



Ordering and applying fertilizer in bulk applications saves money in the long run. Bulk purchases do require adequate storage space, which can be a disadvantage.

Maintenance on a Shoestring

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"A man who says something can't be done, should get out of the way of the man doing it."
 — Chinese proverb

GOLF COURSE maintenance costs are skyrocketing, according to the latest information from Pannell, Kerr, Forster (PKF), an accounting firm that has been tracking these figures for over two decades. In 1993, the average maintenance cost per hole in the United States was \$34,671 (Table 1). That's an average annual budget for an 18-hole golf course of just less than \$625,000. These cost figures vary by region, with the highest cost generally being in the far west and eastern regions, and the lowest cost being in the south and midwest regions. For example, in the midwest region, which has an eight- to nine-month golf season, lower labor costs and water expenditures reduced the average cost per hole to \$25,045 in 1992, or approximately \$450,000 for an 18-hole golf course. In the far west region, which has a 12-month golf season, higher labor costs, and expensive water, the average cost per hole was \$48,793 in 1992,

Table 1
1990 to 1992 Average Maintenance Costs per Hole in the U.S.

	U.S. Average Cost Per Hole	Far West Region Average Cost Per Hole	East Region Average Cost Per Hole	South Region Average Cost Per Hole	Midwest Region Average Cost Per Hole
1992	\$34,671	\$48,793	\$30,330	\$29,628	\$25,049
1991	\$30,870	\$37,945	\$27,991	\$28,737	\$23,529
1990	\$28,114	\$35,396	\$24,814	\$26,633	\$21,293

Source: Pannell, Kerr, Forster, 1993

or approximately \$875,000 at an 18-hole facility. The percentage cost difference between the highest (far west) and lowest (midwest) regions is almost 95%. Operational maintenance costs have been rising approximately 8% annually over the past 10 years, compared to an average inflation rate of approximately 4%.

Despite these numbers, many golf courses are being operated with budgets far below industry averages. These represent golf

courses that can get by with what can be termed *Maintenance on a Shoestring*. At what level does *Maintenance on a Shoestring* begin today? According to a fall 1994 survey of 16 USGA Green Section agronomists, annual golf courses with maintenance budgets of \$300,000 or less could be considered in this category. A *Maintenance on a Shoestring* designation does not necessarily mean that a course is without resources or has an inferior maintenance program, but

because of their chosen budget, they could be considered in this category. To make up for the smaller budget, it is essential to operate these facilities with superior management and expertise.

Golf was first played on sites that required very little maintenance. The first Scottish links courses were shaped at no cost by the wind, rain, and the burrowing activities of sheep. Golfers played on these sandy sites only where the grass grew best on its own, and sheep maintained the turfed areas. However, maintenance standards have come a long way since the days of sheep-kept grasses. Today's park-like surroundings require a reasonable budget and a labor force to keep them up to standard. If a course sets a budget of \$300,000 or less, certain priorities must be established to make best use of available dollars.

Following are the most often expressed concerns of course owners, club officials, and golf course superintendents regarding budgeting priorities at golf facilities with operational budgets at or below \$300,000. Basic ideas on operational budget preparation, establishing priorities, and opportunities for maintenance cost saving ideas will be shared.

Hire a Knowledgeable Golf Superintendent

From the informal 1994 fall survey of the Green Section staff, every agronomist agreed that hiring an experienced golf superintendent is a key to success at low-budget facilities. Experience counts, because with it comes knowledge of short-cuts and *how* to spend available money. A good superintendent can optimize the agronomic program, including product purchases, staff training, and chemical applications. Savings accrued because of sound decisions will more than make up for the higher salary required for an experienced individual in this critical position.

This qualified superintendent doesn't necessarily need to have strong academic credentials, such as a B.S. Degree or certified golf course superintendent (CGCS) status, but a combination of education and experience is a plus. The person should be a well-trained and experienced individual who will prevent waste, spend funds wisely, and make good daily decisions.

The Plan

The first step in predicting the maintenance costs of a golf course for the next fiscal year is to develop a plan. A meeting can be held between the golf course superintendent and the owner or green chairman, for example, to determine maintenance objectives, policies, and planned improvements for the next golfing season. Based on these priorities, the superintendent can estimate the

Table 2
1992 Major Operational Budget Line Item Percentages

Line Category	U.S. Major Line Item %	Far West Region Major Line Item %	East Region Major Line Item %	South Region Major Line Item %	Midwest Region Major Line Item %
Payroll Expenses & Benefits	60%	52%	67%	65%	66%
Course Supplies & Contracts	22%	25%	21%	20%	18%
Equipment & Irrigation Repairs, Water, Drainage System	9%	10%	8%	11%	7%
All Other Items	9%	13%	4%	4%	9%

Source: Pannell, Kerr, Forster, 1993

Table 3
Moccasin Bend Golf Club Maintenance Budget Categories, Showing Percentage of Each Budget Line Item

Categories	% Total Budget
Payroll Expenses	
Wages	51%
Taxes	5%
Benefits	3%
Operating Expenses	
Fertilizer & Chemicals	15%
Equipment & Irrigation Repair	10%
Shop Supplies	5%
Utilities	4%
Verti-Drain Expense	2.5%
Gas & Oil	2%
Miscellaneous	2%
Green Section Turf Advisory Service	0.5%

funds needed for each line item of the operational budget.

One public course that meets the criteria for *Maintenance on a Shoestring* is the Moccasin Bend Golf Course, Chattanooga, Tennessee. Owner Wesley G. Brown and golf superintendent Lee Roy Webb include these priorities in their plan:

- Level and intensity of maintenance
- Predicted fertilizer and pesticide use
- Anticipated equipment and irrigation parts
- New bunker sand
- Tee leveling projects
- Gasoline and other power costs
- Meeting and travel expenses
- Miscellaneous

With a plan, it is now possible for the golf course superintendent to establish a budget.

Establishing a Budget

The budget is the financial map for the golf course maintenance department. There are two types of budgets needed at a golf course: operational and capital. The operational budget details the anticipated expenses for the upcoming year. Most operational budgets are divided into two simple categories, termed payroll and operating expenses. Labor costs usually represent 50% to 65% of a budget. They generally include wages, payroll taxes, medical insurance, and other benefits. Operating costs make up the remainder of the budget, and can include a host of categories, such as fertilizers, chemicals, bunker sand, equipment and irrigation repairs, etc. Table 2 compares the U.S. major operational line item percentages with several regional averages from a PKF survey.

Capital budgets include expenditures for large equipment and items with a life expectancy of more than one year. Two categories, called capital improvements and capital expenses, may be included in this budget. Capital improvements improve the value of the golf course and could include a new irrigation system, bridges, tree plantings, new greens, maintenance facility, etc. Obviously, these items typically require large financial outlays. Long-range plans for five years or more are usually developed, setting priorities for these expenditures and establishing target dates for project completion, and are updated annually. Capital expenses usually refers to any new equipment purchases, but also can include office furniture, new computers, office lockers, and many other items. Buying a few new pieces of equipment annually, even if only a modest amount of money is available, helps to meet the long-range goals. It is better to *stretch out* equipment replacement by making a few key purchases every year, rather than getting hopelessly behind and eventually facing the need for significant expenditures.

The Flexible Operational Budget

Most golf courses operate on a *flexible*, rather than a *fixed* budget, which once approved cannot be changed. *Flexible* means the budget is not exact and is subject to change as the year progresses. Golf course superintendents strive to budget conservatively and not exceed planned expenditures for the fiscal year. However, anyone who has been involved in the golf business knows it is wise to be flexible with a maintenance budget. Line item categories cannot always be predicted. Some years' budget priorities sometimes have to be changed. For example, all of the bermudagrass fairways and tees winterkilled at the Moccasin Bend Golf Course in 1994, causing an unexpected sprig and sod expenditure of more than \$30,000.

Usually, the budget runs from January through December, although the fiscal year can run for any convenient 12-month period. Budget recordkeeping can be done easily today on a computer. Off-the-shelf spreadsheet or data base software, or custom software written for golf course operations, such as TRIMS, SCMS, Par-plus, or GCS for Windows, are popular choices for this task. Expenditures should be allocated to a specific line item and coded correctly. If a category has been overspent one month, an explanation can be included in the narrative. Also, management should never set a rule that if a category is below budget for a month, those funds are lost. Some golf superintendents are forced to spend money at the end of the month just to avoid losing it. Additionally, include only line items that relate to golf course maintenance in the



Employee training is critical in any golf course operation, but it is especially important where small staffs necessitate more independent work.

Table 4
Total Golf Course Linear Edging Lengths at the Royal Lakes Golf & Country Club, Flowery Branch, Georgia

Course Feature	Edging Length (linear feet)
5.1 miles of Cart Paths	53,856 linear feet
61 Bunkers	7,996 linear feet
Mulched Areas	2,673 linear feet
TOTAL LINEAR EDGING	64,525 linear feet or 12.2 miles

budget. Other line items, such as golf cart maintenance and repair, should be part of another budget. Table 3 is an example of a line item budget used at the Moccasin Bend Golf Club.

The High Cost of Mowing

"Mowing costs may be as high as 70 to 80% of the total budget at a low-budget course," according to Dr. Joseph DiPaola of the Ciba-Geigy Corporation. "Labor, fuel, equipment depreciation, and equipment costs all contribute to the total cost of mowing. This figure not only includes the actual mowing operation, but also the cleanup after mowing, which involves blowing or removing the excess clippings. This cleanup may involve just as much time as the actual mowing," says Dr. DiPaola. Applying a growth regulator, such as Primo, to reduce clippings and mowing frequency to primary play areas, such as green banks, fairways, tees, and secondary roughs, can save money.

This "liquid labor" saves money by reducing the need for mowing, clipping cleanup, edging, and mower cleanup. With less time spent mowing, it may be possible to increase time spent on other activities of your choice.

Significant mowing costs also can be associated with maintenance of steep slopes, bunker edging, curbing, mulched areas, cart path edges, etc. Hand mowing, string trimming, and flymowing also significantly increase total mowing costs. At the Royal Lakes Golf & Country Club, near Gainesville, Georgia, golf course superintendent Frank Siple has measured the total golf course linear edging lengths (Table 4). It came to a total of 12.2 miles of linear edging, but did not include trimming and edging around trees, which isn't done at this course. The use of non-selective herbicides, such as Roundup or Finale, or growth regulators to reduce trimming along these borders saves money.

Other money-saving tips for reducing mowing costs include:



Mowing requirements can be a high-cost line item in the maintenance budget. Minimize areas that require expensive hand maintenance.

- Allowing natural grassy areas to develop in out-of-play rough areas. However, give the golfers plenty of margin for error on fairways to keep play moving and *most* players happy.

- Reducing mowing acreage, such as around tees, pond banks, etc. Reducing frequently mowed fairway turf by contour mowing to reduce fairway area.

- Eliminating ropes and stakes, which slow mowing efficiency. Use other, more efficient traffic-control measures, such as 4-foot-tall movable indicator posts, permanent curbing, movable barriers, etc.

- Using rotary mowers to mulch leaves, twigs, and other debris.

- Naturalizing tee surrounds and carry areas to the fairways.

- Providing good drainage so that larger mowers can operate more effectively on fairways and roughs.

Judicious Use of Fertilizer Saves Money

One very important cost-cutting strategy is the competitive bidding of seed, fertilizer, and pesticides. Don't buy all materials from just one company. Bid sheets with the quantities of these items needed should be prepared. Many companies offer significant discounts by pre-ordering materials in bulk and paying early in the spring season. How-

ever, bulk purchases only work if an adequate storage building is available.

If need be, develop an annual supply contract, with delivery as needed. That keeps just one or two applications of pesticides on hand.

Bulk spreading of fertilizers, lime, and other services can save labor hours. Many low-budget courses contract all fairway and rough fertilizations and spring pre-emerge herbicide applications.

Fertilize the turfgrass only as needed, and base nutrient applications on annual soil test results. Concentrate on the major turfgrass nutrients, including nitrogen, phosphorus, and potassium, in the fertilization program.

Avoid costly *quick cure* products for what ails the turf. Instead, stick with a few simple programs that will help the grass grow.

Maximize Labor, Equipment, and Irrigation

Employee training is especially important at a low-budget course, since assistant superintendents usually aren't on staff to provide additional expertise and supervision. Invest in key staff employees by sending them to turf conferences, seminars, and turfgrass field days. Also, hire a qualified mechanic. Don't cut corners on this key staff position. Equip the maintenance staff with two-way radio communications to increase the efficiency of staff and equipment.

Purchase labor-saving equipment such as power bunker rakes, large gang units, and rotary mowers, triplex mowers, etc. To reduce wear and tear at some sites, lightweight five-gang mowers are preferred over large gang units. Regular yearly investment in new maintenance equipment is essential, even if only a modest amount. Daily maintenance equipment repairs and record-keeping will save money in the long run. It is the key to avoiding breakdowns and costly repairs. An 8' x 10' sign at the maintenance facility at Summit Chase Country Club in Snellville, Georgia, reminds employees

daily that "Preventive Maintenance Means Finer Performance."

A good, dependable irrigation system is a top priority. Monitor soil moisture to help establish irrigation schedules. Decrease electrical pump costs by irrigating between 11:00 p.m. and 6:00 a.m. Ask the power company about *load management* plans. These plans alert golf course superintendents about high power use days, and significant savings occur by irrigating at certain times specified by the power company. In most instances, only minor irrigation scheduling adjustments are required to participate.

Investigate the use of effluent water, but don't buy water without sizable help from the sewage district. Be sure that processing standards are high and that the supply can be turned off when the sewage plant is not operating properly. Set up *Irrigation Conservation Areas* and native landscape areas for water conservation. Use new, low-water-use turfgrasses where possible.

Reducing the Effects of Bunkers and Trees on the Course Saves Money

It is desirable to have a few well-placed bunkers, especially around the greens rather than in the fairways. Bunkers are very expensive to maintain. They are costly to rake, mow around, keep filled with sand, and keep well drained. Remove bunkers that impede traffic flow to key areas, and reshape bunkers so that it's more convenient to mow. Sod any sand bunker faces that wash out after rains.

Trees affect turfgrass growth by causing shade, restricted air movement, and tree root competition. Maximize morning sunlight and provide for adequate air flow at greens and tees. Remove trees and brush that interfere with grass growth, especially on the eastern side of tees and greens. To improve a poor turf-growing environment, remove low-branched tree limbs to increase mowing efficiency and air movement. Prune tree roots to prevent competition for moisture and nutrients. The use of shredded hardwood bark or pine needles under trees will reduce mowing, speed play, cover tree roots, and improve soil conditions for the trees. Periodic chemical mowing with non-selective plus preemergent herbicides, such as Roundup and Surflan, will help reduce weeds at mulched sites.

Conclusion

There is no established standard for a golf course maintenance budget. Tremendous variability exists in how costs and expenditures are categorized. However, implementing as many of these tips as possible will help your course save money on a tight budget. Careful maintenance planning can make a big financial difference for any golf course that lives by the standard *Maintenance on a Shoestring*.