Besides conducting paid research at the Mendota Research Center, "our" pathologist would be available for on-site visits to any MGCSA golf course for a very low fee, probably transportation expenses. And the pathologist would be invaluable for the dissemination of information at regional seminars and the state conference. The pathologist position would be visible and research in demand by both the pesticide companies who want it done and the MGCSA membership who will benefit from the reports generated.

Beyond pathology, many more experiments could be conducted. The RCGC has the potential to develop continued evaluations from NTEP Trials originally conducted at the TROE Center on the University of Minnesota Campus. It would be a real life demonstration grounds for the development of low and high input grasses. Fertility and pesticide fate studies are also potentials at the Mendota RCGC as well as water management and even cultural practice studies.

Besides benefiting from the research, how does the membership of the MGCSA fit into the equation? Competitive business practices and the creation of an in depth paper trail will be necessary to comply with the partnership between MERGE and the community of Mendota Heights. In an effort to maintain the business integrity of the venture, no contributions of soft or hard goods would be accepted. Rather than establish a perceived advantage over other area courses, competitive bids would be evaluated for all operation of the property. Should the winner of the bid desire to contribute proceeds from their sale or lease back to the MGCSA, it would be graciously accepted and applied toward research. Certainly those contributing would be recognized for their support.

This endeavor, the first of its kind in the nation, is currently being closely monitored by the Golf Course Superintendents Association of America and has been since they got wind of the concept over a year ago. They appreciate that as interest in applied science declines at many higher institutions of education, new destinations and creative ideas must be developed for turf research. The Mendota RCGC is being looked upon by the GCSAA as a cutting edge concept and as a potential template for other associations to mimic. It is critical we are the first to implement this project so as to ensure interest and financial support from a wide variety of avenues.

Still sound far-fetched to have our own cake and eat it too? Don't be so skeptical. Who assisted in the development and continued support of the finest turf science facility in the state of Minnesota, the TROE Center? You did! Who found and retained two of the top turf minds in the industry, Dr. Brian Horgan and Dr. Eric Watkins? You did! What association maintains an incredible credit record and follows through upon obligations important for the advancement of their membership? Yours! What organization is largely responsible for one of the biggest and best regional educational programs in the country? Yours! Your support toward the progressive ideas of the MGCSA has made us one of the best local associations affiliated with the GCSAA. Should we reach an agreement with the city of Mendota Heights, soon you could have a staff member at your disposal, an extension turf pathologist directed by the changing times and demands of the MGCSA membership.

A destination for research, your research, is being created for the benefit of all turf managers in the state. Although we cannot change the weather, together we can develop a plan to contend with its effects. Through the creation of a destination for research, the position of an extension pathologist and an available turf consultant you are managing your destiny, making your drive about upon the course a little bit easier.
Golf Course Master Planning

By KEVIN NORBY
Herfort-Norby Golf Architects

As golf course superintendents, you have probably contemplated or may have already completed one or more renovation projects at your facility. These may have included drainage improvements, the addition or expansion of a practice facility or the reconstruction of tees, greens or bunkers. No matter how large or how small, it is important going into these projects, that there is a clear understanding of what the long-term vision for the golf course is and how those improvements might affect future improvements and future operations. The process which golf course architects use to clarify that vision is called "long range master planning."

What is a long-range Master Plan?

The long-range master plan usually consists of a detailed plan and a typewritten narrative summarizing the existing condition of the golf course as well as recommendations for future improvement. We typically start with an aerial photograph and a topographic map of the golf course and then, through a series of site visits and meetings, we summarize the strengths and weakness of each hole on the golf course. We typically look for drainage and maintenance problems, safety problems and problems with pace of play or playability. In some cases, we might also look at opportunities to increase vehicle parking and ways to improve cart staging and circulation around the clubhouse.

Once the analysis has been completed, we then prepare a plan of the golf course showing our recommended improvements. The plan is usually prepared in full color so that it is suitable for presentations to large groups or for display in the clubhouse to encourage discussion among the membership and guests.

The final phase of the master planning process involves putting together a cost estimate and a phasing schedule for the improvements. This allows the superintendent, owner or Board to prioritize the specific projects on a hole-by-hole basis based on cost and other criteria of their choosing.

Why do we need a Master Plan?

The real purpose of the master plan is to provide a long-term vision for making improvements to the golf course and to provide a basis for prioritizing those improvements. We frequently visit with courses that only a year or two earlier put in new cart paths or new irrigation systems only to find that the new tees they now want to build don't work well with those previous improvements. By stepping back and taking a look at the bigger picture, the master plan process often allows the Club to avoid costly mistakes and to save money by phasing projects in a more logical sequence.

Another important benefit of preparing a master plan is to avoid the implementation of "pet projects" or spontaneous projects which often result when new managers, committee chairs or Board members are appointed. Often these projects are done with perfectly good intentions but without a complete understanding of what the courses long-range priorities are.

(Continued on Page 13)
GC Master Planning-
(Continued from Page 12)

Implementing your Master Plan

Once the master planning process is complete, your Club will need to decide which projects are of highest priority. For some courses this is a matter of simply trying to improve turf quality and daily playing conditions. In this case, the Club might decide to focus on drainage issues, tree removal and the installation of cart paths. At other courses, the priority may be to improve course playability and strategy by adding tees, rebuilding greens or reconstructing bunkers.

I often recommend that the Club try to select a specific hole or specific area of the golf course and then complete all or most of the work in that area at once rather than doing numerous smaller projects such as constructing new tees on three or four different holes. There are a number of reasons for this but, most importantly, this allows the membership or golfing public to see the new dramatically improved finished project in its entirety rather than just seeing smaller individual projects that might go somewhat unnoticed.

Another reason for this is that these larger more comprehensive projects tend to save money by more effectively minimizing disruption to play throughout the golf course and by reducing the cost of restoring damaged turf and irrigation.

Regardless of how you decide to proceed, the master planning process can be a great tool for providing a long-range vision and for prioritizing improvements to your golf course.

(Editor’s Note: Kevin Norby is the owner and principle of Herfort-Norby Golf Course Architects, LLC. of Chaska, Minnesota. Recent long range master plan projects include Whitefish Golf Club in Pequot Lakes, Minnesota; Forest Hills Golf Club in Forest Lake, Minnesota; Mason City Country Club in Mason City, Iowa, and Sunbird Golf Club in Chandler, Arizona. Kevin may be reached at (952) 361-0644 or via email at golfnorby@earthlink.net or visit www.herfortnorby.com.)
The History of Maple Syrup

It is not known for sure who first discovered the technique of collecting sap and cooking it into maple syrup, but when the first Europeans arrived in North America and had contact with the Native American tribes of the eastern woodlands, they report stories about the consumption of maple sap in Indian lore. Here is a quote from a British Royal Society paper written in 1685: "The Savages of Canada, in the time that the sap rises, in the Maple, make an incision in the Tree, by which it runs out; and after they have evaporated eight pounds of the liquor, there remains one pound as sweet ...." A publication in 1912 by the Vermont Maple Sugar Makers' Association credits both Native Americans and French Canadians with "passing on the secrets of sugarmaking." Maple syrup and maple sugar became the household sweetener in the Canadian and American colonies throughout the nineteenth century, instead of refined white cane sugar, raw sugar, or molasses. Maple trees were readily available and a supply of syrup and sugar cakes could be made for the year ahead.

The Tree

The magnificent rock maple, hard maple, or sugar maple tree (acer saccharum) are the sources of the sap which is converted to Maple Syrup. Any sugar maple with a trunk diameter of 12 inches or more can be "tapped" for making syrup. It takes thirty years for a maple tree to grow to that size.

Springtime is the season for "sugaring", when nights are cold (below freezing) and days are warm. The sap gathering stops abruptly when the weather turns balmy, for the tree's nutrients are being mobilized to feed the leaf buds, and these metabolites cause objectionable off-flavors in syrup. So the sugaring season may be very short, just a few days, or may last for a couple of weeks or more, depending on the weather.

Tapping the Tree

As the maple tree begins its new growth each spring, the sap which stays frozen during winter, begins to thaw. Once the sap starts to flow within the trunk of the tree, usually in February or March, the owner of the "sugarbush" (grove of sugar maple trees) can capture the sap. A hole is bored into the tree trunk, usually 7/16" in diameter and no deeper than 2 1/2 inches, and slanted up at an angle of 5 to 10 degrees. A "tap" of metal or plastic is inserted which functions as a faucet. A new taphole must be bored each season, and old tapholes usually heal over in a year or two. Recommended tapping guidelines are observed to avoid shortening the life of the tree. Generally a tree will tolerate two or sometimes even three taps. The sap as it comes from the trees is a sparkling liquid with only a vague hint of sweetness. At this point the sap has a sugar content of 2%-2.75%.

There are two ways of collecting the sap. One is simply to hang a bucket from each tap and travel around at least once a day, emptying each bucket by hand into a big tank on a sled, either drawn by horses (the way it was always done in the past) or by a tractor. A 16-quart bucket of sap, if full, weighs over 30 pounds, and a single gatherer might be expected to retrieve and dump 750 to 1,500 buckets in a day. These days the buckets and covers (to keep rain, snow, and debris out of the sap bucket) are made of metal, but earlier in this century, the buckets and covers were made of wood. Now these old wooden sap buckets command a fine price at antique auctions!

In the 1960s, another method of collecting sap became popular. This method is particularly effective when the sugarbush is on a hillside. Plastic tubing is attached to each tap which then forms a network of tubing from all the taps, allowing the sap to flow into a large storage tank at a location close to the sugarhouse (the shed where the sap is boiled down into syrup). Sometimes pumps are used to facilitate the flow of sap through this pipeline system. It takes 32 to 40 gallons of sap to make one gallon of syrup!

Boiling the Sap

The boiling of the sap takes place in a "sugarhouse". This is a simple building that shelters boiling operations that is usually uninsulated, with a steam vent in the roof, a concrete floor and space for the evaporator, fuel (either wood or oil) to heat the evaporator and sap storage. The sugarhouse is often located at the base of a hillside and accessible by a road.

Sap is highly perishable and must be boiled at once to make fine syrup. The sap is heated in an "evaporator", which causes large amounts of water to be driven off as steam, leaving syrup. Most evaporators consist of a long firebox (known as the arch) for a wood fire or an oil burner underneath and have shallow, partitioned pans above the heat. The typical sugarmaking evaporator is about five or six feet wide and 16 feet long. After a roaring fire has been started, the cold sap enters the unit at one corner in the rear and moves slowly in a zig-zag flow in the evaporator, around the partitions, steadily increasing in thickness and sugar density. Additional cold sap is fed into the unit in a steady drizzle, float valves maintain the fluid levels and the finished syrup, scalding hot (around 217°F), is filtered and drawn off near the front of the evaporator. When you realize that such an evaporator can process six or seven 40-Gallon barrels of sap in an hour, you understand how much steam is created which can be seen for miles around, billowing up from the sugarhouse.

It is this boiling process that produces the great maple flavor. Just the right amount of cooking time is crucial! Too much cooking will cause the sugars to start to caramelze, the syrup will darken and a lower-grade syrup is produced; or even worse, it can boil over and scorch, ruining the entire batch! The sugarmaker tests for doneness by holding up a scoop of syrup and letting it drip, watching for "aproning", when the syrup comes off the scoop in a slow curtain or sheet. A thermometer and hydrometer are also employed to ensure perfect density.

These days, a few large operations use superfast evaporators and/or reverse-osmosis units which substantially speed up the boiling time. However, the majority of sugarmakers are without these latest technological enhancements.

When the hot sap is ready and has cooled to 180°-200° F, it is poured into containers such as glass, metal cans, or plastic. While some traditionalists prefer their syrup in metal cans, the new high-density plastic jugs are gaining favor, and some prefer to display the natural beauty of syrup in sparkling clear glass.

(See related story on Page 22)
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Management Matters

By JAKE RYAN
Assistant Superintendent, Northland Country Club

In the famous words of Ron Burgundy, "I wanna say something. I'm gonna put it out there; if you like it, you can take it, if you don't, send it right back."

What a great way to spend a summer! Riding lawn mowers and golf carts around some of the most beautiful tracts of land in Minnesota, many of my friends and family are extremely green-eyed with envy. Think of the childishly amusing, teenage tomfoolery and strangely human stories we all have from working on golf courses. Amidst all those enjoyable times, a job always needed to be completed, even though I had a lot of fun working on a golf course there were very few occasions when I let complacency creep into my family taught work ethic. "I am the best greens mower to ever walk a green", every time I mow a green, in the forefront of my perfectionist mind; I am unsurpassed in mowing ability.

Many men and women, in the golf course industry, have the same sentiment as they perform their daily tasks. My belief is we all should think we are the best at what we do. When performing my daily tasks failure to complete the task to the best of my ability is never an option. This mentality keeps me sharp, constantly trying to improve the task at hand. Undoubtedly, all of us take great pride in our abilities and the results we produced. Meeting the demands of golfers is not possible if we are not striving for perfection. After several years as a green staff member and one summer as an intern, I began the past season as a Second Assistant Superintendent, and then moved up to an Assistant Superintendent. Although my work ethic has not changed, the daily tasks I perform are now much different. No longer is my work ethic utilized in the daily tasks of mowing greens, or raking bunkers. Instead, I am now charged with seeing the standards and needs the membership demands are met, with minimal interruption, on a daily basis. As an Assistant Golf Course Superintendent, I soon realized that this comes as no easy task.

At times perfection seemed to be as unattainable as the Holy Grail. This is certainly no result of the men I have worked for but more so the standards I have set for myself. Rather as an Assistant Golf Course Superintendent I have come to realize a different definition of perfection. During my time as a crewmember I had complete control over the specific task I was assigned, allowing me to attain perfection up to and including the end product. As a manager I am learning to look more at the end product. While I am still trying to attain the same standards I realize the methods used to achieve those standards may not match my definition of perfection.

Let me use the New England Patriots as an example. While the end result of their season is yet to be determined they did obtain a perfect regular season. While the end result was perfection, was every play executed perfectly, was every game won, won exactly the way the players and coaches planned? No. Along the road to perfection we run across all sorts of problems. The question is; do we have contingency plans ready when these problems occur? During my first season as an assistant I felt like I had solid game plans. However, my ability to compensate on the fly, when problems did arise, rarely produced the end result I was looking for. I was disappointed in my ability to make contingency plans.

This led me to seek further education on management topics. I began reading a few small "pocket size" books. While brief, they offered some valuable tips for new managers. As I read I was not surprised to find business management really is an art. It was also quite clear adaptation was vital to successful management. But what course of action do I take to continue sound management decisions if I don't know what that is. I decided to read a more in depth management book, called Successful Manager's Handbook: Development Suggestions for Today's Managers. Very much text book in nature, it was full of very practical information that can be applied in all sorts of current management situations. It was a tough read for a young guy with many

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other thoughts on his mind, but I will value the information for the rest of my turfgrass management career. These efforts of educating myself in business management led to the idea for this series of articles. This article is an introduction to a series of articles that I plan to write over the next year. Throughout this series interviews with successful business managers will be conducted in an attempt to further glean information about the business of managing people. These discussions offer important information to all of us in the golf course industry. The topics come from Successful Manager's Handbook: Development Suggestions for Today's Managers and include: administrative skills, communication skills, interpersonal skills, leadership skills, organizational knowledge, and thinking skills. A broad range of subjects will be covered and many different businesses will be investigated. The interviews I plan to conduct will acquire personal philosophies and approaches on management.

The following is a preview of the topics to be covered in future articles. These previews are the foundation on which I will base my interviews. Administrative Skills-to quote President Dwight D. Eisenhower "Plans are nothing; planning is everything." There is a definite need for establishing plans that are appropriately comprehensive, as well as realistic for the golf course, in the long and short term. The structure and staff need to be evaluated to recruit and hire people for the different duties on the golf course. As a manager we need to develop systems and processes to assure that they are effectively performing the task. We must train employees to make decisions on their own while performing a job, then as a manager monitor their progress. We as managers can then manage execution as opposed to managing the specific task. Having multiple demands and competing priorities means we need to work efficiently, by allocating our time, to be effective managers. All of these topics help us reduce problems that may arise, but we must also communicate them properly.

The foundation for successful administrative skills demands effective Communication Skills. To express what needs to be said we need to speak effectively in every interaction with employees. The quality of these interactions is dependent on us to foster open communication in order to have excellent information flow. This is accomplished if we listen to others and have an understanding of comments and questions. In order to eliminate questions we must deliver presentations that direct them in clear paths. If issues continue, managers may need to prepare written communication of formal or informal documents, conveying information more clearly. First-rate communication skills are critically important in all aspects of business management.

Humans with good communication skills are said to have good "people" skills and that cannot be any closer to the truth for the management aspect of Interpersonal Skills. By having a give-and-take mentality we can build relationships that are open and direct. The only way to effectively develop these relationships is to display organizational savvy and understand the agendas and perspectives of others. Building these relationships and creating a leverage network, we identify key stakeholders that get things done. It is also important to value diversity, value the chance to learn and move toward things differently. Also, if substantive differences and disputes occur, we must bring them to the forefront and manage disagreements. Having great interpersonal skills is one of many characteristics (Continued on Page 21)