

turfgrass research



Tom Watschke says there is a need for more turfgrass students to enter the research field.

it's going to be a challenge to see how the void gets filled, not only because of the numbers, but also because of the diversity of research problems that need to be solved, which is a reflection of the industry's growth. Twenty-five to 30 years ago when I started, the Penn State research program was 99 percent oriented to the golf course, as was everybody else; but that isn't true anymore. There are research programs that deal with the environment, homeowner problems and athletic field problems. I placed an undergrad at Jefferson Memorial Park, a 650-acre cemetery, in Pittsburgh. Talk about another unique set of problems. So anywhere you see turf that needs to be maintained, a whole plethora of new problems that need to be researched emerges.

Would marketing the research field help?

We've talked about that, recruitment and going to national agronomy society meetings a lot. It's competitive marketing. Universities are offering financially attractive opportunities for young people to go to graduate school. We're challenged because of the attractiveness of the positions that young people have. It's not so bad starting at \$35,000 a year, and in five years, a young person has earned a pretty good chunk of change that he wouldn't have had if he would have stayed in graduate school. It's tough. And the other aspect of that is the better ones academically are the ones who go out the door with the highest pay without going to graduate school.

Who's funded most of the research you've done during your career?

The hard money universities have, particularly colleges that have agricultural sciences, is limited. We're fortunate the turfgrass industry is well supported. For example, the turfgrass council in Pennsylvania, through its sponsorships with us of trade shows and conferences, generates substantial funds for scholarships and research projects. And our industry partners, all the Syngentas and Bayers of the world, are very supportive of our research programs. So the soft money side, which is the side I just mentioned, has been our savior. If we hadn't had the soft money support, we wouldn't have come close to providing the solutions to all the problems we hopefully have been able to provide our clientele.

Do you predict changes with funding during the next 10 to 15 years?

Cooperators are pressured more and more to fund this and that. Institutionally, it's going to get smaller because the colleges of agriculture sciences are strapped. Universities are strapped and victimized by having to lobby for state appropriations and are being played like a pinball by legislators who want us to raise tuition, and students are caught in the middle. I've watched this for 40 years. It's the same old game. It's a gloomy scenario on the hard money side.

However, having said that, I submitted a research proposal to the Department of the Interior, specifically the U.S. geological survey, for funding on initiating our water quality research program. I received a threeyear contract from the Department of the Interior. So here's a federal-level funding agency that stepped to the plate and helped out immeasurably. There are funds out there, but for turf professors to get a piece of that action, they have to be very innovative.

A lot of states are challenged right now, but there are initiatives that generate funds that are consistent in nature. For example, there's a fund-raising effort called the Pennsylvania Turfgrass Council Research Trust. The idea is to, through donations and capital contributions, develop a corpus of a significant seven-digit number from which the interest generated by the fund can provide sustainable support to the turf program rather than living from year to year. However, the trust is designed to allow the corpus to be dipped into if money is needed for a major project or problem. But that would have to be an emergency. They are both smart, long-range ideas to sustain funding. Having a corpus provides a baseline need, and then it can be added to year by year so that we can keep up with inflation.

What is the most interesting research project you've worked on?

It would be the environmental water quality project, the one most people know me for and hopefully will remember me for. We started in 1983 developing a runoff facility that could evaluate the fate and movement of fertilizers and pesticides in water, both off and downward from the site. The project was partially funded by the university – that was the hard money at work. It also was funded by the turf industry – the turfgrass council, lawn care companies, golf courses. In all, the project required a fairly sizable amount of money to get the facility built, maintained, and to fund the graduate students.

We believe the facility has made a significant and lasting contribution to what we know in terms of turf and the impact turf has on water quality. What we found was the opposite of what was being talked about in the late '70s, which was that golf courses were toxic waste dumps and people who tried to have a nice lawn were polluting the world. We put a reverse spin on that and generated the data to prove that if you don't have some turf in your suburban ecosystem, you have a big problem because it's the buffer against many of the negative environmental inputs that exist when development occurs. We knew it all along, but there weren't any numbers to back us up. We were condemned by a doomand-gloom media as the bad guy.

We designed the facility to give us the worst-case scenario. When the irrigation system is on, the runoff is six inches an hour. That occurrence of a storm isn't on the chart unless you're in hurricane territory. We originally designed the facility to handle a 125year storm, which is three inches an hour. What we discovered early on was that it's difficult on an established turf site to get the water to run off, so we had to re-retrofit our irrigation system to increase it to six inches an hour so we could get samples.

When was the project completed?

It will never be completed. There's always something new that's developed in the marketplace. Now it's lacking a graduate



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USE READER SERVICE #20



turfgrass research

student, and that is primarily because I'm retiring, but somebody will pick it up. It's a viable facility that will remain operative long after you and I are gone.

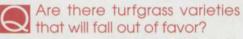
What's the greatest research finding during your career?

The one I just mentioned is one of them. It shows how favorable turfgrass systems are to the environment. And there have been a lot of advances in the improvement of turfgrass varieties, such as the fact that we can now seed Bermudagrasses and zoysiagrasses and some of these warm season species.

The whole arena of plant growth regulators, which have now been accepted by a lot of turf managers, has revolutionized some of the tools in the golf course superintendent's toolbox. There isn't a golf course superintendent these days who doesn't use plant growth regulators for something, whether it's seed-head reduction, assisting in renovation or conversion from one species to another, or cutting mowing costs. Thirty years ago, that would have been an unheard of position. The whole world of turfgrass science research is still in its infancy and continuing to evolve.

Is there a turfgrass problem that future research will solve?

The genetic engineering side of plant breeding. The breeding side of turfgrass management historically is painfully slow. It takes a long time, anywhere from eight to 10 years, to get a variety to market. That's a long time to wait for a plant breeder to do crossing and back crossing for specific traits to deal with some problems that exist now. The answers to a lot of our problems will come from graduate students trained in genetics and plant breeding and all the various high-tech innovations. We just don't have the student numbers.



That's a given. In 1970, Merion Kentucky bluegrass was the best bluegrass on the planet, but it was susceptible to stripe smut, which wiped out Merion in a short period of time. So varieties tend to be cyclical in nature - they come and they go. Some have more staying power than others depending on how good they are. An example would be Penncross creeping bentgrass, which has been around for 50 years, and still has a pretty good market share. But one day, there's going to be some professor talking about Penncross to a group of students that have never heard of it. Varieties have a certain life span, and once it's over, it's over. Pennstar was a Kentucky bluegrass that lasted about two years. You never know whether it causes problems you didn't see coming or whether it's going to have some failures on the seed production side, which can doom a variety that's of very high quality if it doesn't produce good seed yields. If it's a fickle seed producer, you can't expect an Oregon, a Washington or an Idaho grass seed grower to roll the dice. They're going to produce those varieties that yield the most because they're in the business of growing seed and making money. There's a lot of drivers that can influence the longevity or life of a variety beyond acceptance by the end user.

What's your take on Roundup-Ready creeping bentgrass?

It's a big enough headache. Five years ago, they said we'd have it next year. That's still what they are saying today. There are problems with developing genetically altered turfgrasses. For example, there's the whole issue of pollen movement, as we now know pollen can blow half a mile. That sure puts off alarms with people who are involved with concerns about invasive species, and that's considerable in Washington, D.C., these days. They don't want to have anything introduced that can have a natural pollen shed that will go out and cross with other native bentgrasses and perpetuate a gene that's Roundup resistant.

It's my take that what's being made of the potential problems is far greater than reality, but it's not defendable strictly from the standpoint of saying that the pollen doesn't spread. It does. There are proposals to breed around the problem by producing male sterility. When Roundup resistent cultivars ultimately get to market, you still have the end user that's going to be the one that makes or breaks it. If you are talking about \$80 a pound of seed and now leasing seed to people, there will be conversations that go on that I hadn't anticipated. You have to target a fairly large market in terms of a business plan that shows a return on your investment. I don't know how that's going to work because there are a lot of golf courses that already have awfully good fairways, and they deal with annual bluegrass without spraying Roundup.

What's the turfgrass variety that has had the biggest impact on golf in the past 30 years?

Penncross creeping bentgrass, and I don't say that because it's a Penn State variety. It's on more golf courses in the world than anything. It's aggressive, and it can be managed in a lot of different ways. It can be managed without a tremendous amount of input. On the other hand, it's accepting of management input to make it be what you want it to be. It has respectable dollar spot resistance. It brought to the table what a lot of existing varieties didn't. Many of the new varieties offer quality improvements over Penncross, but it's still one of the best selling creeping bentgrasses in the world.

What turfgrass variety is Penn State working on?

Our turf breeder, Dr. Dave Huff, is working on annual bluegrass. His collection of germplasms, which have been collected from all throughout the country, number more than 2,000. In terms of putting green types, this is a very specific for-greens-use-only type of annual bluegrass. When it's really good, it's probably better than bentgrass. But his dilemma is that the best ones from a turf quality point of view don't produce much seed. He has to figure out how to get around that. But he assures me there are some genetic tricks that can be played with tactics that will circumvent the fact that the best ones don't produce enough seed.

What's most exciting about turfgrass research now?

If there's an area young people interested in turf research are gravitating toward, it's sports field management. It's important to determine how many injuries on an athletic field were due to field conditions and how many were due to equipment. There's a significant influence that agronomic conditions have on injuries, and that will be actively researched. If you look 10 to 13 years down the road, you'll have that type of research. There will be continued research on improved varieties and work on the environmental side. You'll have the development of new products such as growth regulators and fertilizers. It's an industry that enjoys an awful lot of support because the return is there for people who are conducting research on the cutting edge.

Why are you retiring, and what do you plan to do after you retire?

I'm retiring to do other things, but I plan to stay active in the turf industry. I will continue to teach on the Internet after I retire. I will continue speaking, writing and working with agrichemical companies on various projects. So there's plenty to do. The difference is that if I get the fishing report and they're biting, I'll do work tomorrow and go fishing today. Controlling your own timetable is the most attractive part about retirement. Also, I'll be able to do more consulting because I've always been constrained by having limited availability in the past. GCN

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Career management

Taking the next step

SUPERINTENDENTS CHANGE JOBS TO FIT WHERE THEY ARE IN THEIR CAREERS

by JOHN

jobs for different reasons, and some do it more than others. The average WALSH tenure of a golf course superintendent at a club or course is nine years, according to a 2004 Golf Course News subscriber profile survey, but that average is likely to decline in years ahead. The most common reason for a superintendent to change jobs is to advance his career. However, before making that move, there's much to consider.

l olf course superintendents change

Making the move

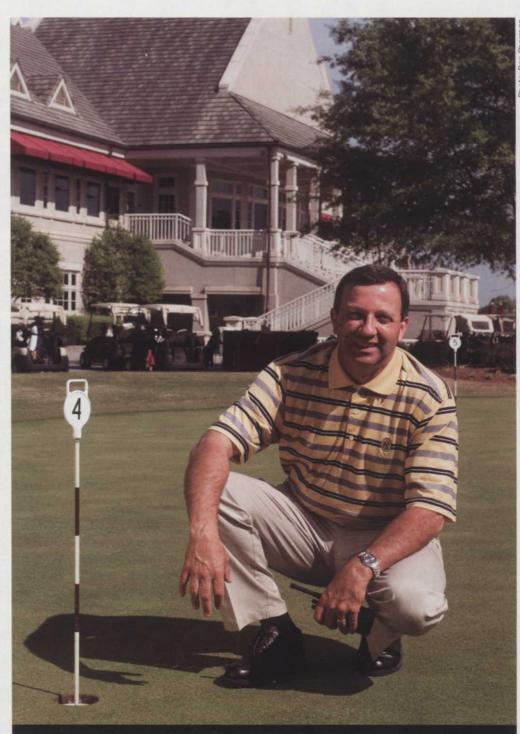
Tony Mancuso, CGCS, director of golf course operations at Cherokee Town & Country Club in Atlanta, made the move from Bellerive Country Club in St. Louis. While at Bellerive for six years, Mancuso hosted the 2004 Senior Open and had no intention of leaving. He says he had a wonderful relationship with the club's members.

However, the previous director of golf course operations at Cherokee, who knows Mancuso, gave a list of candidates for the job he was leaving to the club's c.o.o.

"I was on the short list," Mancuso says. "I got a call in 2004, a month after the Senior Open. The call came out of the blue. I had no thoughts of going anywhere."

Mancuso had to weigh a number of factors before deciding to make the move. His daughter had just graduated from high school and had been in a stable environment, and his wife was his administrative assistant at Bellerive, so there would be little adverse impact on the family if they moved.

"I'm turning 50 this summer, and if there was a time to make a move, this is the time because you're not as marketable at 55 as you are at 50," he says. "The c.o.o. of Cherokee was looking for a candidate who was about 50 years old and planned to remain at this job until retirement.



A month after hosting the 2004 Senior Open at Bellerive Country Club, Tony Mancuso received a phone call about a job at Cherokee Town & Country Club.

"It's a perfect fit at the perfect time," he says. "It was going to take that to pull me away from Bellerive."

Shortly before Mancuso left Bellerive, the club's general manager left to work for a golf club in South Florida. This also played into Mancuso's decision to leave.

On top of all that, Mancuso says he received an improved compensation package with the new job.

Unlike Mancuso, Glen Misiaszek moved from a public course to a private club. Misiaszek, golf course superintendent at the 18hole Cohasset (Mass.) Golf Club, has been there since January 2004. He came from Shaker Hills Golf Club, an 18-hole, highend daily-fee course, in Harvard, Mass.

Before Misiaszek took the job at the 110year-old Cohasset course, he interviewed with two other clubs. He was selective and didn't want to take a job at a private course just because it was the type of course at which he wanted to work. He wanted to work for committed members, and his wife wanted to live near the coast.

"Cohasset had a master plan," he says. "They we're building a maintenance facility. They had the funds. I clicked with the people I interviewed with, and they had a desire to put the course back to the way Donald Ross had originally designed it. We didn't even talk money when they called to offer me the job. It's an increase in pay, but because the cost of living is more expensive, it's a wash financially. Money didn't fill our pockets."

The move for Misiaszek had its challenges. Even though his wife had just finished graduate school, which worked out perfectly, she gave birth to their first child two weeks before they moved into their new house. That, along with buying one house and selling another, made the move more difficult, but everything worked out in the end, he says. However, being the new guy can be tough.

"I'm really confident on the job and am used to the business structure because I've done it before," Misiaszek says. "The personal changes were more stressful than the professional ones."

Unlike Mancuso and Misiaszek who left their old jobs by choice, Bryan Tipton, certified golf course superintendent at Eagle Ridge Golf Course in Williston, S.D., was terminated from his old job at Sutton Bay in Agar, S.D., last year.

"I was let go in June, but they didn't give me a reason," Tipton says. "I was offered the job at Sutton Bay in 2001, and in 2002, the course was built rapidly, and there was a short grow-in period. We started seeding in August and September and opened in June the following year. Sutton Bay is in the dead center of the state. It endures three types of climates, and the weather is unpredictable. In the winter of 2003-2004, we had damage on the greens.

"I wasn't a supporter of putting covers on the greens," he adds. "On the greens where we used green covers, which was on all 18 greens of the championship course, we had damage in the spring. The greens we didn't cover, which are on the par-3 course, were perfect in the spring."

Last summer, Tipton applied for jobs, and a fertilizer sales representative friend told him of an opening that was the right fit for him. It was a nine-hole course where the owner was adding nine holes, similar to the course Tipton worked at before Sutton Bay. After being unemployed for about six months, Tipton was hired at Eagle Ridge.

Personally for Tipton, the move was more difficult than his last job change because he also was moving his wife and stepson, in addition to finding a house and acquiring a mortgage.

St. Louis to Atlanta

At Bellerive, an 18-hole private course designed by Robert Trent Jones Sr., Mancuso says the budget was between \$1.2 and \$1.3 million. The course has zoysiagrass tees, fairways and surrounds and Crenshaw bentgrass greens.

"St. Louis is the worst place to grow quality turf," he says. "The summer temperature is way hotter in St. Louis than in Atlanta, according to the National Oceanic and Atmospheric Association. St. Louis is at a 300-to-400-foot elevation, and it's right by two rivers. The humidity is stifling."

Mancuso says the St. Louis winters are



One of the reasons Glen Misiaszek took the superintendent job at the Cohasset Golf Club is because of the members' support of the course.

feature Bermudagrass everywhere but greens because winterkill is less likely there.

"It's so much easier to maintain because it's all Bermudagrass," Mancuso says. "Guys in St. Louis are dependent on Mother Nature. When I was thinking about moving, I thought about having more control over a course in Atlanta than in St. Louis."

Another difference between the two courses, which Mancuso says are similar in prestige, is the workers. Mancuso says even though there are so many Hispanic workers in the industry, they're aren't many in St. Louis. There, he had Ethiopian staff members. In Atlanta, the staff is almost entirely Hispanic, which can create communications problems.

"I have a couple bilingual employees who help," Mancuso says. "I'm going to have to learn Spanish. Two superintendents and two assistants have been here four years,

"The call came out of the blue. I had no thoughts of going anywhere." - TONY MANCUSO

so cold that Bermudagrass is risky to have because it's susceptible to winterkill.

"So we used zoysia and overseeded all the roughs with turf-type tall fescue," he says. "There are very oppressive conditions in St. Louis. I have the highest admiration for the group growing grass in St. Louis. The saying goes, 'You can go from St. Louis to anywhere and be successful.'"

In comparison, many courses in Atlanta

and they speak pretty good 'Spanglish.'"

Mancuso inherited everybody on staff and kept them. He has a staff of 60 in the summer and 35 during the winter.

"This was the next step up for me, partly because it's a larger operation," he says, adding that his budget is \$2.5 million. "Right now, I'm not doing anything at the town club, but I could be taking on the landscaping responsibilities there."

career management

things superintendents should consider when changing jobs

- 1. Changing jobs too often can look bad on a resume.
- 2. If one has changed jobs often, justify the moves.
- 3. Don't take another job just because it pays more.
- 4. Factor in any cost of living change.
- 5. Look into the history and philosophy of the club/course.
- 6. Analyze the business side of the club/course.
- 7. Evaluate the staff, maintenance budget and equipment.
- 8. Show energy and commitment to the club/course during interviews.
- 9. Look at the benefits offered.

10. Look at the relationship between you, the g.m., green chairman and members. Source: GCN research

For Mancuso, the transition has been smooth because he has roots in the South, attending college and beginning his career there.

"In my career, I personally wanted to host a major tournament, and I did; but now with this job, most likely I will not," he says. "I'd like to do it again, but if I don't, I feel good about what I've done."

Public to private

Before Cohasset, Misiaszek had been at Shaker Hills – a 13-year-old, 7,100-yard course that features bentgrass wall to wall - for six years. He says the job was challenging because the staff pushed through 300 rounds a day and had double shotgun starts twice a week during the summer. Because of this, it was a challenge to get all the maintenance completed. However, Misiaszek enjoyed seeing new faces every day and dealing with one owner, which made for quick decisions.

"The job gave me the opportunity to be creative," he says. "However, the place was a factory. The amount of play was a disadvantage. There were some first-time golfers who did more damage to the course than those who golfed regularly. And the



Tony Mancuso is responsible for a larger operation at Cherokee Town & Country Club than his previous job.

negative side of having one owner is that if he decides to do something goofy, you're stuck with it."

The big difference between Shaker Hills and Cohasset is that Cohasset has more funds and more support from the membership, according to Misiaszek.

"At Shaker Hills, the budget was \$500,000, and with a budget of that size, in addition to the number of people coming through there daily, there weren't enough resources," he says. "At Cohasset, I have more time to work on the golf course."

At Cohasset, which generates between 19,000 and 20,000 rounds a year, the grass varieties include ryegrass, bluegrass, fescues and some bentgrass. And the soils are complex with 40 to 50 feet of peat bog. The budget to maintain the 6,200-yard 18-hole course is \$1 million.

"And the capital budget is much higher than when I was at Shaker Hills, where every equipment purchase had to be approved," Misiaszek says. "The amount of money I spent in 2004 at Cohasset on capital expenditures equaled that of what I spent the entire time I was at Shaker Hills."

Conditioning the course at Cohasset also is different than at Shaker Hills. For example, Misiaszek has the equipment to mow greens below one-tenth of an inch.

"The course is hard and fast," he says. "We can take the threshold and push the floor. We have the money to implement proper IPM programs."

Cohasset's staff of 23 is larger than Shaker Hills, which staffs 18 during the summer. Cohasset had 12 full-time maintenance workers, which Misiaszek thought was unnecessary.

"I laid six of them off and kept six and rehired the rest of the crew, which are mostly Brazilian," he says.

Downsizing

One of the things Tipton looks forward to most at Eagle Ridge is renovating the old fairways and interseeding the new low-mow bluegrasses he used at Sutton Bay.

"I have had a lot of superintendent friends at other courses comment on how well the new low-mow blues perform," he says. "A lot of courses could benefit from making the transition, but I don't hear of many trying to accomplish it."

One difference with Eagle Ridge compared to Sutton Bay is that the course is located farther from the banks of the Missouri River. Because of this, Tipton has to use wells for irrigation water.

career management

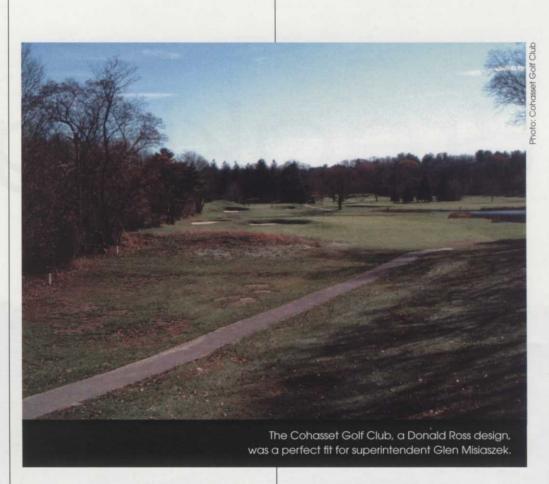
"The water is not as desirable as river water," he says. "I will be using a sulfur burner to treat the irrigation water to make it more usable. This should, in the long run, also correct some of the saline/sodic soil conditions at Eagle Ridge."

The biggest difference for Tipton with this new job is the proximity to the nearest town. The closest town to Sutton Bay was 30 miles away, so it was a 60-mile trip daily to the job and back. Tipton wanted to move to a less remote place and a stable community.

"Sutton Bay was a difficult course to maintain, partly because it was so remote and spread out," he says. "The distance from the clubhouse to the first hole is a mile and a half. The area we had to cover and the remoteness of the course was demanding. Getting supplies was difficult. There was no running into town for a spark plug. There was no room for error."

The budget at Sutton Bay was between \$250,000 and \$300,000 but should have been \$400,000, according to Tipton. Greens and tees were walk mowed, there was no local labor (it was all H2B workers), and there were 13 people on the crew.

"They ran a pretty tight ship," he says. A sharp contrast to Sutton Bay – which has a lot of outside influences on how the course should be managed according to Tipton – Eagle Ridge is a semi-private



"Some places won't interview you if you move too much because they view it as a negative," Tipton says. "But when you're terminated, you have no choice. I planned on staying at Sutton Bay. But I've got myself into the niche of grow-ins. It justifies the moving."

"Some places won't interview you if you move too much because they view it as a negative." - BRYAN TIPTON

course and has only one owner.

Tipton says it's hard to say what his budget will be at Eagle Ridge because the course is expanding to 18 holes, but he thinks it will be about \$200,000. Additionally, he will be able to hire most of his staff locally.

"It was a dream to go to Sutton Bay, but sometimes it drains you," he says. "Eagle Ridge is more of a fit. I had other opportunities at other places, but I like to do more than daily maintenance. I always want to improve a course. Some of these courses aren't the most desirable, but they need improvement and can boost my resume."

Words of advice

Even though superintendents change jobs for the better most times, they should think about changing jobs too often. Misiaszek says as long as superintendents can justify their move, there's nothing bad with changing jobs often. However, if one moves just for money and shows no commitment to a club, it will resonate negatively



on a resume. He also says that in the future, superintendents will change jobs more often because many of the older superintendents who stayed at clubs for 20 or 30 years are retiring.

Misiaszek recommends superintendents consider the cost of living when looking into another job.

"That can take an increase in pay and make it a decrease," he says.

Misiaszek also suggests looking at the history and philosophy of a club, as well as the business end of it.

"You don't want to jump to a sinking ship," he says. "Make sure the club is progressive. Evaluate everything – the staff, the budget of the past five years, the maintenance facility, the equipment – all that goes into making life happier."

Misiaszek says a superintendent needs to show a prospective club that he has the energy and commitment to take a course to the next level instead of being just the next superintendent.

A superintendent also has to assess much more than salary and benefits, but those have to be in line, Mancuso says.

"I know many people who've changed jobs for more money, but they ended up with a lot more headaches," he says.

"I work for the members, and the minute you think you're so important that you're indispensable, you'll be in trouble," he adds. "Three-quarters or more of the time jobs are lost is because of personality conflicts, and your ego gets the best of you and you think you're more important to the club than you are. Not many people are losing jobs because of agronomic problems. Superintendents have to get along with the club. Communication and relationships are everything. The longer I'm in this business, the more I cherish the relationships I have." GCN

John Walsh is the editor of Golf Course News. He can be reached at jwalsh@gie.net.

Design case study

Breaking the

Photo: Boulder Creek Golf Club