Transitioning from student to assistant sports turf manager

MANY STUDENTS working on sports fields while in college are often preparing themselves for work as a professional sports turf manager once they graduate. Some of these individuals will transition from student to assistant sports field manager right out of school.

Making a smooth transition will be determined by the individual's knowledge of subjects such as basic turfgrass management, soils, all aspects of pest identification and control and basic turfgrass mathematics to name a few. Also, experience as a student worker on sports fields, intramural fields or summer internships on sports fields will provide invaluable experience that will aid in making successful transition from college student to an assistant sports turf manager.

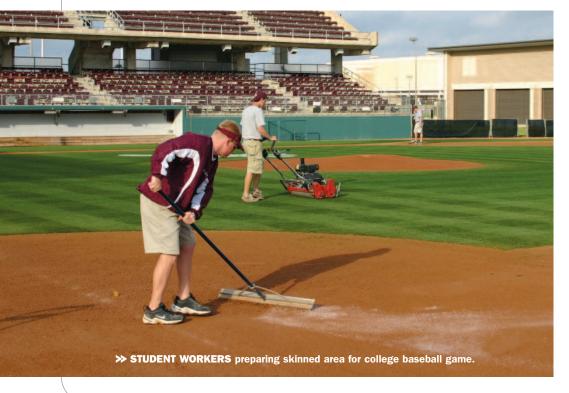
A frequent comment I often hear from sports turf managers is the lack of basic mathematic skills by some of the young students entering the profession [Editor's note: see "Math 101 for sports turf managers" on p. 16 in our Feb. 2009 issue]. I should note that this problem is not unique to sports field management. Assistant sports turf managers are often in charge of applying fertilizers/pesticides on the fields or they are in charge of supervising the application of these products. It is critical that this person be able to accurately calculate the amount of material needed for each application. Under application of fertilizers generally results in poor color, growth and recovery, while under application of a pesticide usually means poor control.

On the other hand, over application of these materials can result in severe injury to the turfgrass and in some cases loss of turfgrass on the field. We have all heard the horror stories of turfgrass managers being fired due to the misapplication of either fertilizers or pesticides. Along with being able to calculate proper rates, being able to correctly calibrate sprayers and spreaders requires basic mathematic skills. In many cases, the misapplication is due to improper sprayer or spreader calibration and not miscalculation of amount of product required.

It is very important that students graduating and entering the profession have a good understanding of mathematics and especially the basic mathematics of turfgrass. To find information on turfgrass mathematics, just Google basic turfgrass mathematics and you can find some very good books on basic turfgrass mathematics as well as Extension bulletins dealing with the subject.

A comment often heard by new employees in the sports field profession is, "I wish I had majored in sports field management while in college." While having a degree in basic turfgrass management doesn't automatically mean success, not having a degree in turfgrass management doesn't mean you can't become a successful assistant sports field manager.

Some of today's most successful sports field managers did not major in turfgrass management while in college and in some cases, never attended college. However, most of these individuals will tell a young college student entering the profession that the more basic turfgrass maintenance knowledge they obtain while in school and the more turfgrass work experience they obtain while in college, the easier the tran-





sition will be from college student to assistant sports field manager.

As mentioned above, gaining work experience on sports fields while in college is a very important part of successful transition from student to an assistant sports turf manager. While attending school, try to secure employment on the sports turf maintenance staff, intramural staff or even on the grounds/landscape staff. These jobs will provide invaluable experience for future work in the profession.

Most schools with a turfgrass management curriculum will assist their students in obtaining summer employment as an intern. My recommendation would be to sign up for as many internships as possible while in school. If possible, vary the type of sports fields you work on as an intern. While your goal maybe to become a sports turf manager in baseball, you never know what the future will bring. Again, the more varied work experience background you obtain while in school, the greater chance you will have in becoming successful. While working as an intern, don't be afraid to ask questions. As interns, you will be working with some of the more knowledgeable and experienced individuals in sports turf management, so this will be a great opportunity to learn from the experts.

"Soft" skills important

Good communication and personal management are some more key skills needed for making the transition from student to assistant sports turf manager. A key trait found in most successful managers is their ability to effectively communicate with their crews as

well as with their owners or bosses, players and in some cases the general public. Managers that can effectively communicate their needs to produce a healthy, safe sports field for the team is more likely to get the staff, equipment and supplies needed to produce the desired product.

Managers who cannot effectively communicate are generally going to have trouble obtaining the staff, equipment and supplies needed to be successful. Another problem some new assistant sports turf managers face is getting older, more experienced employees to listen to them or to respect their knowledge and experience. Again, effective communications will allow the new assistant manager to obtain the respect of these older, experienced employees in a much shorter period of time.

A new assistant sports field manager should have the basic understanding of how to develop a budget for their facility. I have listened to several sports turf managers discuss the tremendous problems they had the first time their boss/owner asked for next year's budget. Some of the more basic information required for developing a sports field budget include; total salary/benefits for all employees, equipment maintenance and repairs, fuel, fertilizers/pesticides, paint for logos and striping fields, irrigation costs such as cost of water, electricity and irrigation equipment repairs, cost for seed and/or sod to renovate fields and overhead costs such as buildings and utilities. While in school, be sure and take the basic business management courses that generally offered by most col-

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leges. Also, some schools offer turfgrass business management classes as part of their turfgrass programs. These courses will provide valuable information on how to develop a budget.

Possessing a good work ethic is another key trait individuals hiring assistants look for in college graduates entering the profession. Managing sports fields not only requires long hours, but often can require 7-day work weeks. Owners or managers hiring new assistants are going to be looking for individuals who are willing to put in the long hours required to produce a healthy, safe playing surface for the players. Individuals lacking a good work ethic are probably going to struggle with becoming successful in this industry.

New assistant sports turf managers are often overwhelmed with everything they need to know to get the job accomplished and in some cases lack the knowledge to know where to get help. When needing assistance, don't be afraid to call other sports field managers. One of the things that has always impressed me about the sports turf profession is the willingness of professionals to assist fellow managers, particularly new managers.

Other means of getting help is to join professional organizations such as the national Sports Turf Managers Association, state chapters if available and state turfgrass associations. Also, many state colleges and universities have turfgrass teaching, research and Extension personnel on staff. These individuals can provide valuable help. Most young people today are very knowledgeable in the use of computers; new managers can go online and find some great university turfgrass websites as well as commercial websites dealing with sports turf management.

Transitioning from a college student to an assistant sports field manager can be a very rewarding experience. The more educational experience you have in turfgrass management and the more work experience you have in sports turf management while in college, the easier it will be to make this transition.

Dr. James McAfee is the Extension Turfgrass Specialists for the Texas AgriLife Extension Service in Dallas. In 2006 he received STMA's Dr. William H. Daniel Award for his long-time support of the association.

What you need to know about modern running tracks

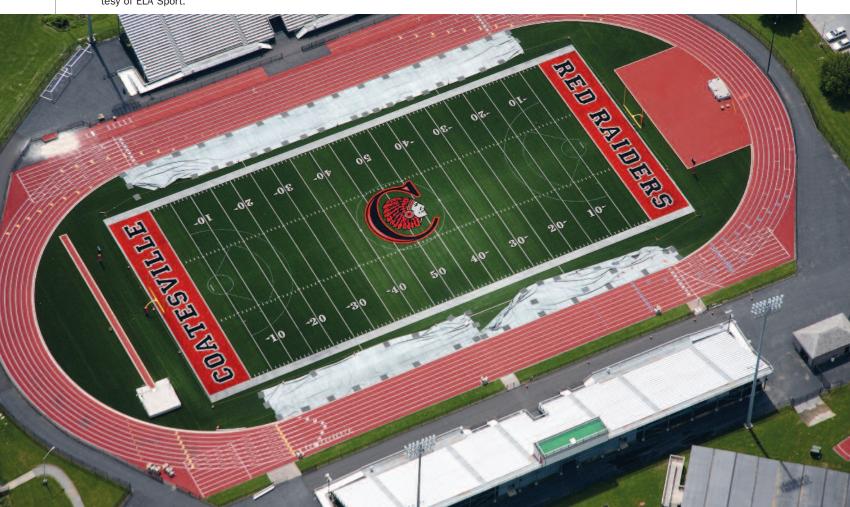
OKAY, you know a thing or two about tracks. They're oval in shape. They're 400 meters in distance. And it's been a long time since you saw one made out of cinders. But if that's the extent of your knowledge, consider this your introduction.

Today's track surfaces may look alike but they can vary greatly in terms of construction, surfacing, drainage, etc. Ultimately, factors such as site, budget and intended use influenced the selection decision. Here is an overview of the essentials, including the components of a track, how they come together, and the best strategies for maintaining the facility as a whole.

According to the American Sports Builders Association (ASBA)'s publication, *Running Tracks: A Construction and Maintenance Manual*, construction begins with site preparation: grading, compaction and drainage. Next comes the installation of a

Runner Illustration courtesy of istockphoto.com

>> THE COATESVILLE AREA (PA) HIGH SCHOOL STADIUM features a new synthetic turf surface, a renovated running track and new amenities to enhance its football facilities. ELA Sport of Lititz, PA acted as athletic facilities design consultant as well as project engineer. Photo courtesy of ELA Sport.



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base of crushed aggregate (limestone or gravel), or of processed or recycled asphalt or concrete.

Paving commences once a base has been laid. Asphalt is the most frequently used paving material. Asphalt is a flexible pavement; it is able to "give" slightly to compensate for the ground's movement due to settling, to the action of water, and to freeze/thaw activity. However, as it gets older, asphalt shrinks and hardens and is prone to cracking. Asphalt used can be either regular highway asphalt, or permeable asphalt that allows water to drain down through the track.

The surface is installed over the pavement. Generally, track surfaces fall into two categories: permeable (or porous) meaning water drains through the surface, and impermeable (or non-porous), meaning water drains and/or evaporates off the surface. Which is right for you depends on the site, weather and geographic conditions and other factors.

A variety of products are used in the construction of a track surface. They include primers (latex primers and polyurethane primers), binders (SBR or Styrene-Butadiene-Rubber latex binder, acrylic-latex polyresin binders or polyurethane binder), and coatings (water-based coatings or various polyurethane coatings). Beyond these, the major product used in the construction of a track surface is rubber (black rubber particles, colored rubber particles and pre-manufactured rubber products are used.)

Generally, systems are divided into three categories, any of which may be suitable for a given installation:

Latex systems. These consist of rubber particles bound together by a water-based latex binder that can be broken down into black mat systems, colored binder systems, colored sandwich systems and full-depth color systems.

Polyurethane systems These can be broken down into polyurethane base mat surfacing systems-permeable, polyurethane base mat structural spray systems-permeable, polyurethane sealed base mat structural spray systems-impermeable, polyurethane base mat sandwich systems-impermeable and polyurethane full pour surfaces-impermeable.

Pre-manufactured tracks. These can be broken down into a pre-manufactured base

mat with a seal and a polyurethane structural spray top coating, a pre-manufactured base mat with a seal and polyurethane coating applied to the base mat with embedded colored EPDM rubber granules, and a pre-manufactured, vulcanized rubber product that is installed in a single layer and does not require any further finishing for use.

While some uncoated asphalt tracks or unbound natural surface tracks such as cinder, clay, expanded shale or decomposed granite, are still in use, current guidelines and recommendations are no longer developed or issued for such surfaces.



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Maintenance

Tracks, like your house, do not hold value without regular upkeep. Daily, weekly, monthly, seasonal and annual maintenance will help keep a track in good repair. (Yes, this includes all-weather surfaces; just because it has that nickname does not mean it can withstand season after season without regular checkups and care).

"Most track surfaces are maintenance-free, meaning that the owner cannot do any real maintenance other than washing the track during the dry season and touching up numbers and triangles when the paint is worn out," says Luca Reinaudo of Mondo USA. "But in our opinion the emphasis should be on preventive maintenance."

According to the professionals who design, build and supply materials for those facilities, scheduled maintenance and constant vigilance are the keys that year after year, result in a great experience for athletes and coaches alike when they step onto a track.

"It's the small maintenance items that turn into big headaches when neglected," says Sam Fisher of Fisher Tracks.

Problems with a track might be occurring underneath, but the first place you'll see them is the surface. Do a walk-through of the facility on a regular basis. Daily is best, but weekly should be the minimum, particularly when the track is in heavy use. Create a schematic showing the track, and make notes to yourself to document any irregularities, such as high or low spots, dings, damage and more. Carry a digital camera and take photos of any areas of concern, then e-mail them to the contractor who put in your track, who can give you a call, or come out to inspect the facility.

Keep the surface clean at all times, and free of grass clippings, dirt, gravel and other debris. (A leaf blower is a low-tech tool, but it works wonders in this case). Otherwise, once athletes begin working out on the track, the debris starts getting ground in, causing damage. Check gates to make sure they are not dragging on the surface and abrading it. Check, too, to see that gate latches are working properly.

The fence, including the perimeter fence, fence mazes and the fence separating the stands from the track, should be checked regularly. Check all rails for good connections, and look for any bulging, sagging or tears in the fence fabric. Have problems fixed immediately.

Ascertain that sprinklers for the field or for the surrounding landscaping are not spraying onto the track and overloading it with water. Clean out drains; keep them free of grass clippings, leaves, dirt, litter and other debris that can clog them and keep them from working effectively. If you see water ponding on the track, alert the contractor.

"A super-saturated subbase will rot the asphalt, creating a great deal of vapor pressure on the underside of the rubber surface and causing bubbling and delamination," says Fisher. "In addition, we have asphalt stripping. Lastly, there are the sheer cosmetics of the discoloration due to the hardness and mineral content of the water itself."

Another way of protecting the surface? Allow only foot traffic on it. Use boards or rubber matting to protect the surface. Additionally, signage around the track should indicate rules concerning footwear (soft spikes, etc.) The contractor who put in the surface will be able to provide more specific recommendations. Many times, those engaging in other sports will run across the track on their way to the field, not realizing how much damage they cause. Again, putting mats or boards at entrance and exit points can help save your surface.

Because many facilities are open for community use, more than runners and walkers will take advantage, often to the misfortune of the facility manager. Dog walkers may use the field, and parents with children in strollers (or older children on tricycles and bicycles) and others may want to use the track. All these undesirable uses will have a negative effect on the facility, and on the ability of athletes to use it for its intended purpose. Be vigilant about enforcing the rules.

"Seventy-five per cent of damages that we see on tracks are due to misuse of the facility, and could be avoided if appropriate signs were posted," says Reinaudo.

The best maintenance advice? Talk to managers and athletic directors who have facilities you're particularly impressed with and find out what they do.

Mary Helen Sprecher wrote this article on behalf of the the American Sports Builders Association (ASBA), a non-profit association helping designers, builders, owners, operators and users understand quality sports facility construction. ASBA has available at no charge publications aimed at assisting turf managers and others, as well as their Membership Directory. See www.sportsbuilders.org.



>> THIS SHOT IS OF MIDDLETON (WI) HIGH SCHOOL'S FACILITY that features a nine-lane track as well as a portion of the newly installed sports field. Photo courtesy of Rettler Corp., Stevens Point, WI.

LOGO AND OTHER FIELD PAINTING TIPS FROM A TOP PRO

WITH ALL OF THE PAINTING I HAVE DONE on athletic fields and for special events, I never had the opportunity or request to paint solid endzones on a football field. In fact I have discouraged several folks from doing so since most of the seating in high school football is not conducive to being seen from the low angle; I recommend placing them in the middle of the field where most of the seats are. I also recommend that we do a helmet as I have a helmet stencil and can usually freehand the team's logo inside of the 20-foot space. That way, after the game it always looks like a helmet rather than some messed up smear from playing on a wet field.

Also the money it costs to make a stencil is not in most schools' budget and if I freehand it on grass, it will only last a couple of weeks and the school usually doesn't have anyone to

repaint. I have painted wolves in both endzones on a synthetic field, but just the letters. I laid out the letters by measuring the start and stops for the width of each letter and used strings on the top and bottom to set the height of the letter. But with the "O" and the "S" I had to use my ellipse formula to create the font. The S was actually made from two ellipses overlapping each other.

Last summer one of my largest accuonts asked me to layout two football fields end to end for a passing 7 on 7 tournament they were hosting. No big deal, I thought, as passing leagues are normally lines every 20 yards for a first down. But when they sent me a drawing of what they wanted 2 weeks before the event, it was basically two NFL fields end to end, so I had to create some needed skills and organizational planning.



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Since most NFL crews take about 2 days to achieve this task, I was given 2 1/2 days to complete the job; this didn't leave any time to have endzone or logo stencils so my objective was established. I was able to sneak out to the grass fields and mark and layout the field size and yard lines but it was a pretty tight time to paint as the fields are in use nearly every day.

I don't have any full time employees but I do have a great selection of my son Andy's former high school classmates. They love coming out to the plush, manicured ryegrass, sandbased turf. We started out by stringing the sidelines with a light coat of paint, (this is so that there will be less possibility of tracking paint when doing the yard lines) then starting at one



endline and literally leap frogging to precisely measure cross string all the way down the both fields with 15 feet in between. I like painting along the side of the string instead of on it so the string isn't loaded with paint that can leave whip marks. Also, I like using the left side of the nozzle or shield as a guide as I can see it better, but you have to measure 2 inches off the yard lines and have a 4-inch spray to be accurate. The sidelines, end lines and goal lines are measured and painted to the inside.

Once all of the lines are painted the sideline strings are moved to the top of the Number plus the thickness of the stencil: 27 feet for high school, 60 feet for college and 18 feet, 9 inches for pro. The numbers should be at least 4 inches from the yard line to allow for double striping, but if your numbers aren't 4 x 6 feet a foot away would make them appear to be larger.

I use a PVC pipe stencil for the yard marks and usually paint the numbers and the side yard marks at the same time down the field. One person can move them, but having two people allows a set to always be ready while the other is being moved. It helps to have two sets of zeros and arrows as they will get loaded up with a lot of paint.

Once the numbers are painted on one side I move to the other side and repeat the process the other way. Try and start on the end that you will be cleaning or loading the stencils up afterwards. Once the numbers and outside yard marks are painted, move the string to the hash location and set accordingly to your stencils edges.

I like to use three helpers if possible; one on each end move a set of 15 yard stencils and the other moves the paint machine up another 5 yards. They keep leap frogging all the way down and switch to the other side. When double striping, I like to use both strings, because if you have a line a little off the colored double strip really stands out. When I paint two to four fields every Thursday and Friday, the lines aren't always straight.

Next for the project was the layout of the end zones; they wanted the logo in each of the four endzones with the two different fields in contrasting colors, so one field would have a red background with black letters and the other black endzones with red letters.

I started by laying the top and bottom strings at the proper height across the endzone, marked the center and set the tape at both the top and bottom. The font was pretty simple, so I marked the start and stop of each letter, and for the O's I had to radius the ends at half the width of the letter. I used a string all the way down and marked the letters accordingly and used the top and bottom string as a guide to complete the letter.

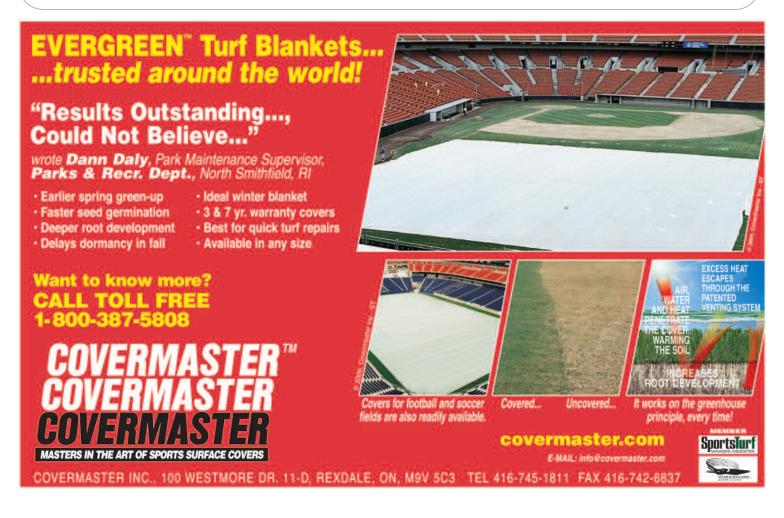
The best tool to use is the Trac-Cut product I sell to outline the letters; it attaches to the airless nozzle guard and the disc can be adjusted so the spray that you have barely makes contact with the rolling shield and gives a clean, sharp paint edge. Use a wide angle nozzle to fill in the letters and background, such as a 615 or special order 815. I outlined the letters in white and went the other direction to get a clean edge on both sides. The customer only needed a 3-foot white border instead of 6 feet, so I found it easier to repaint the sideline in the 4-inch line and paint the outside line in a 4-inch line and walk the entire

perimeter about 5 times with a wide spray, with one person moving the machine, one holding the hose and me painting the border. That way I didn't have as much over-spray or streaks.

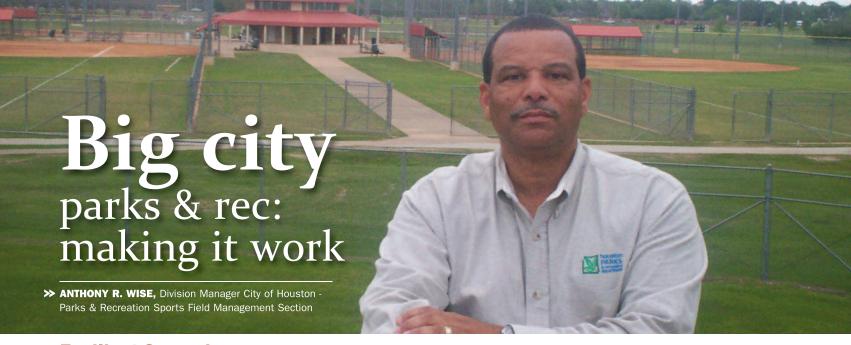
The center logos were another matter; I had to use my grid method to lay it out. First I printed the logo on a preprinted grid and laminated it. I simply mark the start and stop of the straight lines of the 7 and marked where the other lines intersected. Once the basic outline was marked, I filled in the logo and outlined it. The weather was great so the paint dried rather quickly and allowed me and the crew to get to the next step without any delay.

After the job was completed and the teams started playing, I was allowed to get on the roof with special permission to take pictures. What an impressive site! I was not aware of the magnitude of the event, which brought some of the top high school football players in from around the country. I was extremely proud to be involved and complete the project on time. By the way, the customer called me last month and want to know if I could do it in 1 ½ days this summer. I managed to get a ½ day back and will have to sneak out and get some references marked so I can get right on it.

Mike Hebrard is the owner of Athletic Field Design, Clackamas, OR, www.athleticfield.com.



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Facility & Operations By Anthony Wise

HOW WOULD YOU LIKE TO MANAGE 75 BASEBALL FIELDS, 31 softball fields, 88 soccer fields, 28 football fields and 2 lacrosse fields in a city where there is a demand for field use 52 weeks a year? All this with a staff of 15 fulltime employees and 6 seasonal employees? That is what my staff and I face within the City of Houston's Parks and Recreation Department.

In January 2007, under the direction of department director Joe Turner and deputy director Abel Gonzales, the Sports Field Management Division was formed. The adopted mission is to develop and maintain quality sports fields and facilities that encourage and create recreation, fitness and social opportunities for residents of Houston. Over the past 2 years we have learned many lessons with regards to user demand and our challenge to provide and maintain safe playing surfaces under intense field use. I have found that there are several keys to successfully managing sports fields in a city the size of Houston:

- Establish operating procedures that clearly define maintenance standards
 - Develop budget strategies that maximize available resources
- Promote programs that encourage community participation in maintaining the fields
- Effectively communicate the mission and vision for your maintenance operation

Every successful team has a game plan. Our game plan is our "Standard Operating Procedures" (SOP) manual. This is a formal document that outlines an overall maintenance system for sports field care, establishes a field classification system and address the administration and permitting of sports fields. The SOP sets the standard of performance for our staff and applies to all field user groups.

In 2008 our department permitted 224 sport fields. Each field is classified based on SOP standards. There are three field classifications: Competitive/Tournament Field; Recreation Field; and Practice Field. The Sports Field Management (SFM) staff maintains 23 Competitive/Tournament field and 28 Recreation fields. Competitive level fields are used by permit only. Practice is not allowed on these fields and they are closed unless permitted for a game or tournament. Recreational level fields are open for public use; practice is allowed and can be permitted for games or practice. Practice level fields have no restrictions.

Field maintenance standards

- Total hours permitted limited to 50 hours per week for Softball/Baseball and 32 hours per week for Soccer, Football and
- 600 cumulative permitted hours will constitute the Softball/ Baseball field being taken out of service for a "rest period" of 28 consecutive days and 400 cumulative permitted hours for Soccer, Football and Lacrosse fields.
- The "rest period" will commence on the Monday following the cumulative contact hour limit.
- Extended contact hours will result in an extended "rest period". Sports Field Management will decide on the extended period based on field inspection.
- Turf and playing surface rebuilding program would commence as soon as the field is out and be completed within the first four days. This includes aerating, overseeding, fertilizing, topdressing and scheduled maintenance.
- Fields will be closed for inclement weather as determined by SFM staff. Determining factors are: How much precipitation has occurred? Is there standing water on the field? Is the field safe to play on? What kind and how much damage could occur if field remains open?
- · Competitive Level Field maintenance includes: weekly field inspections; daily litter removal; daily skinned area maintenance; mowing/trimming (2x/week in March through October, 1x/week November through February); daily field marking, when permitted, Monday through Friday; and warm-season turfgrass maintenance program.

• Recreational Level Field maintenance includes: weekly field inspections; 2x/week litter removal; 2x/week skin maintenance; mowing/trimming (1x/week March through October, as needed November through

February); field marking when permitted for games; and warm-season turfgrass maintenance program.

• Practice Level Field maintenance includes: monthly field inspections; litter removal every 3 days; skin maintenance once biweekly; and mowing/trimming every 10 days. Field marking becomes the responsibility of the permit group when permit begins.

The SOP also outlines our administrative and record keeping functions. Daily work assignments (tasks) are detailed on work order tracking forms. The crew supervisor

notes tasks performed and completion time, travel, equipment and supplies used. This data is entered into a database that enables me to generate reports that help to quickly identify whether we are meeting our maintenance standards, track costs associated with field maintenance and compare cost versus revenue per field.

Municipalities across the nation are forced by today's economic downtown to tighten their budgets. Houston is no exception. As this article is

being written we are exploring ways to continue providing a high level of service to our community while reducing costs. The most important resource a sports turf manager can have when preparing a budget is data.

Look at the number of fields you are responsible for maintaining. Know the square foot or acreage of all your fields. Know what it cost to maintain fields at the various field classifications.

Some considerations that must be taken into account when preparing your budget are the expectation of the field user and city officials. Resources must be allocated strategically so as to maintain established standards. The sports turf manager must be aware of how their fields are being used for practice, for example, are user groups

allowed to exceed field capacity hours? This will greatly affect you budget allocation. We have found that by encouraging community participation in sports turf maintenance we are able to stretch our budget dollars.

>> DAVID BELTRAN,

Field Technician

We promote community involvement in sports field maintenance through our "Adopt-a- Sports Field" program. This program welcomes organizations or individuals who wish to "adopt" a sports field in lieu of paying permitting fees associated with the use of ball fields. This adoption



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is available for youth leagues only. We currently have 75 fields that are adopted and maintained by youth organizations. We have had an increase in participation each year since the program's inception in 2005.

Youth organizations enter into an agreement with the Parks and Recreation Department to provide field maintenance for a 6-month period. All maintenance tasks are clearly defined. The organization essentially agrees to perform field maintenance at our Recreational Field level. The organization conducts weekly field inspections and forwards the report to my office. My staff inspects each adopted field monthly to ensure compliance with maintenance standards.

Our sports field staff conducts two field maintenance clinics each year. We invite all Adopt-a-Sports Field participants and other field use groups to attend. We review maintenance standards, explain our field inspection form and demonstrate proper maintenance procedures. An annual meeting is held each year with field users where department guidelines are reviewed. The objective is to have open lines of communication with our user groups.

I am always looking for opportunities to speak with field users. It could be at a field maintenance clinic that we host or the opening day of little league season. My job is to educate and inform individuals, and organizations on proper field maintenance techniques, tools or supplies that will enable them to be effective in maintaining sports fields.

To facilitate communication with city officials, department directors, recreation program managers, and the general public we are working on the enhancement of our department

>> MIGUEL BARROSO, Field Supervisor

website. This generation depends more and more on web-based information. Using our department website offers us the opportunity to convey our mission and vision.

Our goal is to have a website that communicates field standards, procedures for permitting fields, field locations and the ability to voice comments or express concerns regarding their field use experience. We will use the site to feature a monthly article with field maintenance tips and our exceptional fields along with the responsible staff. The site will list current programs and highlighting historical event such as the 2008 Division II Women Softball and Lacrosse Championship and the USA Olympic Softball Team exhibition game.

The positive impact of sports facilities at the community level is frequently overlooked.

Every city would like to boost about the "quality of life" it provides for the residents. By providing safe, playable and aesthetically pleasing fields, we enhance the "quality of life" in our community. Yes, you too can make a difference in your community.

Thanks to the many members of STMA who have shared their winning strategies with me. Thanks also to my department director Joe Turner and deputy director Abel Gonzales who encourage my staff and I to take advantage of training opportunities through STMA, Texas Turfgrass Association and numerous video resources.

Anthony R. Wise is Division Manager for the Sports Field Management Section, City of Houston-Parks & Recreation.

	EXHIBIT Level 1 Mainter	_	ile
Field Name: Type of Field:		Address:	
Condition: Type of Grass: Type of Mower: Type of Soil:		Compaction: Drainage: Irrigation: Thatch:	
Soil Test: Date: pH:	Nitrogen: Phosphor: Potassium:	Notes:	

Time of Year	Fertilization	Aeration	Topdress	Overseed	1/3 Rule Mowing Ht.	Watering	Weed Control
March	24-6-12 w/ 50% SCU 1lb. N				1 1/2"	As Needed	Pre- Emergent Herbicide
April					1"	As Needed	Apply Ant Bait
May	21-0-0 11/2 lb. N	Core 4" 2 Directions	Drag Cores		1"	3/8" - 3x per week	
June	21-0-0 11/2 lb. N	Solid Tine			1"	3/8" - 3x per week	Post-Emergent Herbicide
July		Solid Tine			1"	3/8" - 3x per week	
August	24-6-12 w/ 50% SCU 1 lb.N				1"	3/8" - 3x per week	Post- Emergent Herbicide As Needed
September		Core 4" 2 Directions	Drag Cores		1"	3/8" - 3x per week	Apply Ant Bait
October	21-0-0 1/2lb. N	Verticle mow before overseeding		Perennial Rye 12 lbs.	1 1/2"	Light & Frequent	
November				Perennial Rye 3 lbs.	2"	As Needed	
December					2"	As Needed	
January	21-0-0 1/2lb. N				2"	As Needed	
February					2"	As Needed	

^{*}FERTILIZER N-P-K BASED ON SOIL AND TISSUE ANALYSIS **APPLICATION RATE SHOULD YEILD 6LBS. N PER YEAR.