf courses, whether they are written or not. However, establishing a formal set of maintenance standards helps maintain proper expectation levels, allocates resources appropriately, and provides continuity in management objectives from year to year.

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