

# Mower Efficiency: Properly Selecting the Right Mower for One's Needs

by Clover V. Shelton, Swanson Russell Associates

*Efficient: adj. 1. Acting or producing effectively with a minimum of waste or unnecessary effort. 2. Exhibiting a high ratio of output to input.*

When mowing a large number of different types of sports fields, groundskeepers often have a fleet of mowers to choose from upon walking into the storage shed. Is today the day for a large-deck pull-behind or a zero-turning radius mid-mount? What about the out-front or a walk-behind? The choices seem endless.

Most often, this choice is based on efficiency. When assessing efficiency of a mower, a groundskeeper often evaluates the following items:

1. Speed/maneuverability
2. Quality of cut
3. Lack of downtime
4. Multi-purpose use

## Speed/Maneuverability

Bill Faherty, Director of Parks, Recreation and Forestry in Chippewa Falls, Wisc., is in the business of managing sports fields including their newest softball complex, four soccer fields and a baseball field. In addition to the Department's two 60-inch deck, zero-turn mid-mounts, they also use a large utility tractor with a pull-behind, 11-foot mowing deck, an industrial walk-behind and a traditional belly-mount tractor for mowing.

When it comes to speed and maneuverability, Faherty raves about his zero-turn machines. "They are faster than anything in their category, as far as maneuverability, backing-up and moving around. We have a traditional belly-mount, but the zero-turn is way ahead," he said.



*Using the most efficient mower for a job will save time and increase the quality of your fields*

Terry Sheerer, manager of the grounds department at the University of Northern Iowa in Cedar Falls, also has to answer the efficiency question every day. He actively manages 300 acres of sports turf including 15 intramural fields as well as extramural playing fields for competition between colleges and universities. In addition, his crew maintains a football practice

field, a baseball and softball field, a women's soccer field and a high school football field, not to mention a golf practice driving range. Some intramural fields double as soccer and baseball fields.

Mowing each field an average of twice per week, Sheerer has a large fleet including a variety of mowers to



choose from. He uses large Jacobsen reel on the golf driving range. He also has an 11-foot pull-behind grooming mower for very large open spaces. "On other playing fields, where they play the actual games, we use the smaller out-front mowers with the 60-inch decks," he said.

Zero-radius turning mowers are often-used machines in his fleet, which includes two Exmarks and a Walker. Sheerer chooses zero-turn mowers for his softball and baseball fields as well as the practice football fields.

Sheerer speaks highly of his zero-turn machines, which all have smaller cutting decks. "They get around easier," Sheerer explains. "This is especially true in small areas.

Keeping the crew satisfied with the mowers is also an important consideration. "The only preference for our crew is the area they are mowing in," Sheerer explained. "If they are mowing a tight area, they like to run the zero-turns. A lot of area that we mow is right on top of the curbing where the zero-turns will do a lot nicer job. If they are mowing in an area that is fairly wide open, they would prefer to run the out-fronts."

#### Quality of cut

Especially on fields where the competition draws a crowd, the final look of the field is important to these maintenance professionals.

In Chippewa Falls, the Department adheres to high standards for their four-field softball complex. This is where Faherty's crew chooses zero-turn mid-mount mowers. "They do a fine job on specialty fields," Faherty explains. "We are running a top-notch complex and we want the grass looking great over time. We do not want to give up the nice grass over quickness. Our zero-turn mowers' cut is much better than the larger mowers."

Sheerer agrees, explaining, "Your smaller mowers seem to give you a better cut—and the appearance of the cut is important. They give us a nice striping effect."

Sheerer also is pleased that he can easily adjust the mowing height on his zero-turn mowers. "On soccer fields, they recommend 2 3/4-inches or 2 1/2-inches cut and some of our other areas, we may mow at three inches," he said.

Since Sheerer mows at regular intervals, he is pleased with the

mulching that his machines have offered. "We found in those zero-turns, and some of those other ones, that they do a pretty good job mulching," he said. "The mulching blade that we use and also the frequency in which we mow takes care of some of your mulching problem."

Due to this regular schedule of



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A mower's lack of downtime and its ability to be used in multiple settings increase efficiency.

mowing, Sheerer's crew seldom has to bag the clippings. "If we get into a fertilization period after a heavy rain and we cannot get on the field twice a week, we have to go back and run a sweeper on it," he explained. "But it is not often."

### Lack of downtime

Overall, Sheerer finds that reliability has not been a problem with most of his mowers, especially the Exmark and John Deere brands. "We've got very good local support for that. We do have these two new Exmarks which we purchased from an excellent dealer in the area," he explained. "He gives us great service. I like the mowers, in fact I am probably going to spec a couple more this year."

To Faherty, it is imperative that the machines are easy to learn. If not, employees are busy training rather than working. He has found that even though the zero-turn mid-



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mount mowers have different steering mechanisms than traditional mowers, he hasn't had a problem with training. "We use seasonal people and they seem to like them," he said. "The college kid can learn it and he likes it better than the steering wheel."

### Multi-purpose use

Sheerer devotes certain machines to specific functions. "A certain part of the fleet has to be special equipment," he said. "Our 72-inch mower is also used for snow removal. Our smaller machines basically are a specialty [for mowing]. Once fall comes, we put them away. I think it is important that we do invest in those types of things."

For Faherty's crew, each machine has a purpose. The large utility tractor with pull-behind mowing deck is used for the large open spaces of the soccer fields where quality of cut isn't as important. The department also

uses it for aerating and over-seeding and they are considering purchasing a broom attachment for clearing the skating rinks.

The traditional out-front with 60-inch cutting deck is also used for rotor tilling and blowing snow. Though his zero-turns also have available attachments, Faherty has changed his mind about using attachments with mowers. "Sometimes we buy equipment for everything and it does not last—it's just too much for them," he said. "If we want to mow grass, let's buy mowers. If we wanted to blow snow, let's buy snow blowers."

For these decision-makers, choosing the right mower for their sports fields has come down to a question of efficiency. Is the mower fast and mobile? Does it produce a high-quality cut? Will I have to deal with downtime because of breakdown or training? Can or should I use my mower for a number of purposes?

Faherty summarized the objective of efficiency: "The goal is always trying to cut more grass with less time. Labor is your biggest cost and you do not want a mower that is too big to do the job. We are always trying to match the mowers to what we have to do."

*Clover Shelton is a public relations writer for Swanson Russell Associates (SRA), a marketing communications firm in Lincoln, Neb. SRA serves clients in the turf, outdoor recreation and agriculture markets. [www.sra-marketing.com](http://www.sra-marketing.com) 402-437-6400.*

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# FIELD OF THE YEAR



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## McGill Field of Lebanon Valley College Earns College Baseball Field of the Year Honors

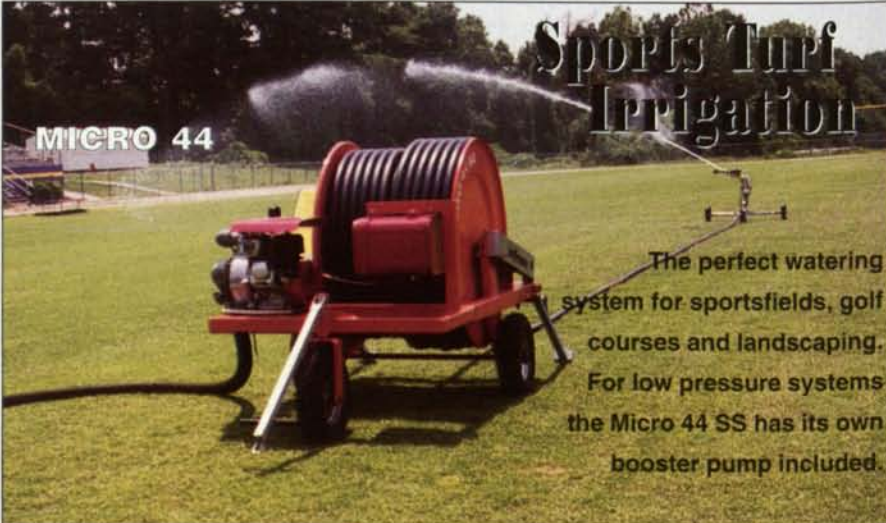
The vision of Lebanon Valley College President, G. David Pollick, was the driving force in the expansion of the college's athletic complex from approximately 20 acres to nearly 100 acres. The commitment to excellence of all those involved in the development of the complex and the ongoing maintenance of the new facilities earned McGill Field the STMA 2000 Baseball Field of the Year honors in the College/University division.

Kevin Yeiser, director of grounds and athletic facilities, for the Annville, Pa., college, says, "McGill Field was unveiled in the spring of 1999 as the cornerstone of our sports complex. Located about 10 miles east of Hershey in Pennsylvania Dutch country, the stadium stands on what was a cultivated farm field. Derck & Edson Associates of Litiz, Pa., worked with the college to design a baseball field that fits into its site with several natural features that make it unique.

"Both left and right field lines are bordered by tall hedgerows of trees which limit outside visual distractions. By terracing the playing field into the existing hillside, a bank of earth was left to form the edge of the stadium. This bank was faced with a two-tiered system of retaining walls built of dry-laid, interlocking, split-faced Versi-Lok concrete block. The retaining wall not only holds back the hillside, but also provides a striking visual backdrop for the game using a pattern created with custom-colored blocks. Down the right field line, one of the two bullpens is located on top of the retaining wall. The patterns and colors of the retaining walls were continued into the dugouts and bleachers and even into the crushed stone found



Kevin Yeiser accepts the Field of the Year Award at the National Convention in St. Louis



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The field is located on what used to be a farm field. The native top soil was removed during construction, then backfilled with topsoil augmented with compost.

at a local quarry for the warning track.

"Adding to the unique feel of the stadium is a dramatic pedestrian bridge that spans a major highway connecting McGill Field to one of the

parking lots on the complex. Rising more than 30 feet over the highway, cables attached from the bridge deck to two large towers provide the look and feel of a suspension bridge. Our coaches use this to great advantage, as visiting prospective student ath-

letes get their first view of McGill Field and the adjacent soccer stadium while looking down from the bridge deck. Extensive landscaping and a concrete walk that connects all 100 acres give a park-like atmosphere to the sports complex that enhances the entire community."

Lebanon Valley College invites community use of the athletic fields as well. McGill Field played host to spring and fall college games and practices, then added local high school, American Legion and teener games for a combined total of 131 events in 2000.

### Design and construction

That's a heavy schedule for the modified native soil field. During construction the native loamy clay topsoil was removed, the sub base prepared, and then backfilled with topsoil augmented with compost and worked to a depth of 8 inches. The field is designed with turtleback surface drainage. The outfield wall is 9 feet high at center field and 10 feet



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## McGill Field Maintenance Program

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Daily infield maintenance

### April-May

Mow as needed  
Fertilizer application (30 % WIN)  
Broadleaf control - three way herbicide  
Merit insecticide application  
Daily infield maintenance

### May-June

Mow as needed  
Irrigate as needed  
Monitor for disease and insects  
Weekly infield maintenance  
Aerate wear areas and seed (50% bluegrass/50% perennial ryegrass)

### June-July

Monitor for weeds - apply herbicide if needed  
Mow as needed  
Irrigate as needed  
Liquid iron application  
Weekly infield maintenance

### July-September

Mow as needed  
Irrigate as needed  
Monitor for disease and insects  
Liquid iron application  
Weekly infield maintenance

### September-October

Mow as needed  
Irrigate as needed  
Fertilizer application (30 % WIN)

Aerate wear areas and seed (70 % bluegrass/30% perennial ryegrass)  
Daily infield maintenance

### October - November

Mow as needed  
Irrigate as needed  
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high at the corners, with slanting surface drainage to the sides. The infield slopes in the same direction, but off the foul lines into the warning track from the bases. A series of inground slit drainage cuts across the outfield corners and is strategically placed in the infield to channel away excess water. A small drainage line runs immediately to the outfield off the infield edge.

McGill Field is the college's only field with an inground irrigation system. An automatic Rain Master controller regulates a series of Toro pop-up heads. Three quick connectors were installed, one behind the mound on the game field, and the others on either side of the foul lines. Water is supplied by two wells drilled during the construction process. A one-inch hose attached to the quick connectors can deliver 70 to 80 gallons of water per minute for hand watering the skinned area.

The McGill Field skinned area is a 5-inch depth of Home Run Mix with



The field was sodded with big roll bluegrass sod grown on soil similar to the amended soil profile

calcined clay worked into the top 2 to 3 inches and a quarter inch topping of vitrified clay. The red warning track material is a 5-inch layer of quarry stone dust fines placed over a

limestone sub-base. The pitchers mound, batters boxes and bullpens are constructed with clay.

Yeiser says, "We sodded the field

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*The bullpen in rightfield is located on top of the custom-colored retaining wall.*

with big roll bluegrass sod grown on soil similar to our amended soil profile by Hummer Turf Farms in Lancaster County. Hummer delivered the sod and supplied the instal-

lation machines and operators. Our grounds crew staff did the laying. We also supplied the labor for the sod installation on the softball and soccer fields.

completed. It was sodded in July of 1998 and ready for play that fall. McGill Field was sodded in August of 1998. The team used it for workouts that fall, with the first game in March of 1999. The grandstand was still under construction and our maintenance crew had completed placing the backstop netting just 5 hours prior to the first pitch."

### Getting it done

Much of the labor was supplied in-house. Yeiser notes, "Besides all the work of our grounds crew, our other facilities service department personnel worked on the grandstand, scoreboard and dugouts. Our carpentry staff and some of our local contractors worked on the dugout roofs, and bat and helmet boxes. Obviously, we saved on costs, but we also gained an incredible commitment to quality workmanship and a sense of pride and ownership throughout the college and community."

Yeiser grew up in the green industry helping in his Dad's landscape and nursery center. After establishing and running his own landscape nursery and garden center, he sold the business in 1982 to accept the Director of Grounds position. He classifies himself as "notorious" for picking up ideas from others and is quick to credit his networking resources. He also credits the cooperation of the coaching staff in preserving field quality.

The maintenance program as developed by Yeiser, and carried out by Keith Evans, Athletic Field Forman, focuses on safety and playability for all field users. A staff of two full-time personnel, two part-time personnel, and two summer college students are responsible for maintaining the entire sports complex, including the landscaping.

During the regular season the infield is dragged daily and clay is added to mounds and batters boxes as need. The infield is edged once a week and swept daily during the season. The warning track is edged weekly. Athletic field turf throughout the complex is maintained at a 1-1/4-inch height year-round. Fertilization is

"From 1997 to 2000, we installed first the Soccer Stadium, then McGill Field, then the Softball Stadium. Intramural fields, 2-1/2 football practice fields, as well as soccer practice fields were seeded. We also added a physical therapy center and field house with locker room facilities. We developed a lake and a smaller pond with water features and fountain and our field hockey stadium is going up now.

"Since the soccer team lost their varsity field to all the construction, that was the first new field to be

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*By supplying most of the construction labor from in-house sources, the college gained a high level of pride for its new field.*

based on soil test results, with a total of 4 pounds of Nitrogen per year, applied to fit the turfgrass growth cycles.

The college team begins training as soon as weather permits, with the spring season running from mid-March to May. McGill Field will be

hosting the League Championships in 2001, in early to mid-May. Then the high school teams move in until late June, ending their season with the championship games. From June into August, the Legion, Junior Legion, teener and adult leagues take the field. The student body returns

in late August and team field use runs from then into October.

Because of the packed schedule, major field renovation is relegated to October and November. This leaves the field in top condition to start the use cycle the following spring.

Yeiser challenges all the campus crews to think of one thing at the end of the each year that can be done to improve things. He's constantly reviewing the maintenance program in search of efficiencies. He says, "This could well be the best field many of the athletes that use our facilities will ever play on. We're committed to continually raising the bar on the standards of excellence to provide them with optimum playing conditions."

*Steve and Suz Trusty are partners in Trusty & Associates of Council Bluffs, Iowa. Steve is Executive Director of the Sports Turf Managers Association.*



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# Sports Field Maintenance with Reels and Rotaries

by Dale Getz, CSFM, The Toro Company

The art and science of sports field maintenance requires the expertise of a knowledgeable turfgrass manager along with the care and dedication of the entire grounds staff. Previously, as athletic facilities manager at the University of Notre Dame, I have experienced maintaining fields for some of the best athletes, the most discriminating coaches and the fans, including the television audience. Selecting the appropriate mowing equipment to maintain high-quality, safe and aesthetically pleasing fields requires knowledge of turfgrass growth, understanding mowing techniques and knowing the field specifications

for the sport.

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An understanding of the physiological aspects of grass is essential in turf maintenance. During my 17 years at Notre Dame, one of the biggest agronomic challenges was the diversity of fields I managed.



Ready for game time! The Notre Dame Stadium field awaits the fans. Photos courtesy: Dale Getz

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Each field had its own soil characteristics, species composition, microclimate and nutritional requirements. Each field, therefore, had to have its own personalized management plan. For example, the football stadium was a sand-based field requiring small amounts of nutrients spoon fed frequently to reduce leaching. The soccer complex was a clay loam with a solid clay barrier about 18 inches below the surface. The field had more nutrient holding capacity (CEC) but was very difficult to manage under wet conditions. The remainder of the nearly 80 acres of sports turf at Notre Dame fell somewhere in between.

Remembering what we learned in science class, all living organisms are made of small units called cells. Cell division and cell enlargement result in an increase in the size of the plant. As the cells at the tip of a root actively divide and then elongate, the root grows deeper into the soil. All shoot growth, on the other hand, is initiated at the crown or the base of the plant. If the crown is injured, the plant may not recover from the damage; therefore, mowing at extremely low heights of cut can be injurious or even cause turfgrass death.

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