

WHEN YOU THINK OF EFFICIENCY and how you manage your athletic fields, what comes to mind initially? Certainly you would think of saving money and maximizing resources. Even before your budget was reduced over the past year, you and your employer were likely conscious of ways to be more efficient with your labor force and your equipment. It's likely you also were reviewing your materials budget and use of water as well.

Years ago, as I was finishing up my slow pursuit of a college degree, I worked for a few months as a waiter at a large, busy restaurant. I had good weekend shifts and the money earned was quite useful. After 3 months, I had learned two significant things: I had no desire to ever work in a restaurant again and, more importantly, the value of constantly thinking ahead to get the job done. I stress the same principles for my crew. If you are mobilizing yourself to get home plate done, bring everything you need with you in the cart one time. For instance, bring clay with you that has different degrees of moisture in it, to get the work done more efficiently. You want to have some moist, medium and dry clay on hand to make adjustments for weather conditions. Every extra trip back to the shop may waste five minutes or more, so think ahead.

You know that within your budget as a turf manager, you have a finite number of hours that your staff can work. The people working for you are clearly your most important resource. To get the most out of your staff, understand that skills and personality can vary a great deal. This is critical when giving out work assignments. Some people excel at working on their own. Others tend to need a partner to be comfortable and meet your expectations. As a manager, strive to put your staff into situations where they will succeed. One basic principle from labor sociology concerns triads. Workers in groups of three tend to have more conflict and diminished productivity. Focus on giving work assignments and projects to individuals or pairs to maximize productivity. Remember, when employees are consistently given tasks in which they can succeed, they will be productive and motivated.

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In the future, as you get the opportunity to specify and lobby for new equipment, try to convince the decision makers that spending more on capital expenditures can improve efficiency. One season of using a 100-inch wide five-plex instead of a tri-plex reel mower and you will be amazed at the increase in productivity, as well as the improved density in your turf from more frequent mowing. For baseball, look at infield tractors that have quick adaptability. Any machine that allows you to easily change attachments (i.e. nail drag, finish rake, box grader) will be well worth the higher purchase price. Buying a one-dimensional infield tractor saves you a little money, but in the long run it will hinder productivity.

When you prepare your maintenance plan for a given week, think about factors beyond events that will cause you to make adjustments to your schedule. Understanding weather patterns at least two to three days in advance can greatly improve your efficiency. Again, it comes back to thinking ahead. Monitoring the weather accurately can save you money on painting your fields, watering them and on labor. Making adjustments in your mowing schedule around weather can greatly enhance efficiency. Mowing fields a day earlier can be more efficient than doing so two days late. Longer turf means slower mowing and decreased productivity.

What about offseason maintenance of baseball and softball fields? Perhaps your resources are so limited that you are unable to do any work during the fall season on these fields. Anywhere the ground freezes at all, I would be very concerned with postponing maintenance completely until March. Is it more efficient to do some routine maintenance in the fall as time permits, or would you rather leave it all until early spring, when weather may not be your best friend? Remember, no one can give you all the answers. The goal is to get you, your crews and your employer thinking about how to be more efficient in your specific situation.

Tarp all of your game mounds! If you remember anything from this article, it's TARP YOUR MOUNDS. this: Committing resources in your budget to purchase mound tarps, and ensuring they are managed effectively, will greatly improve your efficiency. On a baseball field, the mound is equivalent to the transmission on a car. It is that important, at all levels of play. Simply put, from a baseball perspective, a bad mound equals a bad field. Decent mound tarps are affordable and one person can place them or remove them quite easily. By tarping every day and night, you accomplish two things. First, you keep rain or irrigation off your clay. Second, you retain moisture in your mound when conditions are dry. There are so many good clay products available to us today. The key to all of them is maintaining a consistent moisture level, so your mound is safe and durable.

Once your mounds are on a good program, think about ways to improve your baseball fields even though your budget is being reduced. In high school, when I wasn't pitching I played right field. Supposedly, an old creek ran under our outfield before it became a sports field. In spite of it being in sunny California, I spent most of March and April in muck out there. Although it was wet, it was safe enough for us. Later in life, I discovered that I was playing on what we call native soil. No big deal, because in baseball as much as 70% of the game is played in the infield. As long as your outfields are safe, don't lose any sleep if they are not perfect. Focus your resources on the infield. Look at it this way: Imagine you have a complex with five baseball fields, each with 100,000 square feet of turf. The infield turf is just less than 8,000 sq. ft. Of your 500,000 sq. ft. of turf, about 8%, or 40,000 sq. ft., is in the infield.

You are looking for ways to streamline your operations. To give a specific example, consider this scenario. You like to apply granular nitrogen and potassium at equal rates. Perhaps you use a product with a 19-



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3-19 NPK ratio. To meet your new budget, you must reduce your annual fertilizer budget for the five-field complex by 20%. To do so, you cut back your total N/K output in the five outfield and foul areas (460,000 sq. ft.) from 4lbs. N/K to 3lbs. N/K annually. By doing so, you still have enough room in the budget to apply 4.5lbs. of granular N/K to the infield each year. You meet your budget goal, while increasing the annual N/K on your infields by 12.5%.

As much as time allows, try and focus resources on areas of stress and importance. Goal areas on soccer fields and baseball infields need more management and fertility to withstand the demands of increased traffic. For instance, when I apply granular products to the infield, I sometimes set the spreader to apply the products at half rate, and then apply the product in two directions. To finish I make one extra pass between the mound and home plate. Wear and traffic between the mound and plate leads to turf that sometimes needs a little extra boost of N and K.

How can your annual fertility plan increase efficiency and produce a better field? Consider the role of late fall fertilization and how it impacts your 12-month maintenance cycle. On any cool-season baseball field, you want to go into winter strong, but not overly succulent, with your turf. The importance of a late fall fertilizer application cannot be underestimated. First, late fall potassium will help strengthen your turf going into the harsh winter months. Second, late fall nitrogen will promote increased storage of carbohydrates and benefit root development. By using a blend of N sources (quick, medium, slow) in late fall, the carbohydrates needed to start spring growth will be stored for you. This will mean in early spring, you are in position to begin growing and can feed your turf judiciously. Being able to avoid a heavy spring N application will be more efficient, as you steer clear of surge growth and the increased mowing demands that come with it.

Finally, what about water? It's not always free and in some places is pretty scarce. You know that your infield dirt needs water to play well and be safe. What is the most efficient way to water dirt? If you only have the resources to water your dirt once a day, try and find time either early in the morning or after dark. You avoid the heat of the day and evaporation by watering early or late, and have a better chance at those times of getting water to move down through the soil profile. At the STMA Conference, you can see new products and talk to irrigation experts. By investing in a trip to the conference and learning about new technology such as Evapotranspiration monitoring, your water efficiency will improve. In conclusion, think ahead, plan intelligently . . . and tarp your mounds.

Larry DiVito is the Head Groundskeeper for Target Field, the new home of the Minnesota Twins that opens next spring. He is also a member of the Sports Turf Managers Association's Board of Directors.



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NCAA Athletic Department Sustainability Practices Survey Report

THE PURPOSE OF THIS RESEARCH was to gain insight into the sustainability strategies, practices and perspectives within Athletic Departments at NCAA Football Bowl Subdivision (FBS) universities (formerly known as Division 1A). The survey was conducted from April 10 to April 23, 2009 with the 119 FBS universities as part of a graduate course I took at Harvard.

Participation was exceptional: 97 out of 119 FBS universities (81.5%) answered the survey.

As of May 1st, 2009, more than 620 American university Presidents, representing nearly one third of U.S student population, have signed a pledge to develop an institutional-wide action plan for becoming climate neutral. Nearly three out of four universities report that campus-wide sustainability initiatives are a "very high" or "high" priority. The Athletic Departments at these same FBS schools are, to a degree, lagging behind with less than half reporting that sustainability initiatives are a "very high" or "high" priority.

According to the survey, only 10% of FBS athletic departments have developed a strategic Sustainability Plan with short- and long-term goals. Less than 10% of the surveyed athletic departments are currently measuring or planning to measure the athletic department's greenhouse gas (GHG) emissions, an essential step in prioritizing GHG reduction strategies and evaluating the progress of a sustainability plan. While 80% of athletic departments have implemented "moderate" or "extensive" recycling initiatives, less than 5% are measuring recycle rates and setting recycle rate goals for all operations of facilities and events. Encouragingly, over 15% of the athletic departments are now actively considering the development of a strategic Sustainability Plan, 13% are planning to measure recycling rates and set goals, and more than 75% say that the emphasis on environmental programs is increasing.

University athletic departments face unique sustainability challenges which are often not fully addressed in campus-wide sustainability plans. The overall environmental impact of sport facilities and sporting events, particularly the greenhouse gas emissions associated with team and fan travel, and food and vendor supplies, is largely not being quantified. Fan travel alone is a potentially significant GHG contributor. Over 37 million fans attended NCAA FBS football games in 2007. Attendance at 2007 NCAA Division I basketball games (325 schools - men's and



Top: UNIVERSITY OF COLORADO, courtesy of Jason DePaepe, CSFM.
 Bottom: THICK CUT SOD from Graff's Turf Farms, Ft. Morgan, CO.
 Background image: RUSS CHANDLER STADIUM at Georgia Tech, won the 2008 STMA College Baseball Field of the Year Award.

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women's combined) exceeded 32 million. On average, FBS universities support over 20 intercollegiate sports per school; the overall environmental impact of NCAA sports programs is not being measured and is therefore unknown.

Along with unique sustainability challenges, athletic departments have unique sustainability opportunities. Visionary universities are recognizing that by developing a comprehensive sustainability program in the athletic department, they can leverage the

The overall environmental impact of NCAA sports programs **is not being measured and is therefore unknown.**

strong brand power, visibility and influence of their intercollegiate sports programs, differentiate their schools, and make meaningful environmental improvements. Athletic departments can greatly benefit from collaborative sustainability initiatives with student-



athletes, teams and the increasingly environmentally-aware student body. Eco-efficiency cost savings are only part of the returnon-investment calculation. Importantly, new revenue opportunities exist through specific fundraising/development for athletic department sustainability initiatives, corporate sponsorship of green programs and green advertising.

Professional sports teams

For a previous graduate-level research project, I conducted a similar sustainability survey among executives from North American professional sports teams (Major League Baseball, National Football League, National Basketball Association and National Hockey League). Of the 122 professional sports teams in the NFL, NBA, NHL and MLB, 79 teams participated in the May, 2008 survey.

Developing a Sustainability Game Plan

1) Athletic Department leadership should be educated on sustainability issues and committed to the cause. Executive-level leadership and responsibility for departmental sustainability initiatives will be the greatest factor in success.

2) Form a cross-functional "green" team within the Athletic Department. Consider representatives from facilities, events, business admin, development, teams, corporate sales, public relations, faculty, campus-wide sustainability team and student-athletes. Encourage athletic department representation on campus-wide sustainability team to leverage expertise and to coordinate programs.

3) Develop a Strategic Sustainability Plan for the Athletic Department with short and long-term goals, business analysis, and organizational and staff requirements. Clearly define responsibilities and integrate goals into performance metrics.

4) Measure the Athletic Department's greenhouse gas emissions and other ecological impacts (i.e., water usage, waste). Prioritize initiatives based on environmental impact, return on investment and resources. Set quantitative reduction goals (i.e., GHG, Water use, waste, recycle rates) and time-lines. Embrace transparency.

5) Assess fan, employee and student-athlete interest in environmental issues via surveys, and focus groups.

6) Assess new revenue opportunities: fundraising/development for sustainability initiatives, corporate sponsorship and green advertising.

7) Actively engage athletic department employees, student-athletes, teams and student body in environmental initiatives. Regularly communicate to stakeholders.

8) Be "authentic." Avoid any hint of greenwashing. Be forthright about your eco-faults.

9) Create active and visible green initiatives that continuously "touch" fans. Big splash announcements without ongoing development and visibility of the green program will be largely ineffective.

10) Aim to stand out—differentiate your program. Still plenty of opportunities to be "the first athletic department that..."

Survey bias

1) Athletic Departments that responded to the Survey may be the "greenest" organizations. Contacts were encouraged to respond even if there had no green program or they were just starting out. It may be that the athletic departments that have the most advanced green programs would be more eager to respond and want the results. And yet, an athletic department that has yet to develop a green strategy may also be likely to respond in order to receive the survey results.

2) Individual contacts within the organization may be more likely to be the most environmentally-friendly and answer questions with a pro-green bias.

3) Individual contacts may not understand the university's overall environmental strategies and plan. 96 out of 97 the survey respondents were Associate or Assistant Athletic Directors, Facilities Directors, Facilities Managers, or Sustainability Managers. 90 out of 97 respondents were from within the Athletic Department; the remaining 7 were from campus-wide departments. More than 8 out of 10 respondents expressed an opinion on key-decision makers' view on profitability and fan loyalty considerations, an indication of the respondents' knowledge of athletic department strategy. However, survey respondents may not be knowledgeable of the university-wide sustainability strategy or practices (e.g., greenhouse gas inventory). Only 16% of the survey respondents indicated that their President had signed the American College and University Presidents Climate Agreement whereas 61 out of 119 (52%) of Presidents of these schools have signed the agreement

4) The survey instructions specified only one response per university. The survey software prevented an individual from submitting more than one response from the same computer. It was possible for an individual to forward the link within the organization presenting the possibility of multiple responses per team. However, the initial email and survey instructions emphasized the importance of a single responder per university. Plus, there were no two people from a university who requested results.

5) Comparisons with the survey responses to the Professional Sports Survey are for identical questions in both surveys except for responses to the question about developing a sustainability plan. In the Pro Sport Survey, it was asked whether the organization was integrating green plans with business plans which typically include defining a strategy and goal setting.

In the spirit of 100% transparency, I am providing a link to the full survey results - all questions, unfiltered answers and comments. It takes very little time to review the results and assess where your organization stands versus the leading programs. For full access to survey results, including all respondent comments, please click on: 2009 NCAA Athletic Department Sustainability Survey Results

Mark McSherry is a Harvard University graduate student who holds a Master's certificate in sustainable design from Boston Architectural College. This edited version of his May 2009 report was reprinted with permission. Although professional sports organizations and university athletic departments have different organizational missions and goals, it may be of interest to look at and compare some of the survey results.

Sustainability Survey Results

NCAA Athletic Departments**

Professional Teams***

Organization has developed or is actively planning to develop a strategic sustainability plan*

25.0%

72.2%

Key decision makers have a "strongly positive" perception on implementing environmental initiatives

33.3%

55.7%

Organization is currently measuring or firmly planning to measure greenhouse gas emissions (carbon footprint)

8.8%

46.8%

38.0%

Key decision makers say that environmental programs will "slightly increase" or "significantly increase" profitability

15.8%

Key decision makers say that environmental programs will "slightly increase" or "significantly increase" brand loyalty.

30.2%

60.8%

Organization wants to collect more information on fans' concerns for environmental issues.

37.9%

83.6%

"Slightly concerned" or "very concerned" that environmental programs will distract from main goals of organization

43.5%

26.6%

* See comments on survey-to-survey comparisons in "Discussion of Survey Bias" below.

** NCAA Sustainability Practices Survey conducted April, 2009; 97 out of 119 FBS universities responded. Survey error: +/-3.6% at 90% confidence level.

*** Professional Sports Sustainability Practices Survey conducted May, 2008. 79 out of 122 professional teams responded. Survey error: +/- 5.5% at 90% confidence level.