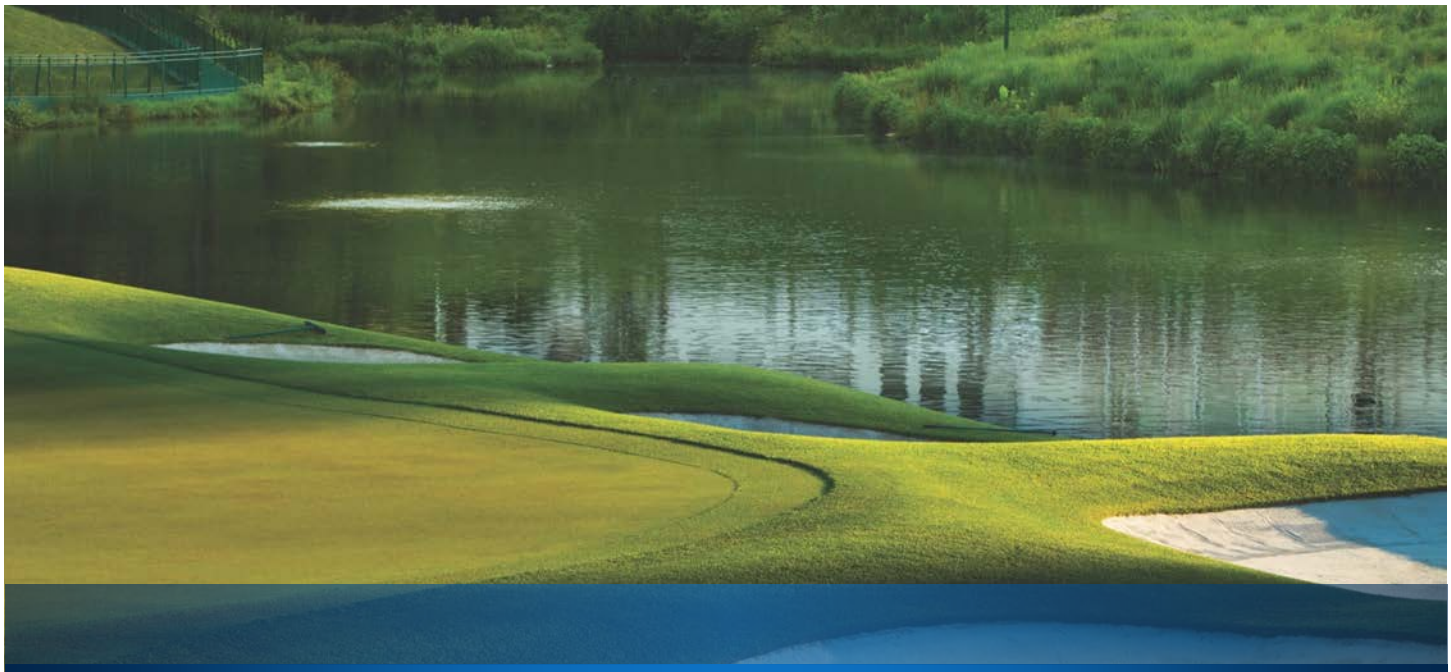

COURSE CONSULTING SERVICE

Onsite Visit Report

Bella Vista Village POA

Bella Vista, Arkansas

Visit Date: July 10, 2019

Present:

Mr. Keith Ihms, CGCS, Director of Golf Course Maintenance
Mr. Reed Holly, Golf Course Superintendent, Kingswood and Berksdale
Mr. Greg Jones, Golf Course Superintendent, Highlands
Mr. Kyle Soller, Golf Course Superintendent, Scotsdale
Mr. Rob Dreesen, Golf Course Superintendent, Bella Vista
Mr. Scott Hanson, Golf Course Superintendent, Dogwood
Mr. Thomas Walton, Assistant Superintendent, Bella Vista
Mr. Jason Loyd, JAG Chairman
Ms. Susan Nuttal, JAG Recording Secretary
Ms. Ruth Hatcher, Committee Member
Mr. Jerry Hover, POA Board Member
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The USGA Green Section develops and disseminates sustainable management practices that produce better playing conditions for better golf.

Executive Summary

This was my third consecutive year visiting the Bella Vista Village golf courses for the USGA. The venue and objectives for this consulting service visit was similar to years' past. A roundtable discussion with Mr. Ihms and the superintendents for all six golf courses preceded an on-course field scouting, discussion, and educational forum with members of the golf courses. Afterwards, I participated in the Golf Joint Advisory Committee Meeting.

Weather, specifically excessive rainfall, continues to factor in the maintenance and budget of the golf courses. Rainfall amounts are 115 percent of average for this time of the year. Damage to a bridge has one of the golf courses, Berksdale, closed. This is putting more rounds on the other golf courses. Turfgrass coverage is excellent on greens and tees. With exception of some thin areas on the fairways and roughs due to stresses from shade, high soil moisture levels, and compaction from cart traffic, bermudagrass coverage is good.

Continuing issues are the common bermudagrass areas, and maintenance schedules and course consistency being negatively impacted due to interference from sporadic early morning shotgun starts. Some additional fans for high stress creeping bentgrass greens are needed to counter periods of high temperatures coupled with rainfall and lack of air movement. Other subjects, and more details around agronomics are included and will be addressed below.

Table of Contents

Putting Greens **3**
- Observations 3
- Recommendations 4

Golf Course Maintenance **6**
- Observations 6
- Recommendations 6

Fairways and Roughs **7**
- Observations 7
- Recommendations 9

Summary **11**

Additional Considerations **12**

Putting Greens

Observations

1. **The bentgrass putting greens are in excellent conditions as observed at Bella Vista Country Club course.**

   - No diseases were observed. A preventive fungicide program is being employed with added emphasis to diseases such as Pythium blight and brown patch which can be especially problematic during high stress periods of heat coupled with rainfall.
   - Some putting greens, such as No. 17 on Bella Vista Country Club, are located in areas where any wind or air flow is negated by low elevation and/or trees. When sun intensity coupled with high temperatures increases, especially with high rainfall events, these greens are especially susceptible to heat stress and turfgrass death.

Picture 1: Bella Vista Country Club golf course putting green No. 17. Excellent turfgrass coverage and quality following renovation and re-sodding following flood damage in 2017.

2. **Scotsdale Course is the lone golf course, of the six at Bella Vista Village, that has ultradwarf bermudagrass putting greens.**

   - Winter kill concerns. Many of the greens at Scotsdale experienced severe winter damage the preceding winter of 2017 to 2018. This was also the case on many other golf courses across the southern United States. This even occurred with covers in some areas of the south with long durations of low freezing temperatures. Many of the Scotsdale greens were re-established.
   - Summer splendor. Bermudagrass greens give golfers an alternative to creeping bentgrass in the summer months. Ultradwarf bermudagrass can deliver a fast putting surface combined with good firmness. Depending on temperatures and environmental conditions, bentgrass can be softer as a result of water syringing for temperature control.
   - Quality, playability and summer maintenance. Unlike creeping bentgrass, bermudagrass greens require summer aeration and continuing sand topdressing to deliver excellent playability, consistency and long-term performance.
     - The aeration plan is for three 0.25-inch aeration events this summer.

- Grooming, or vertical mowing, is being performed to further improve density while creating channels for the sand to penetrate.
- Primo® growth regulator is being applied at 3 ounces to the acre every seven days to maintain density and consistency with an emphasis on ball roll and speeds.
- Looking at a representative profile from the practice putting green, there is good sand dilution and excellent rooting despite having to re-establish many of these greens following the 2018 winter kill event (see Picture 2).
- There is a slight concentration of black layer organic matter in the top 1-inch.

Picture 2. Representative turfgrass soil profile from practice putting green, exhibiting rooting to a depth of almost 6 inches (left), following 0.25-inch core aeration and sand topdressing (right).

3. **Increased damage to the holes has been observed as a result of golfers removing the ball from the hole with the pin in place.**
   - The increased damage is due to knuckles, hands, and in some cases the ends of putters and putter attachments being used to retrieve balls.

Recommendations

1. **The benefits of fans for cooling creeping bentgrass greens can make the difference between life and death depending on the severity and duration of the heat. I have observed with a thermal thermometer, a canopy temperature drop in excess of 20 degrees Fahrenheit in direct sunlight where a fan was operating on a bentgrass putting green versus not.**
   - For problem holes with limited air movement like Bella Vista Country Club No. 17, a fan is more valuable than any fungicides in maintaining turf quality and preventing turfgrass loss.
   - Fans are more effective at cooling than syringing. See Bentgrass Management in July: The Battle Begins and Cooling Creeping Bentgrass Putting Greens for more information.
   - Removal of trees that can increase air flow is also helpful at alleviating summer stress decline on creeping bentgrass greens.
2. **A new growth regulator to the turfgrass market, Anuew™, is increasingly being utilized on bermudagrass and bentgrass putting greens alike.**
   - Anuew is similar to Primo in mode of action and helps prevent expansion of any off-types. It has no soil activity and is absorbed through the foliage.

- Golf courses with ultradwarf greens, especially those trying to manage off-types, have been successful, utilizing Anuew with Primo. Anuew has been observed to slow or even decrease the amount of off-types present over time. Greater uniformity of the playing surface, texture and density has been observed without having to back off of surface management practices, such as in fear of scalping these off-types.

- Anuew helps extend the consistency and residual of the growth regulator response when used on seven-day intervals, allowing golf courses that had been using Primo twice per week to go to a seven-day spray interval.

- It is good to gain some experience with the product in comparison to Primo. Rates to consider on Champion bermudagrass would be 4 to 6 ounces of Anuew per acre alone or at reduced rates with Primo. A common combination to evaluate is 1 to 2.0 ounces Primo + 4.0 ounces to 5 ounces of Anuew per acre weekly as compared to 3 ounces of Primo alone. Alternate this combination with Primo alone every seven days. Pay close attention to grain, leaf texture and effects on ball roll and speeds to arrive at a good rate ratio.

- For creeping bentgrass, Anuew is being used alone in lieu of Primo in order to minimize collar damage from overspray. TifGrand™ and Latitude 36™ have been observed to be more sensitive to Primo than Tifway™ or common bermudagrass.

3. **Ultradwarf (ULD) Bermudagrass Aeration. ULD bermudagrass greens accumulate organic matter over time. In Northwest Arkansas, the amount of accumulation will be less than what occurs in more southern areas where the growing season is longer, but still requires attention.**

   - The same area, 4.91 percent of the putting green area is impacted by 0.25-inch core tine aeration on 1 x 1 inch spacing as compared to 0.5-inch core aeration on 2 X 2 spacing. I prefer the large tines as it is easier to get more sand following dragging into a 0.5-inch versus a 0.25-inch hole.

   - To greater impact and negate the slight black organic matter layer developing, which is an indication of lower than ideal oxygen levels, I recommend at least one 0.5-inch core aeration with the one 0.25-inch core aeration that has already been made. See Aeration and Topdressing For the 21st Century for more details around area impacted by aeration and applicable amounts of sand topdressing.

4. **Too many fine to very fine sand particles in the sand topdressing mix can contribute to the slight black layer observed on the Scotsdale putting green. Investigate the sand topdressing mix; it should contain no coarse particles (1.0 to 0.5 mm) and no more than 30% fine particles. Specifically, no more than 25% fine particles (0.25 to 0.15 mm) and no more than 5% very fine particles (0.15 to 0.05 mm).**

   - Sand mixes that contain more than 30% fine sand particles have been shown to reduce infiltration rates to concerning levels in research and field observations. Conversely, sand mixes with no coarse particles but slightly more fine sand particles (listed as “Medium-Fine” sand in the table above) do not have negative impacts on turf health and infiltration when used in conjunction with a sand mix that falls within USGA recommendations during aeration. These sands also more easily incorporate into the turf canopy.

   - See Light and Frequent Topdressing Programs, an article that covers this topic in detail.

5. **Damage to the holes where the flagstick is left in can be easily prevented with some caution and communication made to the golfers. I wrote an article on this subject as it is a problem encountered at many golf courses that I visit. You are free to use this article, Be Careful After Making That Putt, for your mailings or posted in the Pro shop.**

    - Some golf courses and manufacturers are experimenting with full-length flags with a metal base/ferrule on the bottom. At this point, the attachment would not be considered legal, but this could change in the future. Discussions within the USGA are ongoing; it has been suggested that more damage could occur from this device than the damage from removing a ball with the flagstick still in.

Golf Course Maintenance

Observations

1. **Lack of adequate closure time for daily and scheduled maintenance activities has been a continuing issue, going back to reports in 2015, at Bella Vista Village.**

    - A half-day, morning closure, is scheduled every 7 to 10 days.
    - The biggest problem is that on many days without course closure, shotgun tee times, some starting at 7:00 AM, leaves inadequate time for course preparation. Additionally, as the golf course superintendent manages his crew, impromptu, unscheduled shotgun starts undermines their ability to do their assigned jobs, schedule and delegate work throughout the entire week with increasing overtime payment.
    - During the committee meeting, a member voiced that the golfers prefer playing early versus later due to the summer heat. Unfortunately, most of the required daily maintenance that delivers consistency and a quality experience for all golfers throughout the day requires, at a minimum, some of the following activities performed prior to play:
        - mowing and rolling of putting greens.
        - cutting cups with movement, aligning and repairing of sod plugs for new flag pin placements.
        - bunker raking, repair and clean up, orientation of rakes.
        - mowing of tees.
        - mowing of fairways (two to three times per week).
        - blowing of clippings from bunkers, tees, and fairways.
        - rope and sign posting when required.
    - Not included is any fertilizer or pest spraying, applications of wetting agents, monitoring of soil moisture and hand watering of hot spots, syringing of bentgrass greens, rough mowing, aeration, bunker edging and blowing, surface management of greens, fairway activities, etc.

Recommendations

1. **A golf course town hall meeting may be advisable to bring in members to discuss the problems with shotgun starts and difficulties with the maintenance department getting course setup and scheduled meeting accomplished.**

- Prior to this meeting, calculate:
    - Daily utilization numbers for each golf course.
    - Number of hours required for each activity.
    - Frequency that each activity requires, daily or otherwise.
    - Number of personnel available to conduct said activities – their days and hours of availability during a given week.
    - Labor costs associated with each activity and overtime labor costs.
    - Amount of available equipment for each golf course and time required for, as an example, fairway mowing vs. greens mowing.
    - Total amount of time required to setup 18 holes with the practice putting green prior to golfers teeing off.
- After calculating these numbers, factor in scheduled maintenance events that require more than a few hours prior to 7 or 8 a.m. to complete – aeration, sand topdressing, etc.
- Compilation of this information in a format that can be distributed or presented will help to communicate the importance of this continuing issue.

2. **Ask for advice from the members and officers as to a solution to this continuing problem. It should be emphasized that course conditions are being compromised by lack of uninterrupted time in the mornings and during the day, and that a tangible solution is needed.**
3. **Shotgun starts should be balanced out among all the golf courses so that they are scheduled and known. Modifying or implementing shotgun starts less than one week in advance should be ceased.**
4. **One day of closure for each golf course once each week for extensive maintenance activities and activities requiring more than three to four hours to complete should be implemented.**

Fairways and Roughs

Observations

1. **Common bermudagrass is the predominant grass on all courses except Dogwood, where 419 is the predominate fairway and rough variety.**
2. **Mr. Ihms informed me that the golf courses, when they were constructed over 50 years ago, were seed established with common bermudagrass. Any stands of Tifway, and to a lesser extent, Latitude 36 bermudagrass, were established from sod repair work.**

    - It is easy to distinguish the superior stand, density, color, and playing surface of the hybrid, sterile Tifway and Latitude 36 varieties adjacent to the common bermudagrass.
    - The common bermudagrass has longer internodes, large and fewer leaves per inch compared to Tifway. Additionally, common bermudagrass has more of a lateral growth habit versus a greater upright growth that is achieved with Tifway bermudagrass (see Picture 3).

- During cooler periods of the year, going into and coming out of the winter, the common bermudagrass canopy degrades faster than the hybrids, resulting in a less desirable playing surface of dormant stems laying atop soil.

3. The other issues that favor increased common bermudagrass and thin areas are:

- The native soil substrate is a heavy clay that drains very slowly, lacking in pore space for oxygen and adverse to good rooting. Using a soil moisture meter, a thin area of predominantly common bermudagrass on Bella Vista Country Club fairway No. 13 was 44% water by volume content. For comparison purposes, the greens are watered when soil moisture levels get below 12% with a target of 15 to 16% volumetric water content.
- There are many areas of heavy shade, such as off Bella Vista Country Club fairway No. 3, where from March to June, there is the maximum potential of five to six hours of afternoon to evening sunlight. If there are extended periods of cloud cover from weather patterns, this duration of sunlight is lessened further.
- Winter kill potential of the bermudagrass favors common bermudagrass as, unlike the sterile hybrids, it can re-establish from seed.
- Heavy cart traffic, especially during the fall and spring months, is causing further compaction of the heavy clay soil.
- Use of Primo or Podium® growth regulator, which helps improve the density and quality of the common bermudagrass, approaches a maximum rate of 33 ounces per acre tolerance whereas the effective rate for other bermudagrass hybrids is 66% less. Legacy® growth regulator, which contains a premix of the growth regulator in Primo with flurprimidol, requires 25% more product for common bermudagrass. So, every time a PGR is applied, the more desirable Tifway or Latitude 36 will be more regulated, favoring growth and expansion of the common bermudagrass.

Picture 3: Common bermudagrass (A) growth characteristics versus Tifway hybrid bermudagrass (B) left. Bella Vista Country Club course on fairway No. 13 where common bermudagrass with thinning apparent in low, wet area (A), adjacent to more desirable Tifway bermudagrass coverage in higher area (B), right.

4. **<u>Weeds</u>. Crabgrass and goosegrass are the predominant, problematic weeds on golf courses.**

   - Crabgrass and goosegrass are annual weeds that originate from seed each year. Crabgrass germinates first, generally starting in March. Goosegrass germinates when soil temperatures get warmer, after the crabgrass, generally in late April to May.
   - Continuing germination can occur throughout the summer, leading to multiple population flushes. For this reason, golf courses routinely broadcast apply herbicides across the fairways and roughs up to, but not on the putting greens, prior to seed germination.
   - <u>Crabgrass</u>. Mr. Dressen started as superintendent at the Bella Vista Country Club course last year. Crabgrass infestations were problematic prior to his arrival. For this reason, Dimension® herbicide, which is strong on crabgrass, was applied in March with great success. No crabgrass was observed on any treated areas.
   - <u>Goosegrass</u>. Unfortunately, the residual of the Dimension, which may have been adversely affected by the overabundance of spring rainfall, did not extend long enough for the goosegrass that germinated prior to May.
     - An Echelon® treatment made adjacent to the putting green collars in May produced areas visually free of goosegrass up to the edge of where the spray was made, whereas it is easy to see goosegrass establishment in areas not treated (see Picture 4).
     - The goosegrass escapes from the Dimension treatment are being spot treated with postemergence herbicides. These spot treatments are apparent as the treated bermudagrass is off-color and yellow in appearance, giving a polka dot appearance. This is transient, and the bermudagrass will recover minus the goosegrass.

Picture 4 – Bella Vista Country Club goosegrass spot treatments with postemergence herbicides on fairway No. 3 (left); fairway surrounding putting green No. 5 where Echelon herbicide treatment in May is effectively free of goosegrass.

Recommendations

1. **Anything that helps improve environmental conditions and alleviate stress will benefit the common bermudagrass and existing hybrid bermudagrass alike.**

   - Removal of problematic trees that negatively impact sunlight is advised.
   - Fairway aeration will improve drainage, reduce soil moisture and encourage rooting. Pulling cores with a core aerator, if only in problem areas, will help improve coverage. Sand topdressing, applied prior to using a slice aerator like the Imantz ShockWave®, delivers sand

in the resulting 6 to 10-inches deep slices made to compacted soils. I observed this equipment during operation, and it was as impressive as was the immediate beneficial effects observed when implemented days prior to a 1.75-inch rainfall event.

- Implement cart restrictions in low areas and areas of sparse bermudagrass cover April to May. This is the critical period when the bermudagrass is trying to green up out of winter dormancy.

2. **Continue with the Legacy applications in lieu of straight Podium. It appears that the flurprimidol is more effective on the common bermudagrass.**

   - Another option to consider is low rates of Plateau® herbicide in combination with Podium. Plateau was discussed in last year's report.
     - At rates of 0.5 ounces, up to no more than 2.0 ounces per acre alone, in conjunction with Podium, there can be better uniformity of growth regulation than when compared to Podium alone.
     - This should be tested first on a rough to assess effects and determine a desirable rate ratio. As Plateau can also provide weed control at 2.0 ounces per acre, this comes at a cost of less than $1.00 per acre. It may be difficult to find this product as most turf distributors do not carry it, nor do they want to sell it. Do not apply this product in close proximity to creeping bentgrass or other desirable cool-season turfgrass species – similar to what is already exercised with metribuzin and MSMA.

3. **There are other bermudagrass varieties that may better compete with the common bermudagrass as a longer term option if fairway renovation were to be considered.**

   - Test Latitude 36 versus another new cold-tolerant bermudagrass variety, Tahoma 31, out of Oklahoma State along half of the fairway on No. 18 on Bella Vista Country Club course extending into the rough. This area has a highly visible population of weak, common bermudagrass approaching the tee when looking out from the putting green.
     - Treat this area with non-selective herbicides starting in late September, with a sequential application in late October. Treat one last time following spring green-up.
     - These treated areas can be continued to be played upon following these treatments.
     - Either with sod or sprigs establish this area and implement a grow-in. Move the tee box up to a temporary tee, so that these areas are free of traffic while they establish.

Picture 5 – Sodded tee box from a golf course in the Mid-Atlantic U.S. Sodded at the same time – Tahoma 32 (left), Latitude 36 (right).

- When corresponding with our other USGA agronomists about Tahoma 31, this grass was observed, following sodding early this summer, to have a finer, more desirable texture of the Tahoma 31 compared to Latitude 36 in the mid-Atlantic area. The Tahoma 31 also appeared to establish more rapidly.

- In the 2014-2017 NTEP bermudagrass study, Tahoma 31 averaged the least winterkill (14%) over two locations.

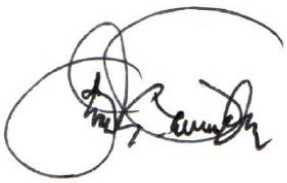
4. **Specticle® is an herbicide that has been used with great success in the past against both crabgrass and goosegrass; however, it does have the potential for weed resistance if overused.**
5. **Barricade®, or prodiamine, is a much better, longer residual herbicide than Dimension but with the same mode of activity. It can be applied at low rates as well as higher labeled rates. At 0.25 pounds of prodiamine per acre, roughly 60 days of preemergence control is achieved. Greater residual occurs during dry, cold conditions compared to wet, hot conditions but only by about 15 days.**
6. **I recommend a two-step application approach for crabgrass and goosegrass alternated each year with Specticle alone.**

    - Apply prodiamine at 1.0 pound of active ingredient in early March for crabgrass. Residual control will extend to goosegrass up to the end of May. In May, apply oxadiazon such as in Ronstar® 2G at 2 pounds of active ingredient per acre.

Summary

I always enjoy visiting Bella Vista Village in addition to my time with Mr. Ihms, his staff and the members. It is well-recognized that every recommendation the USGA or I make will not be taken or can afford to be taken. However, these recommendations are guidelines and serve as a record for the future with the overall goal of improving course conditions for all golfers and members alike. If there are any questions regarding this report or outside of this report throughout the course of the year, please feel free to contact me at any time.

Sincerely,



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Additional Considerations

USGA *Green Section Record*

If you would like to receive the USGA's electronic publication, the *Green Section Record,* click here. It is free, informative and sent directly to you via email every two weeks.

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As a not-for-profit agency that is free from commercial connections, the USGA Course Consulting Service is dedicated to providing impartial, expert guidance on decisions that can affect the playing quality, operational efficiency and sustainability of your course.

First started in 1953, the USGA Course Consulting Service permits individual facilities to reap the benefits of on-site visits by highly skilled USGA agronomists located in Green Section offices throughout the country.

For questions regarding this report or any other aspect of the USGA Course Consulting Service, please do not hesitate to contact our office.