NOVEMBER 2016 | golfcourseindustry.com

GOLF

PLAYING DEEDSE

INDUSTRY

LEARNING TO SCRAMBLE WHEN GOLFERS ARE BLITZING YOU WITH TOUGH QUESTIONS

95225 96225 6805290 2020d TANKING MI 48824-3700

299 M. CINCTE DH - M3017 WICHICVN ZLVLE DNIAEBZLA DELE COOKINGHVW #0033943895% 47 #BKMCF ÓB *************CVB*KL FOL**C-070



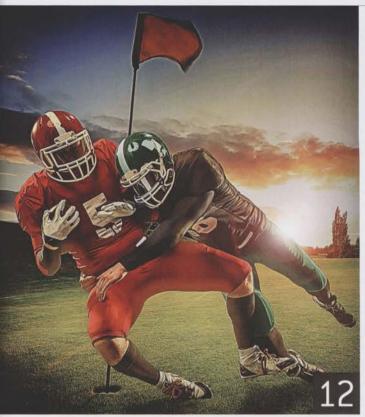
For its ninth U.S. Open, Oakmont trusted Lexicon[®] Intrinsic[®] brand fungicide

John Zimmers, Superintendent, and David Delsandro, Director of U.S. Open Operations and Projects, Oakmont Country Club

The pressure was on. As David Delsandro prepared for Oakmont's ninth U.S. Open, he turned to **Lexicon Intrinsic** brand fungicide. This foundational product for greens provides control of 27 diseases for up to 28 days, plus plant health benefits. John Zimmers said, "In my 17 years here, we produced some of the best roots, which helped deliver exceptional turf."

Visit betterturf.basf.us to view the Oakmont video and learn more about **Lexicon Intrinsic** brand fungicide.

VOL. 28 NO. 11



COLUMNS

- 18 GAME PLAN Henry DeLozier: Your most important function
- 24 IRRIGATION ISSUES Brian Vinchesi: Who is making irrigation decisions?
- 30 OUTSIDE THE ROPES Tim Moraghan: Are you prepared?
- **36 DESIGN CONCEPTS** Jeff Brauer: Devil in the details ... or the infrastructure
- 44 THE MONROE DOCTRINE Monroe Miller: My hero
- 50 NUTS & BOLTS Paul F. Grayson: Getting the band back together
- 58 PARTING SHOTS Pat Jones: Golfer-In-Chief

DEPARTMENTS

- 4 TEEING OFF: Content & Commerce
- 8 EDITORS NOTEBOOK: Triangle of thoughts
- 55 TRAVELS WITH TERRY: Equipment ideas
- 56 CLASSIFIEDS
- 57 AD INDEX

FEATURES

Cover story

12 PLAYING DEFENSE

Aeration, overseeding and, yes, green speeds. A template for providing sensitive answers to tough agronomic questions.

People

20 EXPERIENTIAL LEARNING

Two former colleagues draw from their past together to complete the in-house renovation of a championship course.

Safety

26 SAFE BEFORE SORRY

Regular measures to protect workers help eliminate avoidable hurdles to ethical, legal and financial success.

Management 32 CRASH COURSE

Recovering from a weather disaster requires organization, patience an understanding of science and plenty of fortitude. Insiders to Hurricane Matthew run through the steps they took after the weather event died down.

Construction

38 DIGGING IN DETROIT

New thinking, emerging technology propelling a venerable club into its anticipated next century.

Equipment

52 WHEN THERE'S LESS NOISE

Ohio course in prominent location relished its opportunity to participate in a demonstration program involving propane-powered mowers.





GOLF COURSE INDUSTRY (ISN 1054-0644) is published monthly. Copyright 2016 GIE Media Inc., 5811 Canal Road, Valley View, OH 44125. All rights reserved. No part of this publication may be reproduced or transmitted by any means without permission from the publisher. One-year subscription rate, \$33 in the United States, \$42 in Canada and Mexico, and \$88 in other foreign countries. One year foreign airmail rate: \$102. Two year subscription rate: \$65. Subscriptions and classified advertising should be addressed to the Valley View of the Valley View of GoLF COURSE INDUSTRY 5811 Canal Road, Valley View, OH 44125. Canada Post: Publications Mail Agreement #40612608 Canada Returns to be sent to Bleuchip International, P.O. Box 25542, London, ON N6C 6B2

Introducing the newest member of the MD family

Country Club[®]MD 0-0-24



- 100% water soluble potassium sulfate (SOP)
- 3% Fe, 2% Mg, 1% Mn
 micronutrients
- Contains MD's "stress-buffering biostimulants"

Country Club MD 0-0-24 is the latest product developed for golf course superintendents who want to utilize a high K product with beneficial micronutrients to help maintain their turf's health and vigor, while also protecting their course with the stress-buffering biostimulants of humic acid and sea plant kelp meal. Turf treated with these MD product biostimulants will outperform untreated turf in overall quality and playability during stressful conditions.



Best of All Worlds® www.LebanonTurf.com 1-800-233-0628

000

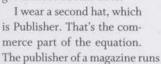
TEEING OFF

CONTENT & COMMERCE

s I write this, I am up to my ass in alligators trying to balance my two worlds: Content and Commerce. Allow me to explain.

I wear two hats here at GCI. I am Editorial Director, which

allows me to fiddle with story ideas and go to the U.S. Open for free. Mostly it's about creating content. The content part of my job is the fun bit. It's writing, Tweeting, giving speeches, creating videos, recording podcasts, visiting courses and supplier facilities, and working with my team to get an issue out the door.





Pat Jones Editorial director and publisher

the enterprise, including media sales, marketing, business development, relationships with clients and managing a P&L. It's not as overtly fun, but when you're doing it right, it's awesome.

Right now, both the Content and Commerce parts of my world are hopping. We're producing content like crazy, including issues, e-newsletters, social media content and getting ready for our huge Turfheads Take Over Issue next month. I'm also doing events including the Carolinas GCSA Conference & Show in Myrtle Beach and the Ohio Turf Foundation show in Columbus.

It's the commerce part that's really crazy right now. This is the time of year that we work with suppliers to develop their advertising programs for next year. My sales team and I spend most days talking with clients and trying to figure out the best program for them. Fortunately, we don't have to spend a lot of time convincing them that we're a good partner for them on the advertising side. You already did that for us. How?

We arranged an independent, blind study of the various magazines in the market to help advertisers sort out the best ways to reach superintendents. We know you love us, but we needed to prove it to those marketing managers and advertising agencies who make those decisions.

We were pretty happy with the results. You chose GCI (by a nose over GCM) as the overall best publishing group in the market for both print and digital.

(see chart 1)

You also seem to like us a lot for digital and social media (see chart 2)

There were a couple of other great results, including a question about editorial leadership. Apparently we don't suck

4 NOVEMBER 2016 golfcourseindustry.com



Country Club

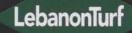
DON'T COMPROMISE. COLLABORATE.

The best way to provide superior turf quality is to manage it from both sides. That's why LebanonTurf recommends using Country Club[®] MD and Emerald Isle Solutions[™] products together to achieve both short-term control and long-term stability.

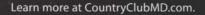
Country Club MD fertilizer works from the soil up, providing a reliable and predictable dose of slow-release nitrogen and stress-buffering biostimulants. Emerald Isle foliar products perform from the leaf blade on down, giving you control and the ability to micromanage your turf.

Working together with LebanonTurf means you'll get superior technology, on-time distribution and outstanding value. Country Club MD and Emerald Isle work in unison to bring a new level of consistency, quality and playability to your turf.

Country Club MD... so you don't have to micromanage. Emerald Isle... because you know you will.



Best of all Worlds[®] www.LebanonTurf.com 1-800-233-0628

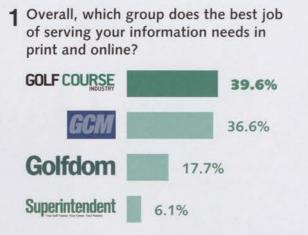


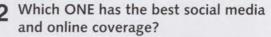


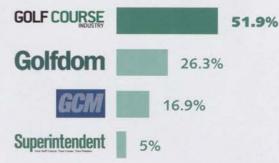
too much in that respect either.

If you want to see the full results and all our marketing stuff and media kit, you can simply enter the following link into your web browser: http://bit.ly/2eXqBfU.

So, if you're a supplier who wants to tell your story to superintendents, we hope you'll give us a call. We can help. And, if you're a turfhead, both the Editorial Director and Publisher have one simple message for you: Thanks for reading! **GCI**









(800) 668-8873 (519) 527-1080 fax: (519) 527-2275 www.progressiveturfequip.com info@progressiveturfequip.com



The Better Built Choice."

For over 20 years, professionals worldwide have relied on Progressive mowers, Find out why a Progressive mower is ... The Better Built Choice.TM

Elite courses like Pebble Beach Golf Links have discovered the power of the Rain Bird IC System. Learn more and request a demo at www.rainbird.com/golf



Delivering the green with the Rain Bird[®] IC System.[™] That's intelligent.

See green, be green, save green with the most innovative irrigation

system ever. One-piece integrated control at each rotor means world-class conditions with less water and energy. 750 rotors per wire path means less wire and less equipment. Industry-leading surge protection and fast, pinpoint diagnostics means less maintenance. The Rain Bird IC System: great for your course, great for the environment, and great for your budget.

Ram Binl is the official impaction supplier of Petible Boach Resont," Pebble Boach Golf Links," Petible Boach Resints," The Line Cypers', The Hentage logs and their underlying distinctive images are trademarks, service marks and trade dress of Pebble Boach Company, Used by permission.



NOTEBOOK

Green Start Academy attendees prepare to tour the John Deere Turf Care Factory in Fuquay-Varina, N.C. Green Start Academy



TRIANGLE of thoughts

Consistent playing experiences, talented assistant superintendents, enthusiastic research. GCI's Guy Cipriano empties his notebook from three days spent with savvy people.

OBSERVATIONS FROM A THREE-DAY WHIRLWIND through North Carolina's Research Triangle...

DAY 1

Old Chatham Golf Club is a Rees Jones-designed course opened in 2001. The club rests on 400 secluded, wooded acres in Durham, N.C. New housing developments creep toward the gates, yet once on property, a clubhouse and guest cottage are the only visible structures.

Brian Powell, a second gen-

eration, North Carolina-bred superintendent, arrived before the first tee shot was struck on Sept. 8, 2001. The world changed three days later.

The world around Old Chatham has changed. The Research Triangle's popula-

Snow mold's unluckiest number.

TURFCIDE". 13 field trials. At least 94% control. 100% of the time.

Recent field trials compared the performance of TURFCIDE, as part of AMVAC's recommended fairway snow mold control program, to competitive programs.

The results proved that the AMVAC program was not only more effective than the competition, but it also provided excellent snow mold control. In all 13 trials.

SEE THE DATA. Visit amvac-chemical.com to learn more.

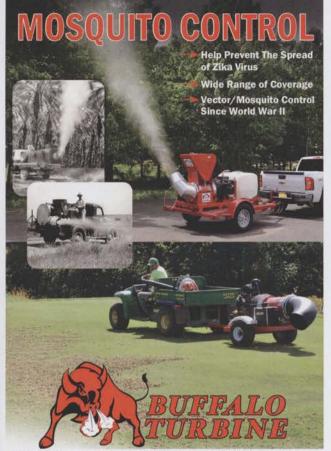
TURFCIDE provided at least 94 0/0 control in 100%

of the trials.

Contact your AMVAC/AEP distributor or call AMVAC at 1-888-GO AMVAC (1-888-462-6822). Learn more at amvac-chemical.com.

"AMVAC recommended show mold control program includes TURFCIDE® at 8-fl. oz. and Concert® II at 8.5 fl. oz. 2015 AMVAC Chemical Corporation. All rights reserved. AMVAC, TURFODE, the AMVAC and AEP logos are trademarks owned by AMVAC Chemical Corporation Concert II is a trademark of Syngerta Group Company. Always read and follow label directions. www.amvac-chemical.com. AV-2015-TURFODE100WS





180 Zoar Valley Rd, Springville, NY 14141 | ph 716 592 2700 | www.butfaloturbine.com | Dealer Inquiries Welcome



NOTEBOOK



The Olympic Club's Pat Finlen leads a group discussion with assistant superintendents at Green Start Academy.

tion hovered around 1.1 million in 2000. The total has swelled past 2 million. Compared to everything around it, Old Chatham's changes are subtle, although Champion Bermudagrass replaced bentgrass greens in 2012 and pleasing native areas have supplanted eight acres of mowed turf. Powell and his team create repeatable and pleasurable golf experiences. Fairway and rough heights, and yes, even green speeds, are no secrets because they are stated on the club's website.

Powell is a past Carolinas GCSA President. Director of golf John Marino is the current Carolinas PGA President. Both are widely respected. Both have worked at Old Chatham since its inception.

Day 1 conclusion: Consistency separates elite clubs from middling facilities. Old Chatham offers a template for green committees and board of directors. Hire and strive to retain quality leaders. Tell them what you want to become. Let them execute their jobs and give them the tools to do it.

SECOND DAY

Bayer golf business manager David Wells opened the educational portion of the 11th annual Green Start Academy with a cheerful proclamation. "I think the golf industry has a bright future," he told a room filled with 52 assistant superintendents.

Spend a few days with a group of assistant superintendents, and it's hard not to get excited about the future. A savvy, determined, well-trained and increasingly patient group descended upon Research Triangle Park for Green Start Academy.

Job candidates are spending an average of 4 ½ years as assistant superintendents before becoming superintendents, according to GCSAA research. The average age of a superintendent is 46 years old. The average time spent as a superintendent is 16 years.

The talent glut means some facilities boast two and perhaps three professionals

NOTEBOOK

ready to lead a maintenance operation. By carrying larger roles for extended periods, assistant superintendents are more prepared than ever to succeed when landing a head position. Waiting to fulfill career goals is tough. But patient assistant superintendents are making the industry stronger.

Day 2 conclusion: It's too bad outsiders with lukewarm views on the industry don't receive an opportunity to attend an event like Green Start Academy and meet its participants. They'd be bullish on golf too.

THIRD DAY

One is the general physician. The other is the specialist.

Lee Butler and Dr. Jim Kerns, along with their NC State colleagues, provide a tremendous service. Their diagnostic work drives research. If superintendents are sending an abundance of samples infected with pythium, they increase pythium research.

One day Butler and Kerns might receive a sample from a superintendent at a top 100 club in a different time zone; the next day a local superintendent might personally drop off a sample. There's no room for error. A misdiagnosis could put a career in peril.

Trust is a major component of plant pathology, and funding concerns create uneasiness about the future of reputable turfgrass research and diagnosis. NC State is in a fortuitous spot because it rests in the epicenter of a region where personal interactions don't require plane tickets and key industry stakeholders in the Carolinas understand the value of collaboration.

After visiting NC State's plots and labs, we met with Hope Valley Country Club's David Lee, a rare superintendent with a PhD. Lee maintains a turf nursery where trials are performed between the second and third holes. When you're touring the course with plant pathologists, you can't miss it.

Day 3 conclusion: Get to know the Butler and Kerns of your region. Support what they do. If possible, establish a nursery at your course that permits research. Not only will you sleep better when something doesn't look right. You will help the next person with a turf issue. GCI

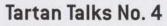
Percent Control

Zero Competition

In 13 field trials, TURFCIDE, as part of AMVAC's recommended fairway snow mold control program, proved to be more effective at controlling snow mold than the competition.

SEE THE DATA. Visit amvac-chemical.com to learn more.

Contact your AMVAC/AEP distributor or call AMVAC at 1-888-60 AMVAC (1-888-462-6822). Learn more at annvac-chemical.com.



Damian Pascuzzo joined us for the fourth installment of our "Tartan Talks" podcast series profiling ASGCA members. Pascuzzo is based in California and saw rain outside his window during our conversation with him. A good omen for California's new water year that started Oct. 1? Enter bit. ly/2edPhxf into your web browser to



hear Pascuzzo's thoughts on the current water situation.

Turfe

Turfcide: AMVAC AEP

Snow Mold Control (%) on Fairways

98.6

AERATION, OVERSEEDING AND, YES, GREEN SPEEDS. A TEMPLATE FOR PROVIDING SENSITIVE ANSWERS TO TOUGH AGRONOMIC QUESTIONS.

By Anthony L. Williams CGCS, CGM

he golf course industry can occasionally be a tough place to be. At times it may seem like you are in the UFC Octagon, championship boxing ring or perhaps an elementary school playground, especially if you are a golf course superintendent trying to provide cutting edge playing conditions with limited resources.

This razors edge within the golf course management world is known to all but seldom talked about. So how do you know when or even how to defend your ground when it comes to complaints about course conditions, staff, projects, budgets, frost delays, rain, ball marks or divots? You know the story and you can feel the storm rising when a golfer or staff member approaches you. Here it comes, but wait: Is the complaint valid? Who is on your side? How many sides are there? What is at stake? Who is keeping score? There are a lot of questions, but there are also some great an

COVER STORY

swers as well. Let's take a look at three of the most common areas that generate complaints that might force you to defend your ground and review some strategies for success with minimum stress. The three issues in no specific order are aeration, overseeding and the last but certainly not the least, green speeds.

AERATION

Since the very first green aeration was scheduled, canceled for an event, rescheduled, then contractually forbidden forcing someone to aerate one green per week at night during the off-season, we as golf course superintendents have endured the 15-round heavyweight fight that can be aeration. Aeration is a critical part of a sound agronomic program, especially for putting greens. There have been hundreds of articles written on the benefits and informative signs posted all over the golf shop, yet each season the fear of aeration strikes. "Why are you aerating? The greens are perfect and my Dad is coming here to play next week and now it's going to be unplayable." Sound familiar. Here is the three-step program to defend your ground and have a successful aeration while minimizing complaints.

 Schedule your aerations as far in advance as possible and gain the 100 percent support of the entire golf operation (signed documents have been used in some cases). Make sure everyone is speaking the same message whether they are managers or hourly associates. This applies to all social media as well.



Repeatedly reminding stakeholders about processes that will occur before aeration and setting a realistic timetable for recovery can help a superintendent avoid potential problems.

- 2. Overcommunicate in person (tweets, texts and email are considered extra credit but will not be a substitute for face-to-face conversation) to all the stakeholders the processes that will take place (tine type and size, amendments to be applied, topdressing, vibratory rolling, etc.) and then be realistic about the time it will take for greens to recover. Earn their trust each day and face any complaints head on, personally with empathy and information. Be seen and heard often.
- 3. No matter how well you do steps one and two there will be very little carry over from one season/aeration to the next. Assume that no one knows (or remembers) anything about the aeration process and repeat steps one and two with enthusi-

asm for every aeration.

The fear of aeration is very real to the golfer; they want you to never interfere with "their" game so it is important they understand and ultimately share "your" commitment to high-quality turf through a steadfast commitment to sound agronomic and cultural practices. Remember, it is all for the good of "our" game. Defend your ground!

OVERSEEDING

To overseed or not to overseed? That is the question. The whole process is ripe for complaints. Play during the overseeding establishment is full of complaints and if the base turf goes dormant without overseeding, then that is the issue. I know of a course that overseeded their Bermudagrass tees and fairways for 20 straight years and then decided not to overseed for one year to complete an irrigation renovation. In the dead of winter, the superintendent got a call to come to the general manager's office where a golfer was waiting with a major complaint. The golfer had a brochure advertising the club in his hand with a cover photo of the signature hole taken in mid-July. "The course I saw today is all wrong. It's not the one in the brochure. The grass is all brown. You should fire the superintendent immediately," the golfer said. Everyone has an opinion about the need for overseeding whether it is greens only or tees and fairways - but they may not have all the facts. It seems that many superintendents get caught in this cycle of educating the stakeholders on which grass is looking good and when and will there be a financial return on investment, or will the agronomics of the competing grasses have

a negative impact next year. On and on the debate goes. But wait, we could use paints or pigments. More choices to divide the faithful. The golfer wants green grass all year; the property needs to find a miracle.

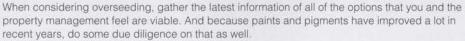
This fight plays out differently every year because weather, seed prices and a dozen other factors can make a good program turn bad and then the complaints roll. What is a successful superintendent to do? Do your homework, and keep your hands up every year. Gather the latest information of all of the options that you and the property management feel are viable. Include all costs and perhaps give a few options on type of seed, seeding rates, etc. And because paints and pigments have improved a lot in recent years, do some due diligence on that as well. Call around and talk to other superintendents in the area

C ... THE PROS AND CONS OF OVERSEEDING AND PAINTING ARE NUMEROUS AND COMPLEX AND TEND TO DIVIDE PEOPLE FASTER THAN A COLLEGE FOOTBALL RIVALRY."

(attend a conference or webinar) and get a feel for what is happening within the market and when you are convinced that there is one most logical option present it to the owner/ general manager and defend your ground!

One last piece of advice in this area ... the pros and cons of overseeding and painting are numerous and complex and tend to divide people faster than a college football rivalry. If you are not the owner or highest authority and the owner/higher authority wants you to do the opposite of your recommendation after you have given all the appropriate data to support your recommendation (for example, they decide to overseed and you would rather paint), then march on and defend the common ground while keeping good records for next year's due diligence. It will demonstrate a spirit of compromise and teamwork. Remember, when it comes to defending your ground, knowing where





you stand is important. Defend your ground with genuine love for the property, but do not risk your job over a difference of opinion. Sun Tzu in "The

Art of War" said it best, "Do

not engage if you cannot win."

GREEN SPEED

How fast are the greens today? Now think about it for a minute before you answer. You know they were double cut and rolled yesterday for the big 144-player events at 8 a.m. and 2 p.m. And today you just rolled greens to give them a break, knowing that the bentgrass will be facing a 100-plus degree heat index today. Now it is 3 p.m. and the first discounted tee time is on the tee.

He wants you to say 12' on the Stimpmeter as of 2:55 p.m., but you know he is a 26-handicap and can barely handle 9'. You think they are rolling around 10', but have not stimped them today. Then you realize he has a Stimpmeter (that he bought online) in his golf bag. Conundrum. And he has not even complained yet, but should he not putt well during his round expect the old adage of better slow greens than no greens to disappear like a golf ball in the rough at the U.S. Open and your name to be used as fertilizer in refer-

COVER STORY

ence to green speeds.

Seriously, why all the bother about a number that reflects green speed? It is likely because the average golfer does not understand the fertility, water, grooming, brushing, verticutting, topdressing or rolling that results in how smooth and fast a ball rolls on a green. But they know 12' on the Stimpmeter because they hear it while watching the weekly golf event on TV.

When I started in the golf business, the question was how are the greens, not how fast are the greens? And as long as they were healthy, consistent and smooth, all was well at Camelot GC. Today is another story. With cell phones, social media and greater competition for golfers, the fight about green speeds as a number is in the superintendent's face daily.

How do you handle the pressure and defend your ground?

First, if you are going to post a green speed number, make sure that it is accurate and that it will hold up under scrutiny. Find ways to connect a message of green consistency and health as factors in man-



Many golfers understand what a 12' means on the Stimpmeter, but they aren't educated about factors such as fertility, water, grooming, brushing, verticutting, topdressing or rolling that ultimately produce a specific speed.

constantly complaining about green speed, invite them to come with you, stimp a few greens and talk about the process including personal and club expectations. Make sure that your course set-up staff are preparing with green speeds in mind and be sure to read any comments from surveys or social media and our club is at another level. But be prepared to defend your ground be it 9' or 13'. Match your programs to the needs and expectations of the club.

Well, we made it through the fight and handled all of the complaints. Thanks for sticking with me and I hope you found a few strategies to help you in your ongoing fight



C IF YOU HAVE MEMBERS THAT ARE CONSTANTLY COMPLAINING ABOUT GREEN SPEED, INVITE THEM TO COME WITH YOU, STIMP A FEW GREENS AND TALK ABOUT THE PROCESS INCLUDING PERSONAL AND CLUB EXPECTATIONS."

aging speed and/or ball roll whenever you can. Do you have a blog or newsletter? If you have members that are react accordingly. Pushing for faster green speeds is natural for competitive golfers and superintendents to say that for success. The modern golf course superintendent faces challenges and criticism every day, but it is his love for the game and his role in it that keeps him sharp and capable. It is more important than ever for a superintendent to be savvy in many areas and interests so that he may defend his ground while taking the criticism of others as a constructive means to validate his decisions and grow. In closing, I am reminded of the words that legendary golf course superintendent Palmer Maples Jr. once told me, "If you have not lost a little grass, then you are not trying hard enough. You need to know how far is too far and what tolerances exist within intense conditioning and what steps to take under certain situations. Solving problems that improve and protect the course and the golfers' experience should be our highest calling." Words to live by. GCI

Anthony Williams is a retired Georgia superintendent and a frequent GCI contributor.

GREENWORKS



ERCIAL GRA

COMMERCIAL GRADE POWER





GL 250



Now available at

The Most Powerful Cordless Commercial Tools on the Market

Find out more at www.greenworkscommercial.com



YOUR MOST IMPORTANT FUNCTION



Henry DeLozier is a principal in the Global Golf Advisors consultancy. DeLozier joined Global Golf Advisors in 2008 after nine years as the vice president of golf for Pulte Homes. He is a past president of the National Golf Course Owners Association's board of directors and serves on the PGA of America's Employers Advisory Council.

ur firm stresses the importance of strategic planning. Our view is your club and course will never reach its potential without a plan that clearly states where you want to go and how you intend to get there. But we would be the first to acknowledge that the best strategic plans are doomed if they're not linked to a disciplined set of actions.

That's also the view authors Larry Bossidy, the former CEO of Honeywell, and renowned consultant Ram Charan explain in their book "Execution: The Discipline of Getting Things Done." In fact, they say execution, long dismissed as a tactical endeavor, is a business leader's most important function.

The obstacle in linking strategy to action is that leaders have long considered execution the tactical side of business, something they should delegate while they focused on the perceived bigger issues. To that, the authors say bunk.

Here are three straightforward actions that will help club leaders execute their strategic plans:

1 DEVELOP AN ACTION PLAN THAT COMPLEMENTS YOUR STRATEGY

A strategic plan describes the primary goals and objectives for the club. Hopefully, the plan is supported with thorough market research and a genuine understanding of the club's needs and its members' wants. The plan should acknowledge leaders' primary responsibilities: to protect the assets of the corporation, ensure and sustain effective guidance, and manage the financial capabilities of the club responsibly.

But the best strategy gathers dust if not accompanied by a detailed action plan that outlines how the strategy will be implemented. Let's say one element of the strategic plan is to improve the quality of greens to enhance the image of the club, which would pave the way for an increase in fees and dues. How is that going to happen? Not simply by writing it into the strategic plan, that's for sure. What are the resources needed? What's the budget? What's the timing for the project? How will success be measured?

2 COMMUNICATE THE ACTION PLAN

Members want transparency. They want to know what is happening at and with their club. Members want the board and leaders to demonstrate an awareness of the expectations of their broad constituency. Communications should be:

Frequent. It's hard to overcommunicate. Town halls and open-member sessions can be held quarterly so members have a chance to see, hear and question their leaders. Letters, emails, texts and social media platforms should all have a place in your communications action plan. Use each to take advantage of what they do best. If you're unsure how members and customers prefer to hear from you – and on what schedule – ask them as part of a simple survey.

Easily accessed. Most clubs are a swirl of rumors, partial stories and misdirected applications of information. Create one location where members can obtain accurate information. This can be a virtual destination with clear-cut structure and rules of engagement.

Personal. Calling trees that assign specific board members and leaders to specific segments and small groups of members give your communications a personal touch. A one-on-one conversation is also still the best way to understand what a person is really trying to communicate. This approach is gathering new strength in clubs where many members know the effectiveness of small-group communications that keep youth sports and after-school activities running efficiently.

Stay on message. During an election year, this admonition is repeated repeatedly. Candidates have what's known as their "stump" speech, and they give it time after time, customizing it slightly for the occasion and audience. Similarly, club leaders are most effective when they communicate goals, objectives and key messages in consistent language.

Golf course superintendents are often called upon to be more communicative. Often, superintendents divulge only what they must and, as a result, information flow is incomplete, sporadic and pressured.

The top superintendents plan their communications as carefully as their agronomics. They know what and when they need to communicate important issues. They deliver clear and succinct messages that are timely and authentic. A thorough agronomic plan must include a section dedicated to active communications. **GCI**

A 100% Natural & Organic Fertilizer & Soil Amendmen

- For use year round (optimal timing spring and fall)
- Conditions the soil and improves playability
- Contains non-ionic wetting agent for improved performance
- Ideal to use after aeration or other mechanical treatment.
- Water in for best results



GRIGG BROS.

Specialty Fertilizers

For more information scan or link. http://gri.gg/info1601

For a Distributor Near You Call: **1-888-246-8873** or find us on the web at: www.griggbros.com

















Experiential Learning

Two former colleagues draw from their past together to complete the in-house renovation of a championship course.

By Patrick Williams

he odds were against this odd couple: a golf course ownersuperintendent looking to open a second course mid-recession, and a former superintendent running a landscaping company amidst the housing market crash looking to reenter the golf industry.

Jim McNair Jr. took a gamble when he bought the semi-private Cedar Creek Golf Club, a 7,200-yard championship course in a retirement community in Aiken, S.C. As the owner of the nearby Aiken Golf Club for more than a quartercentury, McNair previously considered Cedar Creek competition. After he decided to buy it, five banks declined his loan requests before a local bank helped him out. He saw the potential to renovate the course — to preserve its Arthur Hills design and improve play for its members



Superintendent Gary Frazier, left, and owner Jim McNair Jr. reconnected to renovate Cedar Creek Golf Club in Aiken, S.C. McNair purchased the Arthur Hills-designed course in 2012.

guests. "What drove me to purchase it was No. 1, to combine the two courses, take away my competition, have an ability to draw from the greats," he says. "The seniors that play out here — they're all active; they've got the money and the time."

Gary Frazier worked as Mc-Nair's assistant superintendent at Aiken Golf Club from 1997 to 2000, and helped him complete a 100 percent in-house renovation. Frazier then took the roles of assistant superintendent at Palmetto Golf Club in Aiken and superintendent of the now closed North Augusta Country Club in North Augusta, S.C., before leaving the industry to open a landscaping company. In 2012, he heard McNair purchased Cedar Creek, so he knocked on McNair's door at his home, and McNair hired him as superintendent.

That same year, the fiveyear in-house project began to transform Cedar Creek's into a more playable destination for seniors and retirees. Standing in the shadow of renowned architect Hills, who designed the course in 1991, proved humbling. "You get a little nervous about it because you try to keep the architecture that was there intact as much as possible, but sometimes you just can't," Frazier says. "You've got to make the changes that you need to make to fit what you have at the club." As the renovation nears its final days, those changes are beginning to lend aid to McNair and Frazier, and ease operations at the club.

For the Cedar Creek project, McNair pulled from his experience renovating Aiken Golf Club, which his father purchased in 1959 and he bought in 1985; Frazier pulled from that same experience as



Top: The fifth hole at Cedar Creek Golf Club in Aiken, S.C., before a 2015 renovation. Bottom: The hole following the renovation. Adding a retaining wall and rebuilding the green creates what owner Jim McNair Jr. calls "kind of a signature hole for us now."

well as another renovation he experienced at North Augusta. At Cedar Creek, they performed the entire renovation themselves, save for tee laserleveling and turf installation and the removal of 650 trees, which they contracted out. Major improvements included the tiering of fairways and reducing slopes; addition of higher handicap tees; conversion from TifDwarf Bermudagrass greens to MiniVerde Bermudagrass greens; conversion from 419 Bermudagrass tee tops, fairways and aprons to TifGrand Bermudagrass; installation of a new irrigation system and practice facility; and the decrease in rolls and undulations on putting surfaces.

In 2012, McNair heard news from his Toro representative that Charlotte Country Club was redoing its irrigation system and the superintendent was willing to sell satellite boxes for \$200 apiece. "It saved us \$60,000 that we were able to put to use in other areas of the golf course," he says. Early renovation was also marked by the construction of a teaching center that includes three covered hitting bays, a 7,000 square-foot MiniVerde Bermudagrass chipping and putting green, and an indoor computer swing analysis.

McNair and Frazier completed the front nine renova-



tion between mid-May and mid-October 2015, and plan to finish the back nine and reopen it in mid-October. When they renovated the front nine, they kept the back nine open for play. Now, as they renovate the back nine, the renovated front nine is open for play. Cedar Creek members, who McNair estimates make up about 60 to 70 percent of rounds played, and their guests can visit Aiken Golf Club, and vice versa.

The majority of architectural changes were in the fairways, while the 419 Bermudagrass roughs stayed intact following what McNair describes as Hills' "fantastic" shaping. McNair and Frazier went in with a 450 bulldozer and made major design changes on a couple holes. "Jim and myself pretty much did the majority of the renovation work on the backside with all the heavy equipment and the architectural changes," Frazier says. "And then I pull the staff off when we have days where we bring sod in. At that point, I cannot mow greens that day and rake bunkers and mow the rough and mow tee surrounds and green surrounds. The daily maintenance stuff we can leave for a day."

The new grasses have helped Frazier balance daily maintenance with the renovation work he tackles later in the day. Crew cut the TifGrand less often than they used to, and they could cut the MiniVerde less often if they needed to. But high-quality ultradwarf Bermudagrasses such as MiniVerde can present a trade-off for superintendents, Frazier says. "To some degree you can have a little less maintenance, but there's other avenues that you have to do on a regular basis, like the topdressing, verticutting, grooming and brushing on the putting surface," he says.

When renovating the fairways, McNair and Frazier sprayed them three times with weed killer and sprigged in the TifGrand. They also sodded it on the aprons. TifGrand has been around for several years, but it is fairly new to South Carolina, McNair says. "It's a very tight, very dense, dark Bermuda, and it's drought-tolerant and it stays greener longer in the fall; it's a fantastic grass," he says.

The renovation also consisted of removing and improving bunkers, repaving cart paths and opening up native areas. McNair and Frazier removed bunkers and reworked existing ones by adding fingers, sharpening edges and installing TifGrand on their faces. They converted cart paths from asphalt to concrete (they still aren't wall-to-wall) and added native sand areas where they planted native vegetation, which then allowed them to cut back on irrigation, chemicals and fertilization.

A lot of stress comes along with an in-house renovation, Frazier says, comparing the Cedar Creek project to the one he contributed to at North Augusta, which was primarily contracted out. Using Aiken Golf Club as a model - along with the last four years - Mc-Nair and Frazier have seen the opportunities their partnership can afford them. "It's a tremendous amount of work that has to be done in a short period of time," Frazier says. "We've done it with minimal resources, and I think we're going to have a great quality product." GCI

Patrick Williams is a GCI contributing editor.

The Aiken renovation

Jim McNair Jr. glimpsed at strata of history when digging up the greens at Aiken Golf Club – he says they were laid down by none other than Donald Ross.

The legendary designer, per McNair's telling, originally routed the course, and his protégé John R. Inglis later took the routing and added holes of his own. The club opened in 1912. Twenty-two years later, in 1934, McNair says Ross returned to convert the old tar-based sand greens to grass. "So when I came in and excavated these greens, I was like an archaeologist," McNair says. "I was digging through — I found the old clay layer, I found the old tar layer." He found the quick coupler, that single brass entity placed conspicuously in the middle of the green and meant to water the whole surface.

Jim McNair Sr. bought the course in 1959, and in the 1960s, he drove around his son in his truck at night and shone his headlights on him as he placed the sprinkler on the greens. A few years later, McNair Jr. began working at the course as a summer job. He caught the golf bug, attending Clemson University on a four-year full golf scholarship (and graduating with an English degree), playing a PGA Tour mini-tour and working as an assistant professional at Burning Tree Club in Bethesda, Md., and Harbour Town Golf Links in Hilton Head, S.C. After he bought Aiken Golf Club in 1985, he juggled roles as both golf professional and superintendent.

From the time McNair's father bought the course in 1959 until he retired in 1985, he had never performed a major renovation. In the late 1990s, McNair, with a decade of ownership under his belt, decided he would try it out. He enlisted the help of his superintendent Gary Frazier. They ran pipe for a new Rain Bird computerized irrigation system complete with 350 new heads; removed 3,000 trees; constructed all new greens; and reshaped and regrassed fairways, roughs and bunkers. The club extends a mere 5,800 yards from the back tees. "In order to make it a challenging golf course we had to do a lot of undulations and movement in the architecture downtown to combat the short yardage," Frazier says.

Performed all in-house, the project took three years but cost less than \$1 million. McNair and Frazier converted the combination common Bermudagrass, Bahiagrass and 419 Bermudagrass fairways and roughs to 419 Bermudagrass. They switched out the 328 Bermudagrass greens with TifEagle Bermudagrass — making the greens the first in South Carolina to be grassed with TifEagle. "I had to completely core all the greens out, put in all new drainage, rock — I did USGA spec greens the specified gravel with the 80-20 mix," McNair says. "It was a major undertaking." In 2006, McNair replaced several 419 Bermudagrass tees with TifGrand, and in 2010, converted three tees to Diamond zoysiagrass to address shade issues.

Aiken Golf Club assistant superintendent Ed Piccolino currently leads the maintenance crew as McNair focuses on the Cedar Creek renovation, and he does it with a budget below \$300,000. "In the wintertime, we're at four (employees), and then during the summer we're at about seven to eight," McNair says. "And you know these kids — they're doing your string trimming and they're raking bunkers and they're doing a lot of manual-type stuff, and walk-mowing greens. We walk-mow all of our greens."

WHO IS MAKING IRRIGATION DECISIONS?



Brian Vinchesi, the 2015 Irrigation Association Industry Achievement Award winner, is President of Irrigation Consulting, Inc., a golf course irrigation design and consulting firm with offices in Pepperell, Massachusetts and Huntersville, North Carolina that designs golf course irrigation systems throughout the world. He can be reached at bvinchesi@irrigationconsulting. com or 978-433-8972 or followed on twitter @bvinchesi.

s we all know, since 2008 things in the golf industry have changed. One area that has changed more than I would have thought is who decides what parts of the golf course are getting irrigated. Before, it was mostly a superintendent's decision, but in many cases, now there is a formal committee or group of people who are weighing in on irrigation coverage. And this is not just a private club issue. Surprisingly, this trend is also occurring more and more in the public golf sector.

Which parts of a golf course get irrigated influences both directly and indirectly many different aspects of an irrigation design. From a designer's standpoint, it is very important. Coverage limits need to be determined at the very beginning of the design process. Not all golf course irrigation systems are wall to wall. In fact, very few are, so irrigated areas must be carefully determined. Greens, tees and fairways are not under discussion. However, areas where decisions need to be made include various parts of the rough, bunkers, the area between the tees and fairway, how much green surround is watered, the practice range, and native areas. Usually fescues areas are not irrigated, but sometimes they may be irrigated in the event they're converted to turf in the future.

Irrigation coverage obviously di-

rectly affects the number of sprinklers installed, which directly impacts water usage. Water use then affects the pump station size which influences the mainline pipe sizing. The number of sprinklers also affects the number of controllers or decoders and therefore wire size and communication routes and the number of interfaces. More importantly, the amount of coverage affects the costs. Once the number of sprinklers is determined, then the cost of an irrigation system installation and the required flow in gallons per minute of water can be accurately estimated. Because of the

high price tag of today's systems and their cost implications, there are more interested parties in what is getting covered than just the superintendent.

Who should make these cover-

age decisions other than the superintendent? Depending on the club/ course, the pro and general manager may be involved, or both. At others, it will be the greens or golf committee, and sometimes the whole board. Lately it seems it is an "irrigation committee" consisting of members of the greens committee and several board members. Having board members on the irrigation committee involved in the process makes it much easier to sell the project to the board as they will know the answers to members or players' questions and can explain the process undertaken to the rest of the board which gives it credibility.

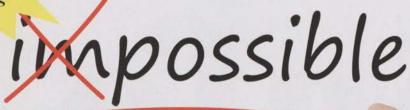
When considering coverage, what do you or your "committee" want to take into consideration? I am a firm believer that you go for the most coverage you want first and then figure out if you have the water and budget to support a new or upgraded irrigation system. If not, then start cutting back. As a minimum you want to consider the basics: ins and outs on the greens, tees and fairway coverage - be it double row, triple row or wall to wall. You may want to consider ins and outs on the fairways, which has become very popular. Approach sprinklers and bunker irrigation are additional considerations. It is important to be consistent - what is done on one hole should be done on all holes. You want the golf course to have a consistent irrigated look. For example, if you water between the tee and fairway on one hole, you should do it on all of them unless there are differences

It is important to be consistent – what is done on one hole should be done on all holes. You want the golf course to have a consistent irrigated look." in the planting, such as turf versus fescue or native. To help sell such a large project, you will also want to consider other important areas that might require irrigation such as tennis courts, the clubhouse

grounds and the course/club entrance.

Involving other interested parties in the decision of what will and will not be irrigated on your course helps to both expedite getting a new irrigation system and justify the need and cost. By engaging others there are more proponents of the system, which can only help the irrigation project move forward. **GCI** making the impossible ...

90th year in the sharpening business!





FOLEY UNITED DELIVERS - THE LARGEST LEAP IN GRINDING TECHNOLOGY IN TWO DECADES

Accu-Master 653 and Accu-Pro 633 offers:

- Automatic Reel Positioning with a revolutionary adjustable rear roller mounting system.
- Counter Balanced Spin Drive that floats to connect directly to the reel shaft and easily moves from side to side.
- Relief Angle Adjuster that presets angles and proper clearances when choosing to relief grind.
- Accu-Touch 3 Control features pre-programmed spin speeds, relief torque, and infeeds based on reel make, diameter, and blade count. You tell the machine what you're working on and the machine does the rest!

Whether it's quick "touch-up" spin grinding or returning the reel to manufacturer specifications, no one does it with more quality and innovation than Foley United.











Contact Foley United today to learn more about the most innovative reel grinders in the world—only from Foley United.



SCAN NOW TO LEARN MORE.



Sorry

Regular measures to protect workers help eliminate avoidable hurdles to ethical, legal and financial success.

By Patrick Williams



orking as a superintendent for nearly 30 years and as the owner of McCord Golf Services and Safety for four years, Mickey McCord knows the golf industry and many of the people in it. In his eyes, safety training should no longer be treated as something to just pass the time on a rainy day. He doesn't think for a second that any superintendent doesn't care about safety, and he recognizes that superintendents have other things on their minds—after all, their performances are primarily judged based on the look of their courses. But, he says, many of them can do more to instill safe working habits in their crews.

Golf course managers and superintendents have both an ethical responsibility and, as is outlined by the Occupational Safety and Health Administration, a legal requirement to communicate with their employees about safety to prevent accident and injury. Taking the following steps will help superintendents create a safer working environment, protect themselves and their ownership from legal challenges, and save money.

ENSURING EMPLOYEES COM-PLETE INITIAL SAFETY TRAINING

The training process for new hires at the private 36-hole Westfield Group Country Club in Westfield Center, Ohio, begins with Cintas OSHA compliance training videos, says natural resource leader Mark Jordan. The hires then take quizzes that judge their ability to understand and process the material, next watch hands-on demonstrations in the field—whether those are in the maintenance building or on the course, then shadow crew members and finally begin work on their own.

Decupation

Note your Idea

Although new hires are legally required to complete initial safety training prior to the commencement of work, that doesn't always end up happening, Jordan says. "If you don't have leadership buy into that, then it's easy to say, 'Well, it's so-and-so's first day. Instead of watching training videos or do-

ing the online testing, we really need somebody to mow greens this morning, so we'll send him out and we'll catch up on the training later," he says.

Order

ddress

At Westfield, management trains each crew member before he or she steps foot on the course. Jordan describes a practical scenario where an employee hurts himself before completing training. "The first question anybody's going to ask you is, 'What kind of training did he go through?" he says. "If you say, 'Well, we didn't have time to train him,' or 'We were going to get to that,' that's

not defensible in the court of law. So play out the worst-case scenario, and you come to the conclusion real quick that you can't skimp on employee training before they go out."

Location

Zip

WORK INJURY CLAIM FORM

COMPLYING WITH REGULATIONS

When it comes to OSHA regulations, some are highly specific while others are vague, McCord says. OSHA aims to address unspecified safety issues in its General Duty Clause, which states that employers are legally required to provide a safe work environment for their employees and to inform them about any hazardous work conditions. An inability to do so, McCord says, could be considered negligent and result in court proceedings.

Documentation of employee training is critical, says Jeremy Wharton, president of JW & Associates. The company performs mock audits of golf courses, checking for safety hazards and compliance issues. On several occasions, Wharton has requested employee files from managers and has only received blank stares in return. "That's the difference, is having that documentation," he says. "We've spent a lot of time in both state and federal court, and the courts, as a whole, view even jotting something down on a piece of notebook paper far above anything you'll ever testify to on a stand. So documentation is very crucial and it's very lacking, and it's not just golf; it's in every industry."

ADDRESSING COMMON SAFETY

To maintain compliance, Wharton says, spray applicators should be trained to understand that they should not apply chemicals at higher

ID GUNNAR30001 DREAMSTIME COM



Creating a safety training plan involves studying OSHA and state regulations, and identifying all potential hazards.

rates than what the label says. Additionally, management are required to host a hazard communication class every year. But safety training goes beyond just regulations. If spray applicators don't wear personal protective equipment, for instance, they could be putting themselves in harm's way. "Make sure that people find the value in what they're doing, that they're not just putting this stuff on because somebody told them to, but they understand that if you don't have this stuff on, you could have some longterm issues, medical issues and quality-of-life issues down the road," he says.

Adam Conway, superintendent of Deer Creek Village Golf Course in Cedaredge, Colo., educates his crew members on everything from how to safely operate gas-powered equipment to the importance of ear plugs. He also requires them to wear eye protection. "Even if they're using a pruning device, like a pair of loppers, over their head and something did fall down into their eyes, we require them to wear safety glasses any time there's anything where something could fly into their eye," he says.

Crew members can get hurt on the golf course in a number of ways, McCord says. If a superintendent spent just five minutes making a list, he would think of many items. "He'd come up with eye safety, hearing safety, back safety, chemical exposure, heat exhaustion, sun safety, mowers and utility vehicles, just working around golfers, getting hit by a golf ball," he says. "These are things it just takes a minute to think about, and you'll come up with what you need to talk about."

CREATING A CULTURE OF SAFETY

A key step in maintaining a safe work environment, McCord says, is creating a culture of safety, which means regularly bringing up safety issues and concerns with crew. "I have what I refer to as a 30-30 plan-30 seconds a day, 30 minutes a month," he says. "And what I mean is just every day mention safety: 'Hey guys, anybody have any safety concerns?' 'Anything we need to know about?' 'All right, be safe out there, make good decisions today.' Just mention it every day. And once a month, hold a safety meeting."

Essentially that exact practice has been put in place at Westfield, Jordan says. The club holds a "Daily Lineup," where crew identifies near misses from the day before, and if there is a near miss, they talk about it. "If in a five-week

Off-season safety



In the North, the change of seasons brings a stark shift, and for a time, a complete drop in the number of rounds played. This causes maintenance crews to shrink and spend more time in their buildings, exposing them to different hazards. They also focus on seasonal projects that might require new safety training, guidelines or rules.

In the late fall and winter, management at Westfield Group Country Club in Westfield Center, Ohio, brings in instructors to train crew members on how to remove trees, says Mark Jordan, natural resource leader. The training involves a classroom session, tailgate talk and on-site instruction. "Whenever we do it, which is about every three years, probably about six to eight employees go through that, and those are the employees who will be working outside and doing the tree work," he says. "Then, along with the chainsaw of course comes the chipper training and stump grinder training and stuff like that."

Inside maintenance buildings in the winter, safety hazards abound, says Mickey McCord, owner of McCord Golf Services and Safety. Such hazards include noise exposure brought on by what McCord describes as "banging, clanging, grinding" and tripping hazards he calls "slips, trips and falls." Painting projects also expose crew members to potentially dangerous aerosols and other chemicals.

Taking time to organize items in maintenance buildings will make those buildings safer, says Jeremy Wharton, president of JW & Associates. That means maintaining accessibility to fire extinguishers, entrances, exits and eyewash stations; ensuring emergency lights are working and positioned correctly; and keeping heavy items out of overhead compartments unless an engineer has checked them off.

Projects that involve creating new storage spaces and getting a building up to code might require capital improvement costs, Wharton says. "It really depends on their space and their capabilities and their budgets, too," he adds. "There's some places that obviously have more money than others, and they're willing to put more money toward those issues than others, so it really depends."

stretch we have four or five near misses on the same thing, then obviously that becomes a trend, and we take a look at addressing that," he says. Paired with the "Daily Lineup" are monthly safety committee meetings, in which, drawing from an agenda, participants talk about near misses, accidents and their causes, in addition to any purchases that need to be made that could improve safety, and any other topics related to safety that come up.

The assistant superintendents on each of Westfield's two courses head the safety

meetings, Jordan says. Committee participants include a wide range of workers from each of their crews, including equipment technicians and operators and seasonal workers. "I don't participate in those discussions because sometimes people are a little hesitant to say, 'Well, I saw so-and-so doing this, but I'm not going to say anything because Mark's right there; I don't want to throw him under the bus," he says. The club also invites Westfield Center's safety director to the meetings, and he listens and provides feedback. GCI

FINALLY: A HERO IN THE BATTLE AGAINST DOLLAR SPOT!

KABUTO

A fungicide with preventative systemic and curative properties for the control of dollar apot on turfgrasses

KABUTO[™]: THE DOLLAR SPOT WARRIOR.

Dollar Spot is persistent, resistant, and costs more to control than any other turf disease in the United States. Kabuto[™] Fungicide SC is here to end its grip on your turf and your budget.

University research and end-user trials show Kabuto provides both preventative and curative control of Dollar Spot. And Kabuto can be applied up to eight times per year as part of a resistance management program.

GordonsProfessional.com



Always read and follow label directions. Gordon's[®] is a registered trademark of PBI-Gordon Corp. Kabuto™ is a trademark of Ishihara Sangyo Kaisha, Ltd. 9/16 04526

OUTSIDE THE ROPES

ARE YOU PREPARED?



Tim Moraghan, principal, ASPIRE Golf (tmoraghan@aspiregolf.com). Follow Tim's blog, Golf Course Confidential at www. aspire-golf.com/buzz.html or on Twitter @TimMoraghan

recently, and not for the first time, lived through a significant natural disaster. Hurricane Matthew raked the eastern coastline, from Florida to Virginia, inflicting severe damage on golf destinations such as Sea Island, Hilton Head and Myrtle Beach. I live on that coast and thanks to multiple alerts, mandatory evacuation, a hasty return and after-thefact assessment I had a front-row seat that I hope to never have again.

But it did get me thinking about how anyone responsible for a golf course or other outdoor facility should prepare and respond to such a disaster. This checklist is just a start: You should add to it with items specific to your situation

BEFORE: THINK "WHAT IF..."

You and your club should have a disaster-preparedness plan in place, particularly if you are in a geographic zone prone to hurricanes, tornadoes, earthquakes, flooding or locusts.

Planning ahead is key, as is—at minimum—an annual appraisal from your course or club's insurance agent. Your insurance provider needs to know the extent and scope of your equipment and chemical inventory, the stability of your maintenance facility (against wind, flooding and power loss), the viability of your irrigation system, the age and location of your pumping station (and its proximity to a water source), and that you have a contingency plan in place.

Part of that plan should be having trusted contractors on retainer so they become your first responders. This includes, at least, a course builder, tree company, heavy equipment operator and irrigation specialist.

As superintendents, we are already obsessed with weather forecasts. If there's even the hint of an "event," check and recheck the forecasts as well as the winds and tides, if relevant.

If an event is coming, make sure the storm drain system is clear and open. If time permits, needle tine the greens to allow water to move through the soil during and after rain.

Batten down the hatches: Make sure your facility is secure and the equipment protected, and don't discount vandalism and looting.

Do you have the necessary clearing equipment staged so you can get to it when it's time to start the clean-up process?

Are your qualified operators at the ready?

Have a priority list for clean-up in place, not only for the golf course but also for your entire community, if applicable.

DURING: DON'T BE A HERO

First and foremost, stay safe. If you're ordered to evacuate, do so. Don't be a hero and try to ride it out.

Remember that your employees

and key staff also have homes and families, which come with their own issues and problems. Be sensitive to their situations and needs, but also be sure they know what their responsibilities are and will be going forward.

If you or someone from your crew must spend time on site, is there a safe place to stay or a nearby hotel with rooms available? Will you be able to get food and water, with or without power?

AFTER: AAA—ACCESS, ASSESSMENT, ACTION

Access – After the danger, determine how you are going to gain access. Is labor available to assist in this process?

Are roads blocked, downed trees, and flooded streets? As noted above, is your big equipment staged to help you gain access?

Contact your trusted contractors and find out when they'll be able to show up. The most important tasks likely will be course cleanup, tree and/or water remediation, and an outside agronomic assessment of course conditions from university extension or independent turf consultants.

Other key issues will be:

- · Storm drain system
- Road access (tree limbs, power lines, water)
- Fallen debris, tree limbs, leaning and dangerous trees
- · Bridges, cart paths, tunnels
- Irrigation system and water quality –sodium
- Loss of applied agronomic products – herbicide, fungicide, insecticide

Assessment – Begin the cleanup, following the steps laid out in the disaster preparedness plan but considering changes based on conditions.

Perhaps a bigger headache than the mess will be your members. Because after assessing their own homes and immediate surroundings, they're going to think about "their" golf course. You and the entire club staff must be (MORAGHAN continues on page 56)

FASTER? OR BETTER?

90th year in the sharpening business!

Who says you ca set-up, you're grin simple operation. relief grind blade-t

Who says you can't have both? With our fast one-time set-up, you're grinding in just minutes. Better than that, its simple operation. With our patented auto-index system, you relief grind blade-to-blade hands-free. There's no standing and waiting, only time-saving efficiency and a flawless grind.



Does More. Costs Less. www.nearytec.com





Recovering from a weather disaster requires organization, patience an understanding of science and plenty of fortitude. Insiders to Hurricane Matthew run through the steps they took after the weather event died down.

By Guy Cipriano



maze. Interconnected pathways leading to a clearance. Each October we see the pictures. Owners of large plots of land

craft mazes within crops to offer families pleasant evening or weekend scampers.

Mother Nature also crafts mazes. Don't believe it? Chris Neff does.

On the second weekend of October, he returned to Wexford Plantation, the Hilton Head, S.C., property he manages, and encountered a maze with no ending point. Hurricane Matthew arrived the night of Friday, Oct. 7 and continued into the morning of Oct. 8. Three weeks later, Neff and Wexford Plantation's department leaders still debated details during afternoon briefings.

Did the eye of the hurricane touch Hilton Island, a 42-square mile island with more golf courses per capita than anywhere else in the country? Did winds reach 100 miles per hour? Did two tornadoes occur? Or three? Or maybe four? Did rainfall exceed 20 inches? They will be asking these questions for years at communities such as Wexford Plantation, which includes more than 400 homes and a private golf course.

Recovering from storm requires organization, patience an understanding of science and plenty of fortitude. But first, it requires clearing the maze. Roads come before homes. Homes come before greens. Greens come before fairways. His status as Wexford Plantation's director of greens and grounds gave Neff first re-

MANAGEMENT

sponder access to the property. He immediately realized this won't be a normal fall. "There were no passable roads on the plantation," he says.

Across the state line, 60 miles to the south. Nelson Caron followed a convoy of emergency vehicles along Interstate 16 and into Savannah. Ga. He then made the familiar 30-minute drive to Richmond Hill before arriving at The Ford Plantation to begin an unforgettable workday. The power was out and 12 1/2 miles of roads were impassable. "It looked like Lincoln Logs everywhere," says Caron, The Ford Plantation's director of golf course and grounds maintenance. "I guess it was exactly what I expected. It was a disaster."

Disasters bring mazes. They force manager such as Neff and Caron to prioritize and establish realistic post-disaster expectations. Neff and Caron estimated their properties lost 1,750 and 3,500 – and counting – trees, respectively. Fallen trees struck homes and covered greens. Storm surges submerged turf primed for the peak golf season in salty water. Weeds and diseases will abound, causing mazelike patterns on turf.

Yet, through the maze, incredible stories emerge. Of superintendents and crews showing up for work despite significant losses in their own lives. Of memberships generously helping employees. Of careful plans reaping long-term dividends. Of turf becoming stronger.

USGA Southeast Region agronomist Patrick O'Brien has lived in the Carolinas for 30 years. He visited Charleston, S.C., following Hurricane Hugo, a storm more powerful than Matthew. When the maze cleared, O'Brien says Charleston had stronger golf courses.

"The good news about a lot of the trees that are lost is that most golf courses have too many trees anyway," he says. "A lot of times it helps golf courses have better golf turf. It improves the golf holes. I can tell you after Hugo those courses in Charleston were a lot better once they got all fixed up and everything even though they had hundreds and hundreds of less trees."

Fortunately, Neff says, his employees started evacuating Hilton Head Wednesday, Oct. 5. Every member of his team safely returned to Wexford Plantation for work the following week. Cleared trees created fortresses throughout the property. Engaging a tree contractor and golf course construction company before Matthew arrived allowed Wexford Plantation officials to consider reopening the golf course sometime in November.

Pick an emotion, and there's a good chance somebody on

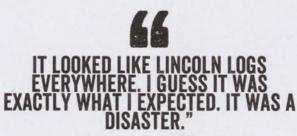


Clearing trees and debris from roads is the first challenge facing superintendents and crews following a major weather event. Arranging the services of tree contractors before the storm can help expedite the cleanup.

about as a staff and as a club ... We will be better after this. We might have lost some trees, but everything here can be replaced and fixed."

BEFORE

The Ford Plantation's leadership didn't hesitate. After



-Nelson Caron, The Ford Plantation

the Wexford Plantation staff experienced it in Matthew's immediate aftermath. Emotions, though, dissipate.

"Everybody is over the shock factor," Neff says. "I think morale is very, very good. What we have talked dodging the brunt of Hurricane Hermine, a tropical storm once it reached the Georgia coast in September, nobody wanted to take chances when observing Matthew's projected path. Hurricane preparations started three days before Matthew's expected arrival, Caron says.

Crew removed all course accessories. General manager Marc Ray endured Hurricane Katrina while working in Louisiana in 2005, and he helped key Ford Plantation personnel obtain first responder access,

which allowed an immediate damage assessment and started the process of concocting a recovery plan.

Anticipating power outages, Caron and his team loaded pickup trucks with supplies such as chainsaws and ropes needed to carve their way back onto the 1,800-acre property, and the food and beverage staff

secured an 18-wheeler to store refrigerated food and propane grills. Caron recommended The Ford Plantation make financial commitments to multiple logging and tree care companies prior to the storm's arrival, thus securing their





Rain produced by Hurricane Matthew submerged the 17th hole at The Ford Plantation in Richmond Hill, Ga. Pumping water from the back nine was a two-day process, according to director of golf course and grounds Nelson Caron.

services if the storm's ferocity met or exceeded predictions. "My general manager said, 'Nelson, you are either going to be the goat or the hero," Caron says. "If the storm didn't turn out to be that bad, I probably would have been the goat spending that much money."

The calculated decision expedited the cleanup. Two logging and five tree care companies had arrived on the 1,800-acre grounds by Sunday, Oct. 9. A team of 70 contractors joined Caron's 45-member crew, and parts of the golf course reopened Oct. 13. The entire golf course reopened Oct. 16, with an event the pro shop staff called: "The Hurricane Shotgun: Hopefully not an annual event."

Having significant resources allowed The Ford Plantation, a private club with numerous members who own multiple homes, to reopen quickly, Caron says. He also says Savannah missed the portion of Matthew that battered Hilton Head. "We're bad," he says. "They're real bad."

Solid planning is aiding Wexford Plantation's recovery.

The club examined its written hurricane preparation plan prior to Matthew's arrival, and obtained first responder passes for a half-dozen staff members, including Neff. In addition to securing a qualified tree contractor and golf course builder for repair work, the club rented a Bobcat and large loader to clear access to the property. Crew removed course accessories and refueled equipment before employees evacuated. Employees without vehicles received assistance leaving the island, and the club created a text message list to ensure the whereabouts and condition of employees once the storm passed.

The depth of the plantation's harbor was dropped, although the intensity of the ensuing storm surge negated move. Clemson University's Dr. Dara Park says "unfortunately, there isn't much one can do" to protect irrigation sources. "However, if a course has an alternate source of water that would less likely be impacted by storm surge (municipal or well), switching over before the storm may save resources for more immediate needs after the storm," she adds.

High salinity levels are a problem associated with storm surges. To combat potential problems, Caron applied 800 pounds of gypsum per acre before Matthew's arrival.

Scalping is another poststorm issue that can be addressed before evacuating. If a storm is projected to make landfall while warm-season grasses are still growing, NC State's Dr. Fred Yelverton recommends applying a PGR.

"Bermuda and Seashore Paspalum are two species that are very prone to scalping so you want to slow that growth down as much as you can," he says. "Even if you don't have flooding and you just have wet soils, you can track it up real bad. And timing is critical in this. If it's still in August - and we do get hurricanes in August - Bermuda is still growing pretty hard. When you have a hurricane like we do right now (late October), which we can have, Bermuda is kind of slowing down big time. It's not as critical as August or September. When vou have a big rainfall event, even if it's not a hurricane, it might be a tropical storm, it's important to have a growth

HURRICANE continues on page 46

DESIGN CONCEPTS

DEVIL IN THE DETAILS ... OR THE INFRASTRUCTURE



Jeffrey D. Brauer is a veteran golf course architect responsible for more than 50 new courses and more than 100 renovations. A member and past president of the American Society of Golf Course Architects, he is president of Jeffrey D. Brauer/GolfScapes in Arlington, Texas. Reach him at jeff@ jeffreydbrauer.com.

ost golfers evaluate a green by maintenance over design quality. Given the superintendents goal of providing great conditions, so do they, and they know that a wellfunctioning green, is easier (never easy, mind you) to maintain. So, both groups have an indirect interest in the less sexy parts of green design such as good infrastructure.

For even the best designed green to function well, the devil is in the construction methods and detail design of cart path, drainage and irrigation design. But proper design of these elements is essential, too. Some random thoughts from almost 40 years of designing greens:

CART PATH/CIRCULATION

This is to avoid paths breaking up before their expected life span. Concrete is more expensive than asphalt, but in most areas of the country, still the preferred option for its durability.

I covered cart path design back in 2004. Here are some green specific design tips updated from that article:

- Strive for direct routes and easy circulation. Place the path where golfers want to go.
- Provide a wide entrance/exit point from the fairway ahead of the green to spread wear. It should be relatively flat and as wide as possible. Avoid physical blockage

like mounds and bunkers in front of the green on the cart path side, because they tend to limit circulation to one path.

- Physical blockages can be mounds, bunkers, trees, etc. Even a 1-foot mound causes golfers to drive or walk around.
- Provide relatively level walk-up entries from cart path to green, about 2 lineal feet per thousand rounds. Ideally, the main entry is near the back to avoid walking back toward play to access the cart to minimize delays.
- Use 10-12 feet wide pavement (net of curb) and 4-inch roll curbs around greens to keep carts on the path and allow for more concentrated traffic to pass. It should extend the full length of the green, if economically possible. If not, widen the pavement as far as possible near the anticipated walkup areas. Cart parking zones no longer than the carts concentrate traffic to limited spots, so install wider pavement the full length of the natural entry points.
- Locate green area paths close enough to greens for ease of use, but far enough away to avoid affecting play. My basic standards are: 35-45 feet from back of green; 45-55 feet on left side of green; 50-60 feet on right side of green edge.
- Gentle curves fit the landscape, look better, spread wear better and

drive easier.

Remove trees if necessary to maintain minimum radii, and keep tree trunks 5-15 feet from the pavement to avoid cart dents and path damage from tree roots.

SOILS AND TURF

Sand capping critical areas can work, but can be problematic and cost more than it is often worth. Most often, we use the native soils, but make sure we have ample depth (9 inches) around the greens. Herringbone tiles will be required in the approach with sand capping, and is sometimes a good idea in any soil to keep this critical area dry. Regarding sod: Two words – use more.

DRAINAGE

Whereas 2-2.5 percent drains well in most cases, a minimum of 3-4 percent for slopes around the green is better Paths are often used as drainage ways, but even a half-acre of upland drainage heading toward your green requires collection in catch basins before finding/crossing your busy parking areas and/or turf walk-up areas, if paths are on the high side. Where paths are on the low side, elevate them several inches and give them visible cross slope to move water away from the paths.

IRRIGATION DESIGN

Adjust back to back part circle sprinklers so they have different stop and return points, which often cause over watering of the approach and other areas. Make sure the cart path side of the hole is well irrigated to reduce the stress of greater cart traffic.

ADA

At all courses, any renovated areas are required to meet ADA standards for golf courses (at least one route from path to green with no curb, and a maximum of 5 percent slope up/ downslope and 2 percent cross slope). That gentle route is mandated for wheelchairs, but senior golfers appreciate it, too. **GCI**

Xzemplar[®] fungicide keeps reputations spotless

For unmatched dollar spot control, top courses trust **Xzemplar** fungicide

Superintendent of the Upper Course, Mark Kuhns, Director of Grounds and Dan Kilpatrick, Superintendent of the Löwer Course, Baltusrol Golf Club,

Premier courses like Baltusrol Golf Club, the host of 16 major tournaments, rely on **Xzemplar** fungicide. This go-to solution for dollar spot provides immediate knockdown plus a 28-day residual. Now, Superintendent Mark Kuhns and his team no longer have to spray every two weeks, and their players can enjoy beautiful, spotless fairways.

To keep your own fairways as spotless as your reputation, visit betterturf.basf.us for more details. We create chemistry

PGA

Always read and follow label directions. Xzemplar is a registered trademark of BASF © 2016 BASF Corporation. All rights reserved

Meadowbrook Country Club, site of the 1955 PGA Championship, is undergoing a major renovation to modernize its golf course.

Digging N in Detroit

New thinking, emerging technology propelling a venerable club into its anticipated next century.

By Guy Cipriano

eadowbrook Country Club found an atypical way to celebrate a centennial. The club hosted no rounds of golf in 2016.

Yet on an ideal evening this past summer, cars occupied two-thirds of the club's available parking spots. Families gathered at the pool and practice range. Members dined inside and outside the clubhouse.

Their view of the surrounding landscape included, well, overturned brown. Plenty of it. To those who understand the market where the club resides, the aesthetics and optics proved beautiful.

Meadowbrook is in Northville, Mich., a northwest suburb of Detroit. Members voted overwhelmingly to close their golf course beginning in October 2015 to embark on what is believed to be the largest postrecession renovation in the Detroit area. When it reopens in spring 2017, the site of the 1955 PGA Championship will feature a fresh look, with rebuilt greens, tees and bunkers, 37 acres of regrassed fairways, two acres of sand-capped approaches, enhanced irrigation and drainage, a relocated pump station and 24 acres of native areas.

A trio of energetic Michiganborn turfgrass managers – superintendent Jared Milner and assistants Brian Hilfinger and Andy O'Haver – worked closely with Wisconsin-born, Arizona-based architect Andy Staples, shaper Scott Clem, Dr. Trey Rogers of Michigan State University, and crews from GCBAA members TDI Golf and Leibold Irrigation to modernize a course that started as a six-hole Willie Park Jr. design in 1916. "For the region, a project like this is pretty wild," Staples says. "There are very few of them."

Meadowbrook officials anticipated a dip in membership during the course closure, but the club has a waiting list as 2017 approaches, according to general manager Joe Marini says. Meadowbrook features encompassing views from its high points and a desirable location along famed 8 Mile Road. In addition to Park. Donald Ross executed work at Meadowbrook, stories of A.W. Tillinghast walking the land exist, and Byron Nelson, Ben Hogan, Sam Snead and Gene Sarazen played competitive rounds on the course.

The club's future, though, spurred the renovation. "We will definitely be on the cutting edge," Marini says. "We're using technology along with less water, less chemical, less fertilizer. We are going to have this world-class golf course when it's all said and done. I think people are going to be taken back when they come out, especially people who knew what Meadowbrook was the last 100 years and now moving forward, and what it's turning into and what it's going to be. I think we can only have a wait and see type mentality. I think we are on to something. The business angle ... We are seeing it right now."

The renovation occurred as Meadowbrook experiences a superintendent transition. The club hired Milner last Novem-



Meadowbrook superintendent Jared Milner with assistants Brian Hilfinger and Andy O'Haver and architect Andy Staples.

ber to replace Mike Edgerton, who retired after a 42-year tenure as superintendent. Milner worked under Tim Kennelly, CGCS, at Baltimore Country Club, which underwent renovations on separate courses in 2012 and 2014. The presence of a veteran staff, along with regular conversations with Edgerton, are helping Milner handle the rigors of starting a new job and handling a dynamic renovation.

"What it comes down to is that I'm only as good as my staff," Milner says. "They know this property. It's huge. And also being able to have a connection to the former superintendent. I didn't know Mike before this, but I felt like I have known him for many years. He gives you that impression. I don't think taking a job like this you could ask for much more."

Milner will manage a course different than the one Edgerton maintained. Renovation chatter intensified following the cruel winter of 2013-14, as numerous Detroit courses with *Poa annua* greens on heavy clay soils, including Meadowbrook, experienced severe damage from the freeze-thaw cycle.

Reconstructing 18 regulation and two practice greens represents a major focus of the renovation, and what's below the surface will separate Meadowbrook from other courses. The greens were constructed with a varying depth greens mix, a technique developed by Rogers. The method ensures uniform water moisture across the greens profile, and Rogers is serving as a consultant on the project. Higher areas received 9 inches of greens mix and lower areas received 14 inches. "Water is going to percolate from high to low," Milner says. "Excess water will sit where's it's the lowest. The more sand that is in the lower areas of the green, gives the excess moisture a greater chance of getting out of the upper part of the green profile. This ideology helps to create a more uniform moisture playing surface."

Staples adds constructing greens with a varying depth greens mix could become a trend and polarizing industry topic. "Some people are going to be like, 'I don't believe in that," he says. "And then others are going to think about it."

Precision Turf Management

practices are aiding the construction and grow-in of the greens. Using GPS measurements is allowing Milner, Hiflinger and O'Haver to make what Staples calls are "realtime" agronomic decisions. Measurements are placed on a spreadsheet, and Staples regularly checks the data with the actual size of greens to ensure proper material bids are placed. The GPS unit serves as the 21st century version of routing plans, offering the Meadowbrook agronomic team easy access to course details such as location of drain pipes and where sand capping begins.

Establishing data points throughout construction, along with the installation of a fertigation system, will allow Milner's team to make precise applications to every part of the course, including the Pure Distinction bentgrass greens. Ensuring uniform water moisture content on greens will require regular use of moisture meters, while drone footage provides Staples with visual progress reports to aid in his management of the project, and also helps to update members. Hilfinger serves as Milner's lead data collector and technology implementer.

Data and images are depicting a modern golf course with some classic twists - that should provide an intriguing contrast to Meadowbrook's pre-renovation course. Mounding, intricate bunkering and a two-level third green inspired by the fourth green at the Park-designed Huntercombe Golf Club in England create throwback experiences. But "express tees" and infrastructure to produce turf conditions promoting a variety of shots will propel Meadowbrook into its next century. GCI



/

>

 \frown < D

+

 \bigcirc

5

+

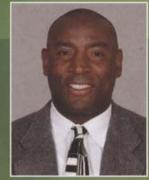
D

/

2

5

+



EARNEST BYNER

syngenta

Be a part of the **COMMUNITY.** Join us for the 50th OTF Conference & Tradeshow.

WWW.OTFSHOW.ORG

 \leq **OTF CONFERENCE** & TRADESHOW 20 > GREEN INDUSTRY 2

December 5-8, 2016

Columbus, Ohio

- Weather
- and much more!

ADVERTORIAL

Championship-caliber EFFICIENCY

TPC Deere Run in Silvis, III.

Alex Stuedemann, director of golf course maintenance operations at TPC Deere Run in Silvis, III., maintains proper nitrogen levels with UMAXX stabilized nitrogen with dual inhibitor technology, an enhanced efficiency fertilizer from Koch Turf & Ornamental.

By Patrick Williams



long the Rock River in Silvis, Ill., Alex Stuedemann oversees the

pristine maintenance of TPC Deere Run for members and the public, and for the PGA TOUR players who compete there in the annual John Deere Classic.

"There's no room for mistakes when you're prepping a top-ranked championship course for professional golfers and television broadcasts," says Stuedemann, director of golf course maintenance operations. That is why he oversees fertility programs centered around UMAXX dual inhibitor stabilized nitrogen, an enhanced efficiency fertilizer from Koch Turf & Ornamental. "We need to know that the course is showing its best that week, so having a product like UMAXX fertilizer that gives us predictable nutrient availability allows us to kind of tweak our program such that when we are showcased on TV, that we're right where we want to be," he says.

Over the past 17 years, Stuedemann worked up in the ranks with the PGA TOUR, from second assistant to first assistant to superintendent to his current position, at courses in the tour's Tournament Players Club network. In that time, he has worked with superintendents who have implemented successful fertility programs

D TPC DEERE RUN

THE POWER TO MAKE THINGS GROW



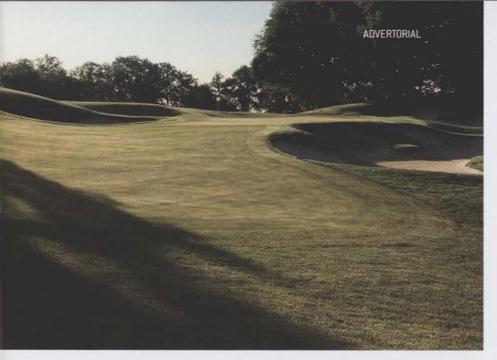
Mother Nature. Nitrogen loss. HANDLE BOTH.

UMAXX[®] stabilized nitrogen contains dual-inhibitor technology that protects against nitrogen loss due to volatilization, denitrification and leaching, making your nitrogen fertilizer more efficient. With this enhanced efficiency fertilizer, nutrition is available almost immediately after application, and turf is fed for up to 12 weeks. Since it's completely soluble, you can spread, spray or tank-mix it with other turf protection products. UMAXX[®] fertilizer, with its unique mode of action can't control Mother Nature, but will stand up to what she dishes out.

Consult with your distributor for more applied advantages, or visit KochTurf.com/UMAXX.



UMAXX® and the UMAXX logo are trademarks of Koch Agronomic Services in the United States and may be registered in other countries. KOCH and the KOCH logo are trademarks of Koch Industries, Inc. © 2016. Koch Agronomic Services, LLC, T&O-15-12185.





using UMAXX fertilizer from Koch Turf & Ornamental, and based on that experience has created programs at TPC Deere Run also using UMAXX fertilizer.

"UMAXX fertilizer stabilizes nitrogen in the soil, protecting it from the volatilization and leaching that can result when using other nitrogen sources," Stuedemann says. "Really what you're doing, as it states in the title, is you're maximizing the efficiency of the fertilizer that you're putting down, and in a lot of regards, protecting whether you have a watershed challenge or you're having to report to an agency in terms of nutrient movements," he says.

UMAXX fertilizer serves as the foundation of TPC Deere Run's fertility programs, which also include regular soil testing to determine if potassium, calcium or micronutrient applications are necessary and if pH levels are up to par, Stuedemann says. Crews combine other components with UMAXX fertilizer into spray mixtures to ensure turf health while minimizing inputs.



As a result, they prevent issues such as excessive growth and thatch production that create unhealthy surfaces.

When describing UMAXX fertilizer, a term Stuedemann keeps coming back to is "predictable." The water-soluble granules can be completely dissolved in a spray tank. The EEF provides 10 to 14 days of quality response when spoon feeding greens, depending on factors such as weather and application rates. The crew at TPC Deere Run uses UMAXX fertilizer throughout the golf season, catering applications to soil tests and playability conditions, Stuedemann says. Rates also vary depending on the area of the course where crew members are applying it. "We'll spray our bunker faces with it at a quarter pound (at 21-to-28-day intervals), and it just gives us the amount of feed we need on a longer interval maintenance program, whereas on putting greens, even on teeing grounds, we may go to a tenth of a pound, but we might be spraying every 10, or at the most, 14 days," he says.

Stuedemann: "UMAXX fertilizer stabilizes nitrogen in the soil, protecting it from the volatilization and leaching that can result when using other nitrogen sources."

Because of its benefit to turf health at TPC Deere Run, UMAXX fertilizer allows Stuedemann to effectively manage the use of labor and equipment. UMAXX fertilizer prevents the types of flushes in growth that, when they occur on other courses, lead to higher clipping yields and debris, thus requiring more mowing, blowing and overall fossil fuel consumption, he says. A manager of creeping bentgrass, Stuedemann knows other courses with the same type of turf can get brown patch and other fungal pathogens when excessive growth goes unchecked.

"If there's one weak link, the turfgrass will suffer, so we look at our fungicide programs and make the best choices from that standpoint and we look at our irrigation practices," Stuedemann says. "The final component of that is looking at our fertility, taking soil tests and applying products like UMAXX fertilizer that maximize the health of our turf while minimizing the inputs not only from the fertility standpoint, but from our staff and our equipment resources."

Seeing positive results time and time again with Koch Turf & Ornamental enhanced efficiency fertilizers, Stuedemann says he will continue to use them in the future. "There's not a whole lot in our business we can control when it comes to Mother Nature, when it comes to golfers, sometimes when it comes to finances," he says. "So whatever we can grab a little bit more control over, we're certainly going to capitalize upon it, and utilizing a product like UMAXX dual inhibitor stabilized nitrogen, we can gain that type of control."

THE MONROE DOCTRINE

MY HERO



Monroe Miller retired after 36 years as superintendent at Blackhawk CC in Madison, Wis. He is a recipient of the 2004 USGA Green Section Award, the 2009 GCSAA Col. John Morley DSA Award, and is the only superintendent in the Wisconsin Golf Hall of Fame. Reach him at groots@charter.net.

Author's note: The following piece, edited here by me for length, appeared in Vol. 11, No. 7, pp. 2 and 3, of the November/December 1984 issue of THE GRASSROOTS (chapter publication of the WGCSA). I was 38 at the time I wrote it and at the end of my 12th year as a golf course superintendent. It struck me how true, 32 years later almost to the day, those words about Arnold Palmer were today.

n the 32 years since then, I have watched Arnie play golf probably another dozen times, stopped at the Latrobe Country Club almost that often (once to see the Toro tractor that was used in the Pennzoil ad), and had the exceptional privilege to sit in his Bay Hill office and chat with him a few years ago. I'll never forget, as I entered his office, how he stood up, extended his hand and said, "Hi! I'm Arnold Palmer." One of my prized possessions is a self-published book he signed and gave to me.

Like millions of others, I was profoundly sad the day he died, and his memorial service was like none other I've seen. This is a man we will not forget.

Everyone should have a hero. I have one and I am proud to admit it. Age shouldn't be a factor – one is never too old to have a hero. There are so many exemplary and outstanding people in our society that finding one to suit your age and interests is easy. For as long as I can remember, I've had a hero. They have changed over the years, but for the last 10 or so the same man has been the focus of my hero worshipping. My first recollections of heroes go back to the late 1950s when the Milwaukee Braves were the terror of baseball. So many of the Braves' players were my heroes – Aaron, Mathews, Crandall, Spahn, Burdette and Burton. But my favorite player was Joe Adcock. He was a big man

and a good hitter. I can remember the day he hit four home runs in one game. Joe was a better hero than any of the other Braves and even better than Mickey Mantle as far as I was concerned. Things started to change in 1959 and 1960. Vince Lombardi moved to



Golf legend Arnold Palmer.

Green Bay and started to coach the Packers. At a time when I was playing football in high school and when the Packers were winning lots of football games, baseball and Joe Adcock faded. The Packers had lots of great players worthy of hero worship - Hornung, Taylor, McGee, Kramer, Gregg, Thurston, Nitscke and Starr. Poor Joe didn't have a chance. Suddenly, I couldn't get enough news about Bart Starr. Bright, aggressive and cool under pressure describe him best. He was a great player and he had a great name. He did the same for thousands of kids across the country.

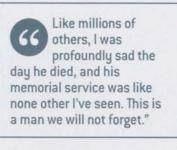
I never felt limited to just one hero. Often several people captured my attention for extended periods. What young American couldn't feel a certain amount of awe over President Kennedy? He was our youngest president and a war hero. He was courageous in his decisions and actions. He was a particularly special person to me because, during the presidential primary campaign in Wisconsin in 1959 against Hubert

> Humphrey, he was in my hometown and I got his autograph.

There was a period of time, from the late '60s until the early '70s, that I didn't think much about heroes. I was either in the Army in Vietnam. starting a family, finishing college at the University of Wisconsin or getting

THE MONROE DOCTRINE

my professional feet wet. There didn't seem to be much time for it. I lost track of Joe Adcock's career, John Kennedy was gone and Bart Starr retired as a player. But in



1973 I was paying more attention to golfers, for obvious reasons. Managing a golf course tends to narrow and focus one's interest in games. An interest in a game begets an interest in the players and, slowly and subtly, there was a gathering of my intrigue in one and only one player – Arnold Palmer. My admiration and respect for him have grown by leaps and since then and he has been the perfect hero for me. I suspect he always will be.

Although he had passed his zenith when I started to take interest in him, that didn't seem to matter. Undoubtedly, for myself or for any other golf course superintendent, the greatest trait Palmer has is his love for golf courses. He once wrote, "A golf course is an intoxicating place." Music to the ears of a man (me) who will spend many of the working years of his life on a golf course. He grew up on a golf course and lived in a house near the third hole at Latrobe Country Club in Pennsylvania. Arnold's dad Deacon, was the "Greenkeeper" at Latrobe when Arnie was born in 1929 and soon after that became the golf pro as well, a "temporary" economy move by the club during the depression years. Deke Palmer not only gave golf lessons, he mowed fairways. As a youngster, Arnold worked in the golf shop and on the golf course. This had to influence the affection for golf courses he carries today. I think it is this connection Palmer has with my profession that makes him so special to me. Unlike so many other golf professionals who conjure up hatred for the golf course in order that they may "beat" it, Palmer has never lost his

deep affection for them. He has put his knowledge of the game together with his love for golf courses and designed some of the world's greatest layouts. It was also great to

learn, in 1983 from Arnold himself, that his father was a longtime member of the GCSAA. His brother Jerry is the golf course superintendent at Latrobe Country Club. And Arnie didn't hurt us when he did the series of ads for Pennzoil using the Toro tractor on the golf course.

The GCSAA has done many great things over the dozen or so years that I have been a member, but none of those comes even close to the stroke of genius they showed when they selected Arnold Palmer as the first recipient of the Old Tom Morris Award. He was the perfect choice, the same one I would have made. And when Bob Hope received the 1984 award in Las Vegas, Palmer was there to observe the proceedings. It is a wonderful feeling to know that he has respect for us and our profession.

Not only has he been kind to our profession, he has been great for the game of golf and probably done more for it than any other man. He is able not only to capture great respect for his game abilities, but also for his warmth, honesty and kindness. I think no one in golf ever has or ever will match this man for his charisma, his personality or his verve. His playing style is courageous and he approaches tough spots with bravado. He probably is the most determinedly aggressive player the game has known and he has an absolutely transparent desire to win. But he is also the ultimate sportsman - not a crier or a complainer. This past summer, he missed qualifying for what would have been his 32nd consecutive U.S. Open. The USGA has a requirement

that he qualify, even though he is a past winner. Did he object? Nope. His only comment was, "I missed. I had every opportunity to make it. I feel that if you can't play, you shouldn't play." A great man with a great attitude.

Reporters like him. He always gives them the time they need and will talk with them, good round or bad, win or lose. And the reason "Arnie's Army" became such a big thing on the pro tour was that this man always has (and still does, as I can personally attest to) signed autographs during a round of golf, almost no matter what.

The image of Arnie on the golf course is legend, too. The sight of him tugging at his glove, hitching his trousers up, flicking his cigarette into the rough, walking up to the ball and hitting it quickly and powerfully has thrilled millions of people, none more than me. And I always appreciated the way he tastefully dressed, avoiding the "distracting" clothes some golf pros like to wear. He always exudes class. I am fairly serious in my hero worshipping. I have seen Arnold play golf three times. And believe me, there is nothing like standing so close to him that you can actually hear him ask his caddie for a club, to be so close that you are sprinkled by bits of sod after he has drilled a shot with his patented controlled lunge.

I have gotten Arnie's autograph on five different occasions, once even asking him to sign a can of Pennzoil for me, which he promptly did. I collect books by him and about him. Several pictures of the man hang in my office. And next year, during our annual trip out East, Cheryl and I plan on making a side trip to Latrobe and visit the golf course where this marvelous man started his unparalleled career in golf.

He is a great man – greater than great and bigger than life. If you are looking for a hero, you'll never do any better than bestowing that honor on Arnold Palmer. **GCI**

MANAGEMENT

HURRICANE continued from page 35

regulator on it to just slow the growth down."

Under ideal circumstances, Yelverton says a PGR should be applied seven days in advance of a storm. But changing weather forecasts alter application windows. An application one or two days in advance is better than nothing, Yelverton adds.

DURING

Remaining near the course will not ease the post-storm burden. Evacuate until authorities declare returning is safe.

AFTER

At Wexford Plantation, the shock of navigating a cluttered maze lasted three days as leadership assessed damage and prioritized post-storm objectives. "And then all we did that first week was clear roads," Neff says. "The golf course was the last thing on our mind. Everything was directed to make sure the membership could get back to their homes. That was our biggest priority, then we just started clicking down the priorities."

Safety drove decisions. Crews removed trees leaning near homes as soon as possible. As they waded onto



Above: Hurricane Matthew caused serious damage to Wexford Plantation's bunkers. Top right: A powerful storm surged resulted in a boat being pushed from the harbor to Wexford Plantation's 18th hole. Bottom right: The Georgia Southern Golf Course is 60 miles from the Atlantic Coast, yet suffered tree damage from Hurricane Matthew.

Fallen trees caused significant damage on three greens. Bunker walls collapsed. Seven greens, in Neff's words, "took it on the chin pretty good" because of a salty storm surge.



-Chris Neff, Wexford Plantation

the course, a 30-degree rule was implemented. "If it has a 30-degree angle, we are cutting it down," Neff says. Wexford Plantation's Zoysiagrass fairways, tees and fairways handled the salt water dumped on the course better than its Bermudagrass greens. "How long were some of the greens under water?" Neff says. "It's impossible to tell." Neff is resetting the fall agronomic program and restarting it from scratch.

The length of time a water source may be affected by a storm surge varies based on proximity to the salt water source, Park says. She recommends submitting a water sample for analysis as soon as possible.

The Ford Plantation features contrasting nines: a wooded, parkland-style front and open, links-style back. Nothing could be done to prepare for what happened to the back nine. Water from the storm surge covered 60 acres, deactivating state-ofthe-art pumps added in a massive 2014 renovation. A Jacksonville-based company repaired the pumps and it took 48 hours to remove 48 million gallons of water. Once the water subsided, Caron says a "tremendous of debris" that floated onto the property had to be removed.

Despite the gypsum application before the storm, Caron says sodium levels "are through the roof," and impossible to quantify because soil sensors are inoperable. Caron is planning another gypsum application next month. "Do-







ing it in December is a little unusual," he says. "But so are the circumstances."

To expedite the removal of sodium, Park says purchase gypsum with calcium sulfate dihydrate and a finer particle size. "Soil test to help determine how much is needed," she adds. "After an initial higher rate of fine particle gypsum is applied, lighter applications with more coarse particles may be applied depending on the severity of the problem."

The Ford Plantation underwent overseededing in early September, and the storm surge "absolutely smoked the ryegrass," Caron says. The base Bermudagrass handled the salt water "OK," but a second overseed occurred in late October. Caron is now reassessing agronomic goals. "It's not going to be our best turfgrass year," he says. "But maybe it becomes more of a year of storm achievements."

Superintendents at every course affected by a major weather disaster face the same challenge managing expectations in the ensuing months. A maze of questions awaits, ranging from what happened to specific trees to when will fairways and greens replicate past firmness or speeds. "I think it's really smart to lay out a timeline for your club," Caron says. "You are ahead of the game because you are just setting the expectations."

Assessments might change a few months after the initial cleanup. O'Brien, for example, says a second round of tree removal isn't uncommon. "They might have had some damage to the bark, some things that aren't as visible," he says. "These guys are focused on clearing up what has fallen. But some of these trees that are standing could be injured pretty bad."

As October turned November, massive walls of cleared trees still greeted Neff and his team at the Wexford Plantation entrance. Similar walls were scattered throughout Hilton Head, a reminder of the order needed to endure a chaotic event.

"Everybody said it would never happen," Neff says. "But guess what? It happened." GCI

Guy Cipriano is GCI's associate editor.

PYTHIUM And *Poa*

The combination of cool temperatures and saturate soils means pythium root rot is the biggest disease concern following Hurricane Matthew, according to USGA Southeast Region agronomist Patrick O'Brien. "Superintendents are going to be on top of it," he says. "We had a big problem with it last fall and last spring because of El Niño. It's already on people's minds. That's a disease that can get us."

The early October dousing produced by Hurricane Matthew also means superintendents should see an abundance of Poa annua. "It occurred in the sweet spot of Poa annua germination," NC State's Dr. Fred Yelverton says. "Poa annua loves wet soil, so it's a perfect opportunity for Poa to germinate because it occurred in that 60-day window when most Poa germinates. It's going to reduce the competiveness of the turf, which is going to lead to more Poa invasion. And it degrades the herbicide. What I think we are headed for, quite frankly, is a big Poa annua year because of this."

NC State and Clemson faculty and researchers released "Turfgrass Management after Hurricanes" to assist with weed, insect, water quality, disease, soil fertility tree and submerged turfgrass issues following Matthew. Enter <u>bit.ly/2f7rCTk</u> into your web browser to view the guide. SPONSORED RESEARCH UPDATE

A new tool in the toolbox

Pinpoint[™] Fungicide, a new strobilurin from Nufarm and Valent USA, treats dollar spot while improving turf and curbing fungicidal resistance.

by Patrick Williams

hen it comes to dollar spot control, strobilurin fungicides haven't historically been among the first chemistries to come to superintendents' minds. But now, Pinpoint, a strobilurin from Nufarm and Valent, stands to change that. Registered for use in the United States and Canada, Pinpoint defies turf managers' long-held expectations of strobilurins, effectively treating dollar spot while managing the pathogen's resistance to other fungicides and improving golf course turf.

Researchers have consistently controlled dollar spot with Pinpoint

over the last 10 years on bentgrass, annual bluegrass and other grass types at universities and golf courses, says Dr. Jason Fausey, technical director at Nufarm. "It has a lot of characteristics of the strobilurins, but then, especially for guys in the Midwest, the Northeast, where dollar spot is such an issue, it really is a new option for dollar spot control as far as a new mode of action to rotate to," he says.

There is concern about dollar spot developing resistance to succinate dehydrogenase inhibitor (SDHI) fungicides like it has with other fungicide classes. Now superintendents have a new tool to help manage resistance, says Dr. Joe Chamberlin, product development manager at Valent. "Wherever dollar spot is your primary pathogen, this product, Pinpoint - mandestrobin offers an opportunity to rotate a different mode of action with the SDHI fungicides, and really conserve the activity of both, because we don't just want to manage resistance to SDHI inhibitors; we've got to manage it to strobilurins, as well," he says.

Fungicides in another class, demethylation inhibitors (DMIs), control dollar spot, but severe summer heat often amps up their growth regulation properties, so rotating Pinpoint with DMIs gives superintendents the ability to manage dollar spot even under times of stress, Chamberlin says.

Growth regulation caused by DMIs often poses major setbacks for turf managers throughout the middle of the summer, says Todd Hicks, turfgrass pathology program coordinator at The Ohio State University. "A lot of times that whole family is gone for you, and you're left with the few remaining products when dollar spot is at its worst and you're trying to hold it at bay," he says. "Well now you've got a product that's in a totally different family. It's like having a brand-new tool in the toolbox."

Dollar spot has developed resistance to DMIs and Thiophanate-methyl, which makes Pinpoint a useful fungicide to





In a trial, Clemson's Dr. Bruce Martin saw positive results with Pinpoint. Top: Untreated. Bottom: Taken 28 days after fourth application.

rotate with, Hicks says. Additionally, turf managers are limited in the number of applications they can make of both contact and SDHI fungicides, so the product is beneficial in those scenarios as well.

Ohio State researchers tested Pinpoint for about 10 years, starting when the fungicide was known as its numbered compound, Hicks says. In their trials, they saw results throughout 14-21-day rotations.

Pinpoint sets itself apart from other strobilurins because it is labeled specifically for dollar spot control, while other strobilurins aren't, Hicks says. The product doesn't need to be mixed with others because it creates results by itself, Fausey says. "It really is a new option for dollar spot control as far as a new mode of action to rotate to, because a lot of the times, traditionally with strobilurins, you would tank mix it with another fungicide for dollar spot control, whereas with Pinpoint, you won't have to do that."

One situation in which superintendents would want to tank mix Pinpoint with another product is when dollar spot has already appeared and needs to be treated curatively, Chamberlin says. On bentgrass greens far South, for instance in areas such as Georgia, curatively treating dollar spot is difficult to do during the summer. "You want to avoid curative control of diseases, period," he says. "But we also know how the real world is; sometimes you don't get out ahead of them, and you do need to respond curatively."

Pinpoint controls dollar spot throughout both a large geographic range and multiple seasons, Fausey says. "I really look at it as a product that you can rotate into a current program anywhere from early spring to late fall," he says.

Dollar spot appears in the spring and fall in the South, Chamberlin says. "It tends to like somewhat cooler weather, and so it's very often the first pathogen that superintendents really see to any significant degree," he says. "But you don't typically have other pathogens present early spring, late fall, and that's when dollar spot would be your primary pathogen of concern."

While applying Pinpoint by itself will take care of dollar spot in the spring and fall, Chamberlin says superintendents should rotate it in the summer with products that fight other diseases.

Like in the South, dollar spot is one of the first spring pathogens to appear in Ohio, Hicks says. "The difference is, on the other pathogens that show up in the spring, a lot of them lessen or go away as the summer progresses, where dollar spot increases over the summer," he says.

The product will benefit superintendents. "Having a new addition like this that's viable is a big bonus if you're a turf manager." Hicks says. **GCI**

NUTS & BOLTS

GETTING THE BAND BACK TOGETHER



Paul F. Grayson is the Equipment Manager for the Crown Golf Club in Traverse City, Mich., a position he's held for the past decade. Previously, he spent 8¹/₂ years as the equipment manager at Grand Traverse Resort & Spa. Prior to that, he worked as a licensed ships engine officer sailing the Great Lakes and the oceans of the world.

hat equipm safely drive you automa turned dow and bring th

That equipment on your golf course would you like to see safely drive itself? Help us automate ours and we will help you automate yours. Two of the big mower companies turned down my offer to help them automate their mowers and bring them to market. That only leaves me one option

to get the self-driving mowers I need: it is time to get the band back together and automate the Crown machines myself, one machine at a time.

From 2001-07, I led a DARPA Grand Challenge team that helped to develop the self-driving system being used extensively by the U.S.



Army since 2007, saving more than one soldier's life a day. This life-saving technology is now transitioning to civilian cars, buses and trucks, and is expected to save 166 lives a day. Why not use this self-driving system on golf course mowers that mow set patterns?

Like before, membership on my team is open to just about anyone who wants to play. Members and supporters will be contributing whatever they can in money, manpower and materials in exchange for shares in the result. Because everyone is a volunteer, we all must keep our day jobs, but like the retired super heroes in "The Incredibles," we can work on saving the world on our bowling night.

TYING UP LOOSE ENDS

Going through my old papers I found that I had qualified years ago for but never bought the Equipment & Engine Training Council Certified Master Technician patch for my jacket. The costs of the other patches were covered by the testing fees and came with my individual area certifications. I ordered the patch online for \$20 just for fun and it



arrived a few days ago. Are your mechanics certified?



4WD

The two-track to the hardware store is a sand hill. The solution is to use our only four-wheel drive utility vehicle whenever I make a run to the hardware store for supplies or parts. In first gear with the rear differential locked and the four-wheel drive engaged, it goes straight up the long hill without hesitating. I am looking for a way to convert some of our other utility vehicles to 4WD using stock parts. Here is a picture of how Jeep connects their front wheels to the drive line.



TURNING CIRCLE

I have been studying how such a tight turning circle is achieved on new equipment with the hope of improving the turning circle of the older equipment in my motor pool. In one case, the newer model utility vehicle came without the turning stops that were on the old one, so I cut them off to match the new version, greatly reducing the older vehicles turning circle.



SET SPEED

New mowers have electronic controls that let you set max mow speed on the screen. For older mowers, I have been setting the speed using the GPS unit out of my car and the mechanical speed stops on the mowers.



NEW SECURITY

After a series of break-ins where gasoline was siphoned out of the vehicles in storage, we bought a security camera from Staples which I installed. It was only \$129 and is quite sophisticated. It can be remotely controlled from the superintendent's smart phone and will text him whenever there is motion in the shop at night and show him a 10-second clip of what tripped the alarm. He can stream the video live to his smart phone whereever he is in the world. It has night vision so he can see in the dark as well as daylight. Because the camera was installed, no more gasoline has gone missing. Also, he gets a text when the first person shows up for work each day. The



camera has a mike on it so he can hear us talking in the shop and a speaker so he can join the conversation remotely.

20-TON PRESS

I got a good price on a 20-ton press and use it nearly every day since it arrived. I put it next to the tool box because sockets make great press tools and having them within arm's reach speeds up the work.

TODAY'S TRICK OF THE TRADE

To remove a bearing race from a blind hole, use the MIG welder to run a bead where the balls rolled. As the weld cools, it shrinks the bearing race enough that it falls out. It does look like a magic trick every time I do this.

BEVERAGE CART RULE #1

"Do not drive the beverage cart on



the greens." No one told her because everyone thought she knew that the beverage cart would leave tracks. We could roll the marks out. **GCI**

WHEN THERE'S LESS NOIS By Guy Cipriano

Ohio course in prominent location relished its opportunity to participate in a demonstration program involving propane-powered mowers. ñ1.

uniors are playing the front nine. Regulars are playing the back nine. Airplanes are departing and arriving overhead. Cars are zipping past the entrance.

Given its location, Airport Golf Course represents a symbolic place to craft a quiet message about golf course maintenance. The 18-hole municipal facility is adjacent to Port of Columbus (Ohio) International Airport, which serves close to seven million passengers per year.

Superintendent Chris Haughey has learned to ignore the planes. So, on this bustling day on the ground, he aligns four vehicles in a slightly diagonal formation between the 10th tee and 18th green. Even mechanical novices notice the difference between this quartet of vehicles and other riding mowers. Metallic tanks protrude from the bodies, one on each side of the two larger mowers.

Haughey starts a fairway unit and zooms to the 18th hole for a five-minute demonstration, mowing a few passes from 2 to 10. Golfers playing bordering holes plow ahead with approach shots. The roar of arriving and departing planes causes skyward glances. The hum of a propane-powered mower goes unnoticed.

When the Propane Education & Research Council selected eight locations for its propane-powered mowing demonstration program, Airport Golf Course fit the organization's template. The R&R Products equipment landed at multiple facilities operated by management companies, but PERC officials also wanted a relationship with a municipal course in a city apt to experiment with green practices.

Enter Airport Golf Course, where a high-profile location proved an added bonus.

The city's fleet includes 6,300 vehicles across a variety of applications, and the aftermath of Hurricane Katrina, which sent diesel prices soaring throughout the country, led to Columbus adopting a Green Fleet Action Plan, which uses metrics to track successes and establish long-term goals. Fleet operations manager Bill Burns says the city has made progress on adding biodiesel, electric and compressed natural gas vehicles to its on-road fleet. Columbus has trimmed its annual petroleum from 3,309,293 gallons in 2011 to 2,855,848 in 2015. Burns admits greening the off-road fleet is a bit trickier, although the city has added more than 20 propanepowered zero-turn mowers.

An existing relationship with R&R Products' Jim Coker and trade show conversations with PERC deputy director of business development Jeremy Wishart convinced Burns trying propane-powered at a cityowned golf course was a worthwhile cause. The parks and recreation department operates six courses, and Burns quickly identified Airport Golf Course as the facility best positioned to participate in the demo program because of Haughey's penchant for handling change. "As soon as I had enough information to give Chris a head's up, I said, 'Hey, this is what I think we can do," Burns says. "And Chris didn't even take a breath. He said, 'Let's do it.""

The course received four new pieces of equipment last July: a fairway mower with two 9 ½-gallon tanks, a sur**C** We as a society don't really think about alternatives until it starts to hit us in the pocket. I hear routinely that a dollar figure like \$3 a gallon is when fleet managers and owners start going, 'What are my other alternatives.'''

- Jeremy Wishart, PERC

rounds mower with two 7 ½-gallon tanks, mechanical bunker rake with two 4-gallon tanks and greens mower with a 7 ½-gallon tank. In return for the equipment, Haughey and technician Matt Luck were required to create a log of usage data. Luck called the arrival of the equipment Airport Golf Course's version of "Christmas in July."

Measurements collected by Haughey and Luck included acres and hours mowed, price per gallon of propane and labor performed on the equipment. The price of propane acquired by the city hovered around \$2.15 per gallon this past summer, according to Haughey. The city had experience handling propane infrastructure such as cages and tanks because of its participation in a PERC incentive program involving zero-turn mowers. Still, Burns says the city's propane usage "is a drop in the bucket" compared to its petroleum usage. The more propane the city uses, the more favorable rates it will receive via the bidding process, Burns adds. Gasoline prices in the U.S. averaged \$2.25 per gallon as of mid-October, and the City of Columbus receives favorable rates because of the volume of petroleum it purchases.

A gallon of propane mows between two and three acres at Airport Golf Course while a gallon of diesel mows around four acres, according to Haughey. Luck, who has spent 13 years with the city, says the propane vehicles require less maintenance because the fuel burns cleaner. "You're not changing oil as often or doing things like that," Luck adds. "Maintenance-wise it's costing us less money to take care of."

PERC officials are compiling numbers logged by the courses involved in the demonstration program. Courses involved in the program received the option of purchasing the equipment at a discounted rate, and Columbus is mulling using propane-powered equipment past the period. "Purchasing anything - off-road, on-road with taxpayer dollars is always a double-edged sword as the green technology is usually more expensive," Burns says. Retrofitting existing equipment with propane tanks could be an attractive option for a municipal operation, and Wishart says petroleum-powered equipment "can be relatively easily" converted to run on propane. The possibility of converting some pieces of Columbus' golf fleet excites Luck. "That would be neat to do," he says. PERC offers landscape contractors a \$500 incentive per mower to

YOU LOVE HAPPY GOLFERS. WE LOVE HAPPY READERS.

Want something more from Golf Course Industry? Tell us about it!

Reach us any time at subscriptions@golfcourseindustry.com.

- General questions/feedback
 - Address/contact updates
 - Renewals •
 - Colleague subscriptions

GOLF COURSE

being the right answer for everybody."

Being involved in the demonstration program provided Haughey and Luck with rare opportunities to dabble with an energy form courses with higher budgets might resort to in the future. Airport Golf Course's 100 acres, which include 24 acres of fairways. five acres of tees and four acres of greens, are maintained by a crew consisting of four workers. The naturalization of 20 acres in out of play areas represents the in-house efforts pursued by Haughey to help the city achieve broader environmental goals. The course opened in 1966 and was forced to close in 2011 for renovations because the airport needed to move a runway. Columbusbased architect Dr. Michael Hurdzan oversaw the golf portion of the project, which included the rerouting of 12 holes. Decreasing the number of bunkers from 22 to 12 further reduced the maintenance footprint. Hurdzan, coincidentally, worked on the initial design with Jack Kidwell.

Former Columbus Michael Coleman played golf at the course last year and saw the propane-powered mowers in action. Coleman served as a major proponent of greening the city's fleet during a 16-year tenure as mayor that ended Jan. 1, 2016.

"We are one of eight golf courses in the United States of America to have done this," Haughey says. "How cool is this? Little old Columbus Airport Golf Course is part of this. And the mayor has been here. How cool is that?" GCI

EQUIPMENT

convert to propane.

None of the golf industry's three major mower manufacturers have propane-powered equipment currently on the golf market, but Wishart says the demonstration program has raised awareness with OEMs. Stable fuel prices are temporarily shelving urgent demand for alternative energy forms. The average annual fuel budget for golf courses in 2016 is \$25,100, according to GCI's State of the Industry report. The average was \$28,174 in 2012.

"We as a society don't really think about alternatives until it starts to hit us in the pocket," Wishart says. "I hear routinely that a dollar figure like \$3 a gallon is when fleet managers and owners start going, 'What are my other alternatives.' And that's \$3 a gallon for your 87 octane. That doesn't even include what the expense for a higher 93 non-ethanol blend is. So certainly as gas prices climb and diesel prices start to climb, we start seeing more attention.

"With that said in this golf market and the professional sports turf market, corporate image in having a sustainability goal or a green image carries as much weight to the right customers, forwardthinking customers to put something in place to have a true opportunity to kind of affect both sides of the spectrum, not just the financial, but also the environmental. It's kind of that one-two punch, and if we get our messaging right and certainly if another OEM comes along or another two OEMs come along, I think it's setting up for that perfect storm to Terry Buchen, CGCS, MG, is president of Golf Agronomy International. He's a 41-year, life member of the GCSAA. He can be reached at 757-561-7777 or terrybuchen@earthlink.net.





HOMEMADE FIREWOOD SPLITTER

This 1988 Toro Greensmaster 3000 was converted into a homemade, towable firewood splitter, using the framework, engine, hydraulic system tank and pump, engine control panel, battery, tires, wheels and a 1.5 gallon recycled Briggs & Stratton fuel tank. The hydraulic cylinder was free from an old Cat bulldozer and the "I" beam was recycled from a construction site. Three hydraulic hoses were made locally for the cylinder and return from the pump. A hydraulic control

valve was acquired from a local hardware store. The splitterportion and hydraulic cylinder mounting



brackets were made using recycled flat steel cut and welded together and the tow hitch was made from 2 inch by 2 inch square tubing and ¼-inch flat steel. Outside labor cost about \$200, parts were about \$150 and it took about 20 hours of inhouse labor. Brad Twidwell, superintendent at the Cape Girardeau (Mo.) Country Club, conceived this great idea.



RECYCLED HAND SPIKER

This 1980s Toro Sand Pro spiker attachment individual unit was modified by removing the frame and drilling holes and adding brackets on both sides so an old Jacobsen walkbehind greens mower solid front roller could be attached. Old parts from unused equipment were made into the removal "T" handle (with linchpin to hold it in place) for pulling and pushing the

spiker. The spiker is pushed or pulled onto the turf on the solid roller and then the handle is flipped-

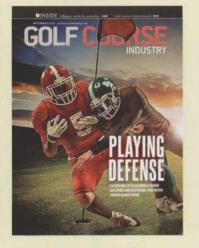


over into the opposite direction to lower the spiker into the turf. Brad Twidwell, superintendent at the Cape Girardeau (Mo.) Country Club, conceived this great idea. It took about four hours of labor and about \$45 in parts.



Globetrotting consulting agronomist Terry Buchen visits many golf courses annually with his digital camera in hand. He shares helpful ideas relating to maintenance equipment from the golf course superintendents he visits - as well as a few ideas of his own - with timely photos and captions that explore the changing world of golf course management.

Were You Featured In This Issue?



Reprints enable you to reuse your article and simply place it into the hands of your target audience. Having been featured in a well-respected publication adds the credibility of a third-party endorsement to your message.

Give yourself a competitive advantage with reprints. Contact us for more information regarding reprints and additional applications designed to meet your challenging market needs.

Call Bonnie Veliknonya at 800-456-0707

OUTSIDE THE ROPES

(MORAGHAN continued from page 30)

firm with the members, explaining the dangers and offering a timeline but remaining realistic.

It may be necessary to explain to members why your course isn't open yet but a nearby one is, beginning with a different level of damage. You're the expert and it's your responsibility to bring the course back safely and properly. Don't let members push you into altering your schedule and plans. Make sure the general manager, golf pro and all the other principals who members interact with are on the same page.

Putting Greens – Once it's safe to assess the golf course, start with the greens, where half of the game is played and the quality of the playing surface is most noticeable and pertinent.

Irrigation – Carefully check the irrigation system and the pumping stations to ensure proper operation and water distribution.

Electronics - Electronic control stations are highly susceptible to water infiltration and/or damage from fallen trees. In a hurricane, flooding and high tides can contaminate turf grass rooting systems with high amounts of sodium and bicarbonates that can have long- term plant-health impacts if not properly flushed out of the soils. Sand Bunkers - Heavy rain, tidal flooding, and strong winds can severely affect bunkers, especially those with steep slopes. They must be cleaned, repaired, and have sand and subsurface fabric liners replaced. Perhaps more than any other areas of the course, these will require time and money.

Sodium Impacts – For coastal courses, flooding from storms and increased tide fluctuation increases sodium in the soil and turf plant. Excessive amounts of sodium negatively impact the playing quality and health of fine turfgrass both in the short and long term.

ACTION

Move the debris blocking entrance onto the course and club grounds so you can progress in a logical fashion.

Trees will probably be your biggest concern, not only those that have fallen but those that will eventually fall. You'll need a tree service with a trained arborist who can give an accurate assessment of these "leaners" (also known as "widow makers") and which will last the longest. Be sure to take photos, especially if a favorite tree is compromised or presents a future liability.

Even though members will promise to stay away from the fallen and leaning trees, do not let them on the course until it's truly safe. The safety of golfers and your crew must remain the top priority.

Dealing with debris takes time and a careful coordinated cleanup, all the more reason to keep golfers off the course until the coast is absolutely clear. Trust me; you don't want your club featured on the local news.

If you are not using your practice range for debris staging, try your best to get the range open quickly. It may keep those who just must hit a ball at bay a bit longer.

No matter how quickly you work, it won't be fast enough for some golfers. Be kind, have patience and understand that everyone thinks he's the only one affected. The same when dealing with your crew, who will be exhausted not only physically, but emotionally. The work is long, hard and not particularly rewarding, so you'll have to make an extra effort to maintain morale. And their personal lives may have been impacted, as well.

And as if you didn't have enough to deal with, remember that Mother Nature will continue to do her thing so everyday course maintenance will still be necessary.

They don't call it a "disaster" for nothing. GCI

AD INDEX

www

INNO IM WIN

at Gi or ca

CLASSIFIEDS

COMPANY	WEBSITE	PAGE
AMVAC	amvac-chemical.com	9,11
BASE	betterturf.basf.us	2, 37
Buffalo Turbine	buffaloturbine.com	10
Foley United	faleyunited.com	25
Greenworks	greenworkstools.com	17
Grigg Bros.	griggbros.com	19
Jacobsen	jacobsen.com	60
Koch	KochTurf.com/UMAXX	42
Lebanon Turf Products	LebanonTurf.com	4,5
Neary Technologies	nearytec.com	31
Ohio Turfgrass Foundation	OTFSHOW.org	40
PBI Gordon	GordonsProfessional.com	29
Progressive Turf Equipment	ProgressiveTurfEquipment.com	6
Rain Bird	rainbird.com	7
SipcamRotam	EnhancedTurfQuality.com	59
Turf Diagnostics	turfdiag.com	10

GOLF COUR INDUSTRY

Serving the Business of Golf Course Management

Vol. 28 No. 11 GIE Media, Inc. 5811 Canal Road Valley View, Ohio 44125 Phone: 800-456-0707 • Fax: 216-525-0515

EDITORIAL

Pat Jones Publisher/Editorial Director pjones@gie.net Mike Zawacki Editor mzawacki@gie.net Guy Cipriano Associate Editor gcipriano@gie.net Terry Buchen Technical Editor at-large Bruce Williams Senior Contributing Editor Patrick Williams Editorial Intern

GRAPHICS / PRODUCTION Jim Blayney Art Director Helen Duerr Production Director

ADVERTISING/PRODUCTION INQUIRIES Jodi Shipley

jshipley@gie.net, 216-393-0273 SALES

Russell Warner National Account Manager rwarner@gie.net • 216-393-0293 Craig Thorne Account Manager cthorne@gie.net • 216-393-0232 Bonnie Velikonya Classified Sales bvelikonya@gie.net • 216-393-0291

CORPORATE

Richard Foster Chairman Chris Foster President and CEO Dan Moreland Executive Vice President James R. Keefe Executive Vice President Helen Duerr Production Director Christina Warner Audience Development Director Maria Miller Conferences Manager Kelly Orzech Accounting Director Irene Sweeney Corporate Communications Manager Kevin Gilbride Business Manager, GIE Ventures

GOLF COURSE INDUSTRY IS A MEMBER OF:

Golf Course Superintendents Association of America, National Golf Foundation, Golf Course Builders Association of America, The Irrigation Association, Responsible Industry for a Sound Environment

FOR SALE	MERGERS & ACQUISITIONS
Discount Small Engines & Parts	BUYING OR SELLING A GOLF COURSE?
Small engines & parts from Briggs & Stratton, Kohler, Tecumseh, Robin and more. www.smallenginesuppliers.com	Leaders in Exclusively Marketing and Selling to the Golf Course Industry ————————————————————————————————————
Also, look up your own parts and buy online at www.smallenginepartssuppliers.com	GOLF & MARINA™ PROPERTIES GROUP
NNOVATORS IN	Eddy A. Dingman 0: 847.313.4633 C: 847.987.6626 eddy@nationalgolfandmarina.com www.nationalgolfandmarina.com
IMPERMEABLE WINTER PROTECTION Helps prevent Ice Damage	Golf Courses Golf Developments/ Communities Acquisitions CORPORATE MEMBER
Crown Hydration Desiccation Temperature Fluctuations	SEEDS
Low Temperature Kill	NATIVE SEEDS Largest supplier of native seeds east of the Mississippi. Over 400 species of grass and wildflower seeds for upland to wetland
0 Years of Research greenfacket	sites. Bioengineering material for riparian areas and erosion control. Contact ERNST SEEDS today. www.ernstseed.com – 800/873-3321
D Years of Research GreenJacket.com call 888-786-2683 aptended in U.S. and Canada Actual apring photo by a Superimendent — not retouched!	sites. Bioengineering material for riparian areas and erosion control. Contact ERNST SEEDS today.
In the second se	sites. Bioengineering material for riparian areas and erosion control. Contact ERNST SEEDS today. www.ernstseed.com – 800/873-3321

nprofit organizations authorized to mail at nonprofit rates) (Check one) offit status of this organization and the exempt status for federal income tax purposes. N/A

13.	Publication Title: Golf Course Industry		
		Average No. Copies	
	Issue Date for Circulation Data: Sept 2018 Extent and Nature of Circulation P	Each Issue During receding 12 Months	No. Copies of Single Issue Publisher Nearest to Filing Date
	otal Number of Copies (Net press run)	17.945	17.858
	equilimeter Paid and/or Requested Distribution (By Mail and Outside the Mail)		17,000
	(1) Oxiside County PathRequested Mail Subscriptions stated on PE Form 3541. (Include direct write request from recipient, telemarketing and internet requests from recipient, and subscriptions includin nominal rate subscriptions, employer requests, advestiger prof copies, and exchange copies.)		14,111
	(2) In-County Paid/Requested Mail Subscriptions stated on PS Form 3541. (Include direct written requ from required, biometasting and internet requests from recipient, paid subscriptions including nomine subscriptions, encloser requests, selventiaré a proof opsise, and exchange costes).		0
	(3) Bales Through Dealers and Carriers, Street Venders, Counter Sales, and Other Pailt or Requester Distribution Outside USP56	1 36	36
	(4) Requested Copies Distributed by Other Mell Classes Through the USPS (e.g. First-Class Mell®)	0	0
c. d	Total Paid and/or Requested Distribution (Sum of 15b (1), (2), (3), and (4)) Nonrequested Distribution (By Mail and Outside the Mail)	12.068	14,146
	(1) Oxiside County Norrequested Copies Stated on P3 Form 3541 (include Sample copies, Request 3 years old, Requests induced by a Premium, Bulk Sales and Requests including Association Request Names obtained from Business Dimotories, Lists, and Other sources)		3,600
	(2) In-County Nonrequested Copies Stated on PS Form 3541 (Include Sample copies, Requests Over years old, Requests including Association Requests including Association Requests Names offerentines Directories, Lists, and other societies)		٥
	(3) Nonrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class M Nonrequestor Copies mailed in excess of 10% Limit mailed at Standard Mail® or Package Services F		0
	(4) Norrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Bhowro and Other Sources)	oms 100	0
	Total Nonrequested Distribution (Silen at 35d (T), (2), (3), and (4))	5,153	3,600
	Total Distribution (Sum of 15c and 15c)	17.021	17.740
u	Copies not Distributed	124	112
	Total (Sum of 15f and g)	17.045	17,858
	Percent Paid and/or Requested Circulation (15c divided by 16f times 100)	71.08%	79,7195
18	Total circulation includes electronic copes. Report circulation on PS Form 3526-x workshee		1.0.1.1.00
17	Publication of Statement of Ownership for a Requester Publication is required and		November 2016
200		a of this publication.	CONTRIBUTION CASE IN
10.		e on one processes	Date
155	Christina Warner, Audience Development Director		10/01/2016
omit	rifly flust all information furnished on this form is true and complete. I understand that anyone who furn to material or information requested on the form imay be subject to criminal samptions (including fines a article).		

PS Form 3525-PLJuly 2014

PARTING SHOTS

GOLFER-IN-CHIEF



Pat Jones is editorial director and publisher of Golf Course Industry. He can be reached at pjones@gie.net or 216-393-0253.

he good news is that a golf course owner is about to become the U.S. President. The bad news is he has more baggage than Kim & Kanye checking into a Ritz-Carlton for a month.

Over the past couple of days, I've asked a lot of people I respect ... lobbyists, executives, business owners – my boss at GIE Media – if they saw this coming and not one of them has said yes. The pollsters were wrong, the pundits were wrong and (god forbid) I was wrong. I'd been happily telling anyone who'd listen that the "genius" election analyst Nate Silver called this thing a couple of years ago and it was a dead mortal lock that we'd have our first female president.

Wrong, wrong, wrong. I unfollowed Nate Silver and FiveThirtyEight on Twitter and Facebook this morning and I took the following pledge: I will never, ever get emotionally involved in an election. Pete Townshend's lyrics echo loudly in my head: I won't get fooled again.

So, what does this mean for our little industry? A few thoughts...

SOME BIG FEDERAL CHALLENGES JUST

GOT EASIER. Everything's on the table: **WOTUS** – Either the rule gets overturned in Congress or it comes to a newly conservative 5-4 Supreme Court and gets tossed out for legislative overreach.

DOL Overtime Rule - This is largely an executive order so it's highly likely to be toast, either by another executive order or by a legislative effort to phase the change in slowly over a number of years. That said, this law will go into effective Dec. 1 so plan accordingly and keep your ear to the ground about enforcement (if any). Federal Minimum Wage Increase -A big jump is off the table. This will be a burning local issue (see below). EPA - I have no clue who Mr. Trump will select as his EPA administrator. but I'll bet the farm that person won't be all that keen about climate change (coal) or regulations that impact development (WOTUS). Pretty sure that pressure on neonics and other FIFRA issues will diminish as well (at least in the U.S.). One insider told me he expects tons of resignations at the EPA: "Veteran agency people will take retirement rather than serving in a Trump administration. They hate everything about him."

SOME BIG FEDERAL PROBLEMS ARE STILL CLOUDY.

ACA – Obamacare is going to be replaced with something. I must assume that new something will be less burdensome for business. I have no clue, honestly.

Immigration – Does this wild (and pointless) idea of building a bigass Mexican wall mean we can't fix legal, visa-based guest worker programs like H-2B? I don't claim to understand immigration policy but I do know legal guest workers are invaluable to the entire green industry and we're better off with them than without.

GOLFER-IN-CHIEF. It's always good to have a golfer in the Oval Office. Some of you criticized our current chief executive for playing too much golf. That's bull. We should celebrate the fact any modern president views golf as a form of R&R to cope with the most stressful job in the world. That was true with Eisenhower, Nixon, Kennedy, Clinton, Reagan and both Bushes. I may not like what the Trump brand means in golf, but it's obviously a win for us to have someone who understands our business in the most powerful job in the world. Maybe, just maybe, National Golf Day can visit the White House.

WHAT WON'T CHANGE? Remember what the late, great Tip O'Neill said: All politics is local. The fact that there's been a sea change in the White House will not mean much to local and state activists. If anything, you're likely to see anti-pesticide groups and others focus more on municipalities, counties and states.

The No. 1 local issue in many big cities will likely be minimum wage. That was already coming and it's not likely to change. Don't start thinking we can defund lobbying or government affairs budgets ... we'll just be spending more of it on state issues and local messes.

So, on the shallowest of levels, the Trump Administration is seemingly a good thing for golf. Our regulatory burden may get lighter and some of our labor issues could improve. Our next President is not only a golfer, but someone with a stake in our business. But, like it or not, his golf bag is the lightest of the baggage he'll tote into the White House in a few months. Time, as they say, will tell. **GCI**



REWARDS BEYOND



Golf course superintendents can receive significant savings and rewards for purchases between Nov. 1 and Dec. 15 with the

SipcamRotam[™] 2017 ETQ Early Order Program

Check out this year's qualifying products, discount period and rewards offer online: www.EnhancedTurfQuality.com



The HR600 is built with uptime-boosting features designed to keep you mowing.



Save up to 50 hours of annual routine maintenance



InCommand[™] onboard diagnostics for quick troubleshooting



Mow up to 13.8 acres per hour for increased productivity



SureStrength[™] decks constructed with high strength structural steel

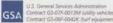


Exclusive Tilt Sensor Technology[™] helps keep operators safe











1.888.922.TURF | www.jacobsen.com