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# CALCULATING COSTS

Is it better to buy a small mower at a cheaper price or an expensive large mower which will finish the job quicker? This article shows you how to calculate your costs.

by Heide Aungst, managing editor

**T**he scene goes something like this: A school system needs a new mower. The school board approves the budget for a 36-inch rotary. The landscape manager knows that a 72-inch rotary would more efficiently mow the football field, but can't explain why.

Budgets haunt even the best landscape managers. But they're a fact of life. Sooner or later most managers have to explain to a higher-up why a more expensive piece of equipment is more economical.

Bill Bedrossian, director of grounds

management for Servicemaster, says it's important to know what type of area you need to mow, before deciding what size equipment is needed.

"Look at how close the trees and buildings are and the total acres to mow," he explains. "For low maintenance areas, usually rotaries fit the bill. For open areas, get the biggest equipment."

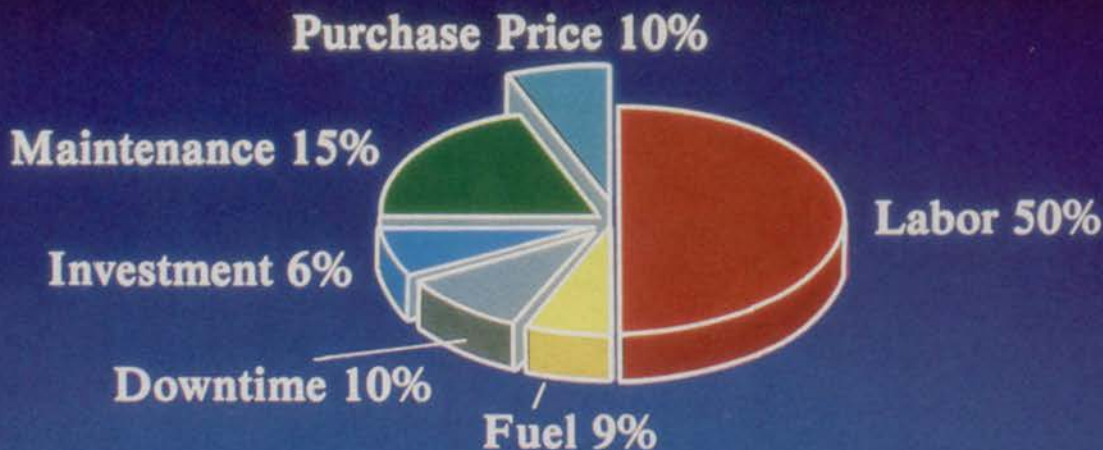
The Professional Grounds Management Society has compiled figures which take into account equipment size, mowing time, equipment cost per hour and per acre, and labor cost

per hour and per acre (see chart).

Labor costs are based on \$7.50 an hour with 25 percent added in for benefits, or \$9.38 an hour.

With this information, it's easy to figure out the most economical equipment to buy. For example, to figure the cost of mowing 150 acres with a 60-inch rotary: multiply total mowing cost (\$13.16/acre) times acreage (150) to get \$1974 per cut; that figure times cuts per season (28) to get \$55,272 per season. But with a 72-inch mower, multiply \$9.04 times 150 to get \$1356, times 28 equals \$37,968 per season.

## Total Mowing Cost by Component





## MOWING COSTS

Equipment Used	Mowing Time Hrs/Acre	Equipment Cost/Hr	Equipment Cost/Acre	Labor Cost/Hr. (7.50 + 25%)	Labor Cost/Acre	Total Mowing Cost/Acre
20" Rotary	4.70	\$ .99	\$4.65	\$9.38/hr.	\$44.09	\$48.74
36" Rotary	2.90	2.82	8.18	9.38	27.20	35.38
48" Rotary	1.60	3.95	6.32	9.38	15.01	21.33
60" Rotary	.91	5.08	4.62	9.38	8.54	13.16
72" Rotary	.58	6.21	3.60	9.38	5.44	9.04
70" Reel	.43	5.26	2.26	9.38	4.03	6.29
84" Reel	.25	5.52	1.38	9.38	2.35	3.73

### Comparative Example:

60" vs. 72" Mower on 150 Acres

60" 150A × \$13.16/Acre = \$1974/cut × 28 cuts/season = \$55,272 /season

72" 150A × \$ 9.04/Acre = \$1356/cuts × 28 cuts/season = \$37,968 /season

Difference \$17,304 /season

That's a difference of \$17,304 in just one season. In this case, it would be more economical to buy the 72-inch mower.

### Irrigation

When figuring costs for irrigation equipment, Bedrossian says the landscape manager must first ask these questions: Is dormancy acceptable? Can the grass variety be changed?

Then the landscape manager must look at all the costs involved. The annual ownership costs involve securing a water source (well construction, pond construction); conveyance costs (getting water from the source to where it will be used); pump cost; power unit cost; expense of the distribution system; special equipment (sensors, pipe); interest, taxes and insurance. The annual operating costs include water cost, energy, maintenance and repairs and labor.

An in-ground system costs \$804 per acre; agricultural gun with a three-inch hose costs \$872 per acre; while a traveling sprinkler with a one-inch hose costs \$1027 per acre.

"An in-ground system is less expensive in labor and saving of water," Bedrossian says. "In seven to eight years, you'll get a payback with an in-ground system."

### Aeration

"Aeration is one of the least expensive practices with the most benefit," Bedrossian says. The cost takes into

consideration going two directions.

The aerator costs \$1.05 per acre; the tractor to pull it, \$5.25 per acre; labor \$10.69, for a total cost of \$16.99 per acre.

### Fertilization

For soil balancing and fertilization, invest in a soil test first. It should cost \$3 to \$10. Keep in mind soil characteristics: physical, chemical and living.

Cost to physically balance the soil

*Aeration is one of the least expensive practices with the most benefit.*

—Bill Bedrossian

includes \$16.99 per acre for aeration; \$450-500 per acre for top dressing; and \$50-\$138 per acre for soil penetrants.

Chemical balancing practices include liming (50 lbs./1000) at \$35-60 acre or sulfur (4 lbs./acre) at about \$40/acre.

The cost of fertilization depends on the needs of the soil. "Use the proper product or you're wasting your money," Bedrossian says. "Be results-oriented."

The type of equipment used also makes a difference in the cost of fertil-

ization. A push-spreader has a labor and equipment cost of \$28.64 per acre. Add \$55 in materials for a total cost of \$83.64 per acre.

A tractor-mount spreader, on the other hand, costs \$7.69 in labor and equipment. With \$55 in materials, the total fertilizing cost per acre is \$62.69, a savings of \$20.95. "It doesn't take long to pay for a \$500 to \$800 cyclone spreader," Bedrossian says.

### Contract or in-house?

Weed control is an area where some landscape managers choose to contract out. A contract may raise the direct cost of an application, but could be a savings in other aspects. For one thing, a manager wouldn't need to worry about certification of employees. "Do you want to assume the liability or transpose the liability by contracting out?" Bedrossian points out. "Do you have someone who's certified?"

A wet application of broadleaf weed control done in-house costs \$21 per acre, while contracting it out would be \$45 to \$75 per acre.

A crabgrass pre-emergence granular application with a P.T.O. spreader costs \$66 per acre in-house. A combined spray costs \$65 per acre in-house, and \$75 to \$110 per acre contracting it out.

Bedrossian says that when figuring costs, keep in mind that it may differ from facility to facility. Costs mentioned here are a guideline. **LM**



# AGING GRACEFULLY

At Ohio University, the oldest institution of higher learning in the Northwest Territory, elderly trees help create a beautiful campus.

by Jerry Roche, editor

In 39 years at Ohio University, Dan Stright has seen it all. From floods that forced dormitory evacuations in 1964 and 1968 to a 1986 fire that devastated half the stands at Peden Stadium. From relocating a baseball field to mending severed gas lines.

The landscape at Ohio University, which dates to 1804, is a surprising combination of the old and the new. On the main campus, called the College Green, stands Cutler Hall, the first building of higher learning

in the Northwest Territory. Just to the rear of the building looms an aged sycamore, still apparently in perfect health.

However, areas surrounding the venerable College Green—the East, West and South greens—are in a constant state of flux dictated by varying enrollment and changing educational needs. And that means landscape-size headaches for Stright.

An example. Because of numerous and enormous shadows

cast by the tall trees, Stright once had a problem growing grass on the College Green. But no longer.

"Now, we buy what's called mushroom compost," notes Stright. "We buy 200 tons in the spring and spread it two inches thick over the College Green. It contains minerals, horse manure and peat moss. It doesn't smell very good, but boy it does make the grass grow."

Stright says the compost costs \$325 per ton delivered, but it positively affects both grass and soil.

Twenty tons of commercial 10-20-20 fertilizer are also purchased each year and applied in August "until we run out."

Another example. An area adjacent to the West Green through which the Hocking River flowed 20 years ago became intramural fields in the 1970s. The area has since been converted to a pair of practice football fields, and Stright is in the process of improving the low-lying land's drainage.

"I had to buy 2,000 tons of silt/sand topsoil to crown the fields," Stright says. "When the Army Corps of Engineers re-routed the river in the early 1970s, they buried all our good topsoil." Stright notes that, because of budget constraints, the fields will be crowned and drained but not completely tiled. He plans on installing turf-type tall fescue for its wear tolerance. "There'll be a lot of poundage on those fields, and tall fescues are tough once you get them going," he says.

## Turfgrass beaches

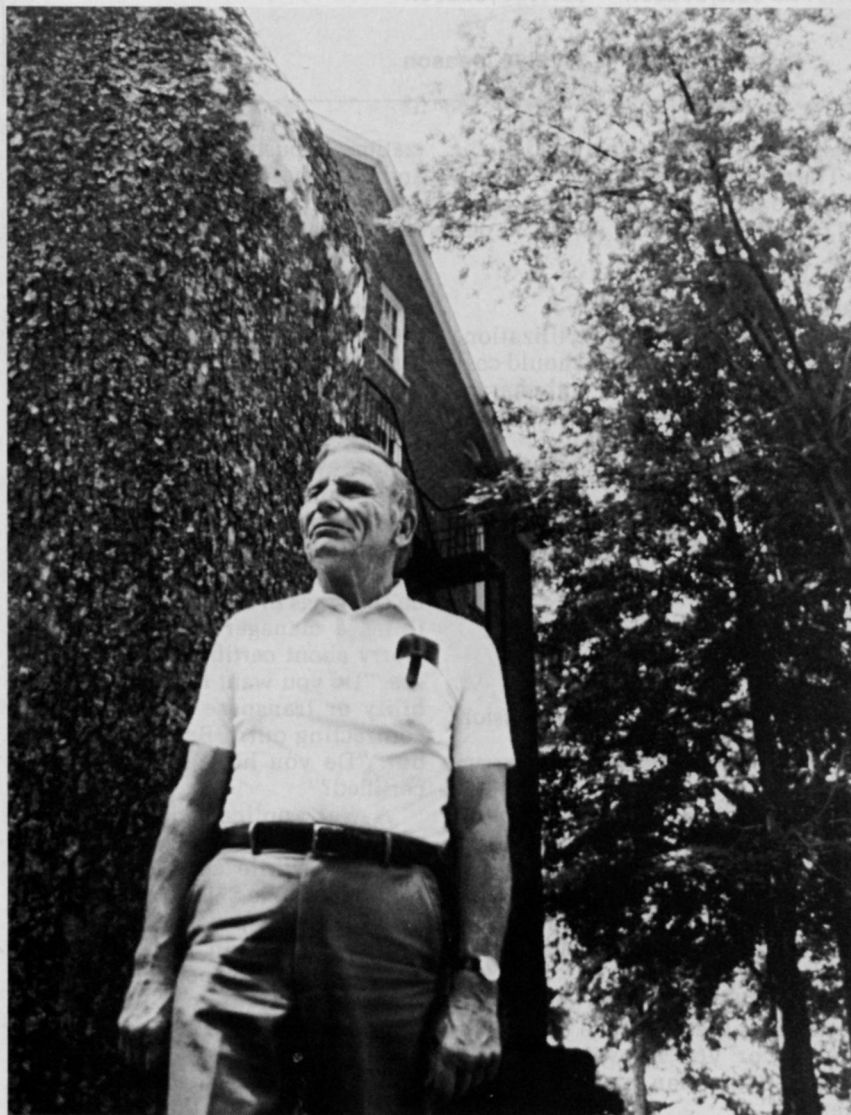
Along the re-routed Hocking is a 2,660-foot strip of turf which Stright calls an Ohio University-style "beach." (Students like to sunbathe on the south-facing stretch during sunny spring days.) This "beach" contains 175 donated cherry trees and a 150-year-old ginkgo tree.

Because of a new bike path running along the Hocking, problems were created on the adjacent nine-hole golf course. For safety purposes, four new greens had to be built last fall and some holes had to be realigned.

Unlike other golf courses around the country, the O.U. course has actually suffered from new construction. Originally a spacious, beautiful 18 holes, the course is now a short nine holes.

To "intensely manage" the rest of the 400 acres, the landscape crew consists of 27 regular employees, three supervisors and Stright. During the summer, as many as 30 students are hired. In the spring, Stright hires

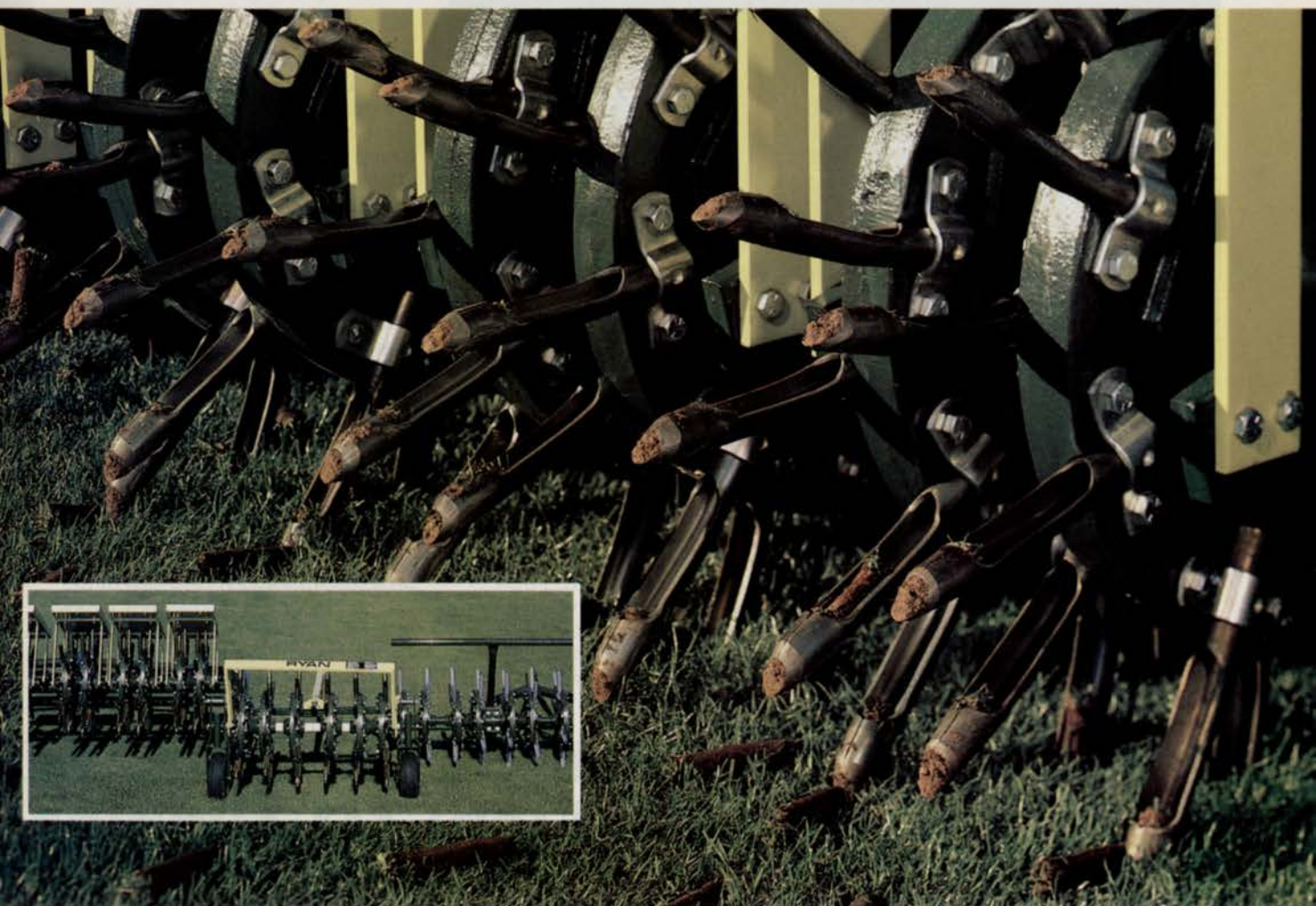
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Dan Stright at the trunk of a century-old (or more) sycamore on Ohio University's venerable College Green.



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SEPTEMBER 1987/LANDSCAPE MANAGEMENT 15





South-facing hills like this one near Scripps Hall have been terraced to minimize effects of the sun on the turf.

eight or nine "emergency" employees to prepare for graduation. And the university has a contract with a nearby workshop, which supplies retarded citizens to mow various areas.

Part of his funds come from an annual budget, but for purchases of special landscape materials, Stright relies on the Campus Beautification Fund, donations from alumni of \$2,000 to \$3,000 a year.

### Busy backhoe-ing

A full complement of equipment is necessary to tend this vast area, situated in the rolling hills of southeastern Ohio. The school owns about 20 Gravelly mowers with 40-inch cutting swaths, 10 Kut-Kwicks, a Gravelly Pro 60 with a 60-inch swath, four John Deere riders and two Gravelly riders. The school also uses 10 Ford tractors with three-bladed 84-inch rotaries whose blades must be kept sharp to be effective. (Stright just bought a new one this year. Some of the Fords still in use date back to 1965.) Also available are a Massey-Ferguson loader, a grader, a ditcher, trucks, pick-ups, a bulldozer and 30 or so Weed-Eaters.

Yet the most valuable piece of equipment is the backhoe. "We have to buy a new one every four years," Stright notes. "We have it out every damn day on something or other." The day LANDSCAPE MANAGEMENT visited, the backhoe was on the East Green digging up a broken gas line

into a dormitory. Digging alone is quite a problem.

"Places you dig, you run into lines that you don't know what the hell they are," Stright observes. "Most of this land used to be houses and just about everywhere you dig

you run into 'Athens Block' bricks." Athens, home of Ohio U., used to have its own brick manufacturer.

Kentucky bluegrass is the dominant grass on campus. But it gets reseeded with 500 pounds of a 49% bluegrass/30% creeping red fescue/21% ryegrass mixture each year.

### Going to the well

Stright is in the process of hooking the university's irrigation systems (Toro on portions of the College Green and Rainbird in Peden Stadium) into a series of wells. Trautwein Field, where the Phillies' Mike Schmidt once helped the baseball Bobcats to the College World Series, is already hooked to an adjacent well.

Stright, a member of the Association of Physical Plant Administrators, was awarded the O.U. Outstanding Administrator Award in 1986. He is proud of his accomplishments.

"The president (Charles Ping) gets a lot of compliments from students," he smiles. "While most state-supported schools couldn't get enough students this year, we had to turn students away. And part of the reason is because the campus looks so nice.

"At least, that's what the president said the other day." LM

## LANDSCAPE PROFILE

# FROM A(sh) TO Z(innias)

The campus at the University of Minnesota -Waseca is a horticultural smorgasbord. Students design and maintain most of the campus, learning the ins and outs of landscape management along the way.

by Heide Aungst, managing editor



Jerry Nelson: students help out

Most turf managers might call Brad Pedersen crazy.

"We like a golf green to come out with a snow mold problem," Pedersen says coolly. "We love it when it gets dollar spot and pythium."

Love dollar spot? Pythium? There's only one motive to the madness: education.

Pedersen is an associate professor at the the University of Minnesota Technical College-Waseca. His philosophy—as well as the school's—is to give the students one focus:

continued on page 22





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