



COURSE CONSULTING SERVICE

Onsite Visit Report

Westbrook Village Golf Club Peoria, Arizona

Visit Date: April 1, 2022

Present:

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The USGA Green Section develops and disseminates sustainable management practices that produce better playing conditions for better golf.

Executive Summary

Thank you for your kind hospitality and the invitation to return to Westbrook Village Golf Club to conduct a Course Consulting Service visit on behalf of the USGA Green Section. It was great to see completion of several course improvement projects since my visit last year, including strategic areas with turf reduction, leveling and expanding several teeing grounds, and the use of Sapphire® to expedite the transition process from overseeding to bermudagrass. It was also great to hear that putting green performance has improved due to more routine grooming and a consistently good quality of cut. There is no more important area of the golf course than the putting greens, and the greens were in the best condition I have seen in all my visits to Westbrook Village. We had a great group of committee members joining us for this course visit, and we had an and engaging discussion about all golf course areas. It was great to see the passion of the members and their love for the golf course. An example of this was expressed with the Adopt-A-Hole program and members donning towels with this name. A brief summary of the primary topics discussed during this course tour of both the Lakes and Vistas golf courses is included below:



It was cool to see the Adopt-A-Hole towels represented numerous times during our course tour.

- **Turf reduction.** Reducing irrigated turf to less than 90 acres per golf course is an important strategic change that needs to occur on both golf courses. It was great to see the agronomic team phasing in strategic areas of turf reduction. This will need to continue.
- **Putting greens.** The putting greens on both golf courses are in the best condition with the best ball roll conditions I have seen in my visits to Westbrook Village. An increase in cultural practices such as routine grooming and light-intensity vertical mowing as well as maintaining sharp reels and bedknives has made a significant positive impact on the greens' performance. We will also discuss whether it is necessary to regrass the Tifgreen 328 greens on the Vistas Course.
- **Fairways.** It was great to see healthy bermudagrass emerging on fairways on both golf courses, especially apparent on the Vistas Course. It was also great to hear that you have already applied one application of Sapphire, with two additional applications planned to expedite the transition process. I am very optimistic about a big improvement in the transition process this year. We also discussed the importance of both shallow and deep aeration.

- **Tees.** The Lakes No. 3 and Vistas No. 4 tee complexes have been expanded, leveled and sodded to TifTuf bermudagrass. These new tee complexes are great examples of how larger tees can help spread out golfer traffic and therefore allow turf to recover. There are plans to expand and level the Lakes driving range, No. 1 Lakes tee complex, and No. 2 Vistas tee complex.
- **Bunkers.** Several poorly placed bunkers were removed as recommended during my last visit, and it was great to see that new sand is continually being added to improve drainage characteristics and bunker playability. The bunkers were neatly trimmed and offering good playability and presentation on the day of the visit. We will discuss modifications to the bunker to the left of Vistas No. 9 green.
- **Trees.** Every golf facility, whether low- or high-budget, needs some form of a tree plan that includes strategic tree removal and strategic tree planting as well as plans for tree care. We will discuss some key components of this master tree plan and will also provide several examples of tree plans developed at other golf courses.

Table of Contents

Turf Reduction	5
Observations	5
Recommendations	6
Putting Greens	6
Observations	6
Recommendations	8
Fairways	9
Observations	9
Recommendations	10
Tees	11
Observations	11
Recommendations	12
Bunkers	12
Observations	12
Recommendations	13
Trees	13
Observations	13
Recommendations	14
Closing Comments	14
Additional Considerations	15

Turf Reduction

Observations

1. Arizona Department of Water Resources Fourth and Fifth Management Plans

The Fourth Management Plan imposed by the Arizona Department of Water Resources will be initiated less than a year from now on January 1, 2023. In this plan, the turf water allotment is reduced from 4.9 to 4.75 acre-feet per acre. The Fifth Management Plan begins January 1, 2025, and only 2.2 acre-feet of water per acre will be allocated for turfgrass that exceeds 90 acres for an 18-hole golf course. The low-water-use landscape allocation also will be significantly reduced to only 0.75 acre-feet per acre and is limited to 1 acre per hole. With these changes looming, it is critical for Westbrook Village to make strategic changes to both golf courses.

2. Vistas Turf Reduction

It was great to see that at the end of 2021, the agronomic team were able to complete turf reduction in areas adjacent to homes on Vistas hole Nos. 6 through 9.

- They were able to remove a total of 4½ acres of irrigated turf, shifted the sprinklers to accommodate the new turf lines, and ended up removing approximately 25 sprinklers.
- The bermudagrass in these areas was sprayed with glyphosate twice, followed by aggressive mower scalping, and then about 1 inch of decomposed granite was applied to the sprayed-out areas.
- As expected, the bermudagrass has already begun to resume growth despite no irrigation; however, it was good to see that the team are actively spraying a combination of glyphosate and Fusilade®. These routine applications will need to continue for the next 18 to 24 months at minimum.
- The good news is this turf reduction was completed at an extremely low cost (estimated at only about \$9,000 to \$10,000 per acre) compared to projects completed at other clubs.
- These areas now offer more definition, and the areas now look maintained and intentional whereas prior turf quality, especially under pine trees, was very poor.



Turf was removed in strategic areas along the perimeter of several holes on the Vistas course and decomposed granite rock was installed.

Recommendations

1. Continued Turf Reduction in Phases

In my experience with other golf courses who have completed turf reduction up to 40 acres, the most successful projects have been phased in over time, and that is the strategy at Westbrook Village. With that in mind, it is recommended to continue with your turf reduction efforts. We discussed focusing the next turf reduction on the right side of hole Nos. 16 and 17 on the Vistas Course.

2. Significant Opportunity for Further Turf Reduction on Vistas Course

There is certainly an opportunity for additional turf reduction areas, and it was good to hear that you have already secured a grant from the Arizona Department of Tourism to offset some of the costs associated with turf reduction.

- For example, we discussed removing turf around tees and between tees and fairways. This is a very frequent area where other golf courses have focused their turf reduction efforts. The additional challenge for removing turf in these areas is that you would need to modify irrigation to water the turf only. As such, it will be more expensive to complete turf reduction in these areas around teeing grounds and between tees and fairways.

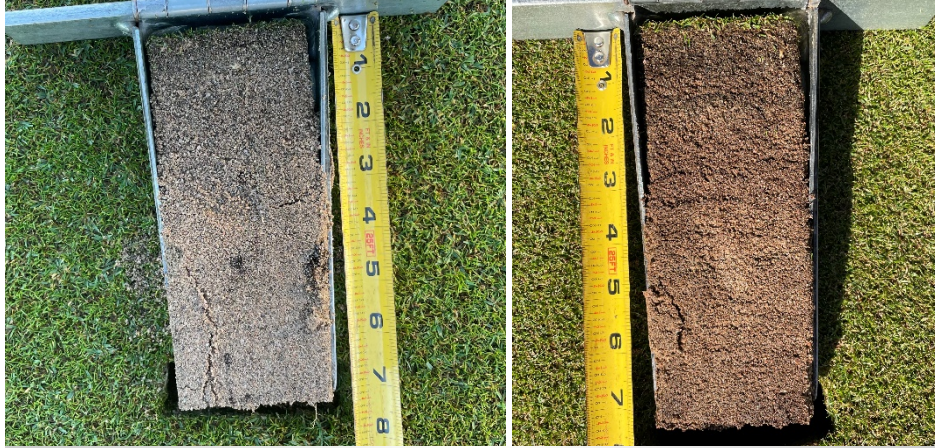
Putting Greens

Observations

1. Lakes Greens

We started the day on the Lakes greens. Other than the practice green, the Lakes greens were in great condition with a very solid overseeding and the bermudagrass is beginning to emerge from overseeding.

- Soil profile samples revealed roots extending to 4 to 5 inches, and no excess thatch or elevated organic matter was found at the surface of the greens. To confirm this, we collected samples for organic matter testing on the practice green and green Nos. 11 and 15 on the Lakes Course. I will follow up with the team once I receive these results.
- The measured speed on the Lakes greens was about 10 feet as measured with the new USGA GS3 smart ball. We also measured firmness, which indicated the greens are in the moderately firm range at 0.401 inches.
- The practice green on the Lakes Course continues to lag behind the greens on the golf course as far as turf density and performance, but it is good to report that upon inspecting soil profile samples, the bermudagrass in this green has matured and has developed a thatch pad of about 5/8 to 3/4 inch. This is a good indication that the turf health is improving. Furthermore, roots were found to extend to 6 to 7 inches in this green. We did observe areas with localized dry areas, and these are the areas where the turf was weakest.



The practice putting green (left) is comprised of sand with little moisture and nutrient holding capacity, while greens on the course (right) are more mature.

2. Vistas Greens

We were able to tour the Vistas greens in the afternoon and we collected samples for organic matter testing on green Nos. 10 and 18.

- We did observe more 328 bermudagrass emerging under the overseed canopy on the Vistas greens compared to the Lakes greens.
- Root growth was deep on the Vistas greens, extending to 6 to 7 inches.
- The Vistas greens were considerably drier than the Lakes greens and, as such, it was not surprising to see the Vistas greens with a reading of 0.330 inches were substantially firmer than the Lakes greens.
- The speed on the Vistas greens was measured at about 9'4", which is very similar to what we found on the Lakes greens in which the measurement was taken about four hours prior. It is important to note that the time difference is very important with speed readings. Greens lose speed throughout the day and, as such, it was not surprising to see the slower speed on the Vistas greens.



Deep roots extending to 6 to 7 inches were found on the Vistas greens.

3. Vertical Mowing

It was great to see routine vertical mowing conducted on greens. It was reported that light-intensity vertical mowing is conducted twice weekly. The lines were apparent on both golf courses, and it was great to see bermudagrass leaves capturing sunlight in these shallow and narrow vertical mowing lines.

4. Improved Smoothness and Speed

It was great to hear from the golfers that joined us on this course tour that the green speed and smoothness have improved significantly over the past couple years, especially this year. The agronomic team indicated that the improvement can be attributed to more routine cultural practices and sharper mowers and bedknives. It is clear the new bedknife and reel grinding equipment has really paid off.

Recommendations

1. Aeration

It is recommended to continue with your plans to vent greens on a routine basis. Conduct the 1/2-inch solid-tine aeration in May and follow with 3/4-inch hollow-tine aeration in July.

- During these larger-diameter aeration events, it is recommended to apply sand several times to completely fill the holes to the surface. This is critical to produce a smooth surface once the bermudagrass fills in.
- It is also important to avoid the urge to apply additional nitrogen in and around these aeration events to expedite healing. The bermudagrass will heal just fine on its own during the summer months. Additional nitrogen only contributes to unnecessary thatch and organic matter production.

2. Sand Topdressing

It is recommended to continue to utilize the West Coast Premium sand for routine sand topdressing. Ideally, you would topdress up to three to four times per month during the bermudagrass growing season, which essentially begins now. The sand is so critical to diluting surface organic matter and to avoid soft and spongy putting surfaces. A good guideline is to set a goal to apply a minimum of 2,500 pounds of sand per 1,000 square feet per year.

3. Vertical Mowing and Grooming

It is recommended to continue vertical mowing and grooming. These practices are so important to encourage upright growth and avoid the puffy conditions that occur in the summer months. These routine practices also go a long way to helping you produce smooth greens and achieve the desired green speeds.

4. Growth Regulation

From June through September, it is recommended to use trinexapac-ethyl on the putting greens three to four times monthly at 2 to 4 ounces per acre to reduce growth, reduce the risk of mower scalping, and improve putting green speeds.

5. Wetting Agent Use

It is recommended to use a wetting agent 12 months out of the year at the label recommended rate.

6. Moisture Meter

It is recommended to purchase at least one moisture meter for each golf course and use routinely on the putting greens.

- During this course visit, we did observe greens on both golf courses with localized dry areas that need supplemental irrigation with a hose, but these areas can be difficult to identify visually before wilt begins.
- The handheld moisture meters have been so critical for golf courses all over the country to improve moisture consistency on putting greens. Most courses have even expanded to other areas of the golf course.

7. Deep Irrigation

I have the unique opportunity to see from 80 to 100 golf courses per year. Without a doubt, the deep irrigation cycle on greens, no matter the turf species, has been shown to be beneficial. It is recommended to experiment with this strategy.

- The goal is to apply about 1 inch of water to greens, which generally will mean about 60 minutes of run time.
- It is likely that on the Lakes greens, the water window will be quite long to achieve this amount of water due to slow infiltration rates. You may need to apply water at only five-minute cycles and let soak for 15 minutes before running another cycle.

8. Regrass the Vistas Greens?

Given the improvement in the quality of the Vistas greens with grooming and improved mower cut quality, the decision was made to delay regrassing. I support this decision and recommend to wait until there is a definite need to upgrade grasses.

Fairways

Observations

1. Good Overseed on Both Golf Courses

It was great to see the overseed quality on both golf courses is good this year, with bermudagrass emerging already by April 1.

2. Slicing

It was great to see slicing conducted on both golf courses. This helps to reduce compaction and improves water infiltration. Further, these slits create openings in the turf canopy for the understory bermudagrass to capture sunlight.

3. Sapphire Application

It was great to hear that one Sapphire application has been made about ten days prior to the visit at 8 ounces per acre. It was also great to hear that no one has recognized this herbicide application has been made, and that is by design. There are plans to apply at least two more applications at about 20-day intervals between applications.

4. Soil Profiles and Compacted Soils

Soil profiles were collected in fairways on both golf courses. In both cases, we have observed medium to heavy soil compaction at a depth of about 3 to 4 inches beneath the surface. It is good to report that the soil profiles also confirmed the bermudagrass rhizomes are healthy on both golf courses and the membership can be more optimistic this year about the bermudagrass recovery from overseeding.



Fairway soils show a compacted layer at about the 3- to 4-inch depth in multiple locations. The soil is hard and dry beneath this layer.

Recommendations

1. Bermudagrass Transition

You have a good transition program in place, and, for this year, it is recommended to continue with your current plan.

- For next year, it is suggested to slightly alter the plan and initiate the Sapphire in late February or the first week of March but at lower rates of 4 to 5 ounces per acre. Courses have found this strategy to work very well. These low rates offer even greater safety. Again, the application window is about three weeks.
- One noteworthy change compared to previous years was the team have been able to lower mowing heights more aggressively. This has a huge impact on sunlight exposure to the understory bermudagrass and is another reason why I am much more optimistic about your bermudagrass transition success this year.
- Finally, it is important for the members to know that the agronomic team will need to begin increasing irrigation over the next six weeks to encourage the bermudagrass to recover and therefore you may find some wet areas in fairways. Unfortunately, this is a necessary practice to expedite the bermudagrass recovery.

2. Fairway Aeration

The soil compaction in fairways limits rooting health and depth and must be managed through a combination of shallow and deep-tine aeration. You have the equipment to conduct shallow aeration with the pull-behind aerator which is very effective and reliable. Many courses in Southern Arizona do not own deep tine aeration equipment due to the damage incurred to these machines with the poor soil quality. **As such, many courses will use an outside contractor who have specialized equipment to conduct deep tine aeration. With this in mind, it is recommended to contract this deep tine aeration service out on both golf courses for several years before potentially making any purchases for this type of specialized equipment.**

3. Cart Restriction

It is recommended to limit golfers to two golf carts per foursome. Allowing golfers to ride alone in their own golf cart increases damage to turf and soil compaction twofold, and most all courses have already returned to two carts per foursome.

Tees

Observations

1. Leveling and Expanding

It was great to see you have been hard at work expanding and leveling teeing grounds. Examples include Lakes No. 3 tees, Vistas No. 4 tees, and the back driving range tee on the Vistas Course. These new tees offer a firm and level surface and much more hitting area, in addition to sodding with an upgraded TifTuf bermudagrass. It was interesting to see the significant improvement in turf quality of the TifTuf immediately adjacent to the common bermudagrass.



This tee complex on the Vistas course was enlarged and leveled. The new TifTuf (right) offers a far superior surface to the common bermudagrass.

Recommendations

1. Continued Expansion and Enlargement

We discussed expanding and leveling the No. 1 Lakes and No. 2 Vistas tee complexes.

- We also discussed expanding and leveling both the black and blue and white and red tees on the Vistas No. 2 tee complex. The current plan is to reroute the cart path to move it closer to the homes and expand the tee to the player's right. This is likely the most economical strategy, but you may also consider expansion using fill left of the teeing grounds.
- The driving range tee on the Lakes Course will also need to be expanded and leveled given that it is only about 28,000 square feet. Generally, the minimum guideline for a practice tee is about 1 acre, which is 43,560 square feet. It was reported that this practice tee and No. 1 Lakes tees will be renovated in 2023.

2. Width Guidelines

A good guideline for the width of tees is about 15 paces for par-4 and par-5 tees, and 20 to 25 paces for par-3 tees given the amount of play volume on both these golf courses.

Bunkers

Observations

1. Sand Addition

It was good to see the maintenance team are routinely adding sand to bunkers to improve drainage characteristics and playability.

2. Presentation

It was great to see the bunkers on both golf courses are very well maintained and were neatly trimmed to provide good appearance on the day of the course tour. Compliments are extended to the agronomic team on both golf courses for their diligent efforts and attention to bunker detail.

3. Bunker Removal

It was good to see several bunkers that only penalize the high-handicap player have been removed. These include the first bunker on the right of Vistas No. 15 and the fairway bunker on the left side of Lakes No. 18. The bunker on No. 13 on the left side of the fairway on the Vistas Course was modified to combine two bunkers into one to improve ease of maintenance.

Recommendations

1. Vistas No. 9

We discussed significant modifications to the bunker left of the green on No. 9 Vistas.

- We discussed sodding the lobe closest to the fairway to allow the higher-handicap player to miss a shot in this area and still have a shot to the green from grass. This will have no impact on the better players.
- We also discussed removing 80% to 90% of the remainder of this bunker and turning it into a decomposed granite area. We did decide to leave about 10% of this bunker behind the green given the visual quality this bunker provides. Furthermore, we decided to insert an additional grass hollow immediately to the left of the green.

2. Continued Sand Addition

Many courses are undergoing bunker renovations, but recent experience has shown that a complete bunker renovation will typically cost \$8 to \$10 per square foot including drainage, installing a liner and adding new sand. At these prices, an 18-hole golf course can expect a complete bunker renovation to cost half \$500,000 to \$1M or more. At least for now, this is an unnecessary cost for the courses at Westbrook Village, and it is recommended to continue to add about 2 inches of sand per year with the goal to maintain 9 and up to 12 inches of sand in the floors of the bunkers (sand on bunker faces should be maintained at 2 to 4 inches depth).

Trees

Observations

1. Declining Trees

It is perfectly natural for golf courses to see trees reaching the end of their useful life and therefore in a state of decline. This is the case at both courses at Westbrook Village. Some of the eucalyptus and ash trees are in poor condition and are not only unsightly, but also a significant source of debris on the golf course

2. Strategic Tree Removal

A few additional trees have been removed since last year's visit, and it was good to hear from all parties attending the course tour that the strategic tree removal has been successful to improve turf health through increased sunlight exposure. On Vistas No. 16 tee, strategic tree removal has opened up views of this golf hole and allowed for full use of the teeing ground.

Recommendations

1. Tree Management Plan

Most golf clubs can benefit from a tree management plan. It is recommended to consider hiring a consulting arborist to help develop a tree management plan that would begin with a comprehensive tree inventory documenting the location and key characteristics, including species, age and impact on the golf course from both a turf health and playability perspective. The inventory will provide more objective information to guide tree removal and tree care decisions. A portion of this plan should also be tree planting. An arborist can help identify key tree species and work toward developing a more consistent theme across the golf course.

Closing Comments

It is always a pleasure to return to the golf courses at Westbrook Village to discuss both short-term agronomic practices and longer-term course improvement projects. I enjoyed being able to spend the day with several interested green committee members and board members and very much appreciate their feedback and questions. Mr. Escobedo and Mr. Murillo have done an excellent job of improving course conditioning, especially on the putting greens and bunkers, at minimal cost. They have also done a fine job of implementing strategic course improvement projects such as expanding and leveling tees and phasing in turf reduction, again at minimal cost. From an outside perspective, it is clear the members at Westbrook Village Golf Club are getting a tremendous value for their dollars spent. Over the next eight to ten weeks, the focus must shift to recuperating bermudagrass from overseeding. The good news is, the team have been proactive and I'm very optimistic the bermudagrass recovery will be better than in previous years. Thank you again for your continued support of the USGA Green Section. As always, please do not hesitate to reach out to me if you have any further questions or concerns.

Respectfully submitted,



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Distribution:

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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.

About the USGA Course Consulting Service

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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.

