

Course Consulting Service  
**ON-SITE VISIT REPORT**



**Westbrook Village Golf Club**

Peoria, Arizona

Visit date: February 21, 2017

Present:

David Escobedo, Golf Course Superintendent  
Jose Murillo, Assistant Golf Course Superintendent  
Mike Cripps, Green Committee Chairman  
Brian Whitlark, USGA

**DRAFT**

The following report will summarize the observations and discussions for the Lakes and Vistas golf courses made during the Course Consulting Service visit on February 21, 2017.

The focus of the visit was to review general course conditions and offer suggestions for short-term and long-range golf course improvement. Specific topics covered in this report include:

- Long-range planning
- Putting greens
- Green surrounds
- Fairways
- Roughs
- Irrigation and lakes
- Tees
- Bunkers
- Trees
- Equipment

Long-range planning - The thought process involved with the development of a long-range plan needs to be comprehensive enough to take into consideration all aspects of the golf course and the eventual cost of implementing each phase of the plan. Assembling a document that clearly defines these goals and objectives is in effect the long-range plan for a golf club.

Most long-range plans can be coordinated to structure a program that can be implemented in a five to ten-year time frame, but some components of the plan may extend to 30 years or more. For example, when coordinating a bunker reconstruction project you may choose to create a plan that could condense the projects and expenditures into a one-season window to minimize interference for the membership. If the long-range plan is in place to outline such a project, the process of planning and prioritizing truly will become an enrichment program for the course. Within the constructs of a long-range plan, you may choose to establish two important areas in which to identify course adjustments:

Non-architectural:

Includes such items as greens regrassing, drainage, cart path repairs or rerouting, tee leveling, landscape changes, bunker refurbishment, turf removal and the installation of low-water input areas.

Architectural:

May include such items as greens modification, additional bunkers and substantial redesign work.

It is important to take into account both architectural and non-architectural items to ensure the long-term success of improvement projects and avoid doing projects over. Once these categories have been developed, it will be possible to establish priorities and focus on the goals and objectives for future projects. Based on our tour of the course, the following items are offered for your consideration for incorporation into a long-range master plan:

- History & Club Overview
- Water source
- Drainage
- Labor Force
- Roughs
- Trees
- Greens
- Cart Paths
- Practice Facility
- Tees
- Irrigation/Pump System
- Bunkers
- Fairways
- Lakes
- Turf removal
- Turf Care Facility
- Equipment



*One item to include in the long-range plan is cart path replacement. Turf wear is common near tees and greens where golfers park with two wheels on the turf. Adding curbs and wider paths in strategic areas will improve this situation.*

## PUTTING GREENS

Lakes greens – This was the first year the putting greens were overseeded since resurfacing to *Tifdwarf* bermudagrass in the summer of 2015. The overseeded surfaces were in excellent condition on the day of the visit, and numerous soil profile samples revealed a healthy and robust bermudagrass stolon and rhizome population. It was good to see that the addition of brushes to the greens mowers has had a positive impact on the surface quality of the putting greens. Given the excellent conditions, there is no need to make any substantial changes to the current greens management program. In the short-term, it is suggested to continue with plans to “vent” the greens using small diameter solid pencil tines, which will make the greens more receptive and easier for golfers to stop their ball on the greens. Furthermore, the holes will improve water infiltration and gas exchange.

Aeration & venting practices – It is suggested to continue with plans to conduct a small diameter (1/4-inch) hollow tine core aeration in late April or early May on both golf courses. With use of the small diameter tines, the holes will heal rapidly and will soften the greens, which will better enable golfers to hold incoming approach shots. Also, this practice is important to improve water penetration and encourage bermudagrass recovery during the early transition phase.

*A soil profile sample collected from a green on the Lakes Course shows no soil layering, which indicates that the current aeration and sand topdressing practices are working well.*



On the Lakes Course, it is suggested to conduct a 5/8-inch outside diameter hollow core following the July 4th holiday in conjunction with a deep tine event from an outside contractor. The deep tine event on the Lake Course will be important to penetrate the soil layer that resides approximately 5 to 6 inches beneath the surface of the greens.

On the Vistas Course, it is suggested to continue with plans to utilize the 5/8-inch hollow tines on a tight 1.5 inch by 2 inch spacing. Based on observations of soil profiles on both golf courses over the past two years, it appears the current aeration and topdressing program is sufficient to keep up with thatch and organic matter management.

Encouraging bermudagrass – Although it is still February, the mild winter did not set the bermudagrass entirely into winter dormancy. As one can see, the nonoverseeded bermudagrass is already greening up and the same is occurring underneath the overseeded grasses. Consequently, it is critical to begin practices to encourage sunlight penetration to the understory bermudagrass. With that in mind, it is suggested to continue with plans to very lightly vertical mow the greens to slowly thin the overseeded grasses without disrupting play.

Fertility – On both the Lakes and Vistas putting greens, it is suggested to target 3 pounds of nitrogen per 1,000 square feet annually, and be sure not to exceed 4 pounds per 1,000 square foot annually. Based on the water sample collected in August 2014, you can expect approximately 3 to 3.5 pounds of nitrogen per 1,000 square feet supplied from the irrigation water. Approximately  $\frac{1}{2}$  the nitrogen should be applied in liquid form following overseeding and through the winter and spring, and switch to granular fertilizer in May during the transition time. Mr. Escobedo noted plans to apply an organic granular fertilizer in the early summer, which will provide a nice baseline for the remainder of the year.

Poa annua on Vistas greens – With the early overseed date on the Vistas greens, it should be expected to have significant bermudagrass competition, which results



*Striping is prominent on greens with use of the brushes mounted on greens mowers. A few lighter patches of Poa annua are visible on the Vistas greens.*

in thinning of the overseeded turf. Consequently, *Poa annua* (annual bluegrass) took advantage of the thin overseed and increased in population. Mr. Escobedo noted that the Vistas Course will be overseeded in late October of this year, and with the late overseeding date, you are encouraged to spray the herbicide Revolver® one week prior to overseeding to kill the early emerging *Poa annua*. This application should be expected to provide 70 to 80% control.

Irrigation on Vistas greens – As discussed in last year's Course Consulting Service visit report, it is suggested to upgrade the irrigation controllers in order to accommodate an additional 4 to 7 sprinklers surrounding putting greens. These sprinklers would be wired individually and would provide significantly improved flexibility with regard to watering the sand-based putting green independently of the heavy clay-textured soil in green surrounds. This modification would improve turf health and density as well as overall cosmetics and playability on greens and green surrounds. It was good to hear that Mr. Escobedo was meeting with Marvin Mills to discuss this topic the day after our course tour.

## GREENS SURROUNDS

Although the majority of the nonoverseeded bermudagrass in the green surround areas is in good condition, there are some areas with low-density turf and, therefore, the playing conditions are not ideal. The following factors contribute to the thin areas:

- Common bermudagrass - Common bermudagrass has a longer dormancy period than hybrid bermudagrass. Furthermore, common bermudagrass does not have the traffic tolerance of the newer hybrid bermudagrasses.
- Shade from trees and north-facing slopes - Although there is not a dense population of trees on the Lakes or Vistas golf courses around green surrounds, there are areas where trees cast shade, and it is nearly impossible to grow healthy bermudagrass where it does not receive adequate sunlight, especially during the dormancy period. Furthermore, the lower sun angle during winter months limits light exposure on north facing slopes – a key factor for bermudagrass growth.
- Traffic - Where golfers and golf course personnel walk to and from the golf cart, there is a negative impact on the bermudagrass density. In general, these areas have been overseeded, and this has improved the playing conditions, but not in all areas.
- On the Vistas Course in areas where the maintenance team is unable to separate greens irrigation from green surrounds due to the limitations of the sprinkler system, the bermudagrass becomes too wet while it is not transpiring during the winter months.

With the limitations listed above, it is suggested to expand the overseeding and green surrounds in the fall of this year. In order to reduce some of the costs associated with the increased seeding acreage, it is suggested to lower the seeding rate to 400 pounds to the acre in the green surround areas.



*Where green surrounds are left dormant, especially in high traffic areas, the bermudagrass becomes thin, weeds promulgate and can have a negative influence on the golfer experience.*

Transition in green surrounds – It was good to hear that plans are in place to lower the height of cut in green surrounds in the near future. It is suggested to continue to lower the height of cut with the goal of 5/8-inch by early to mid-April. Lowering the height of cut will significantly improve bermudagrass recovery from overseeding.

## FAIRWAYS

The playing conditions of the fairways were excellent on both courses on the day of the visit. It was reported that due to intense bermudagrass competition in mid-October on the Vistas Course, the overseeding was not as dense. Mr. Escobedo reported that turf colorant was used to mask some of the thin ryegrass in order to provide good cosmetics. It was good to see that in these areas the bermudagrass has been exposed and is green and will continue to provide good conditions moving forward.

Fairway transition – Although lowering the mowing heights on fairways is not often a popular recommendation at golf courses with maturing golfers, it is essential to encourage the understory bermudagrass. Recent consulting visits to other golf courses

in the Phoenix area revealed some clubs are lowering mowing heights to 0.325 to 0.350-inch. Mr. Escobedo noted the fairway mowing height is currently at 7/16-inch, which, ideally, would be lowered to 0.450 inch by early April. Secondly, with regard to transition, it is suggested to continue with plans to spray Sapphire® at 1.5 pints per acre. Given the milder winter this year and the early-emerging bermudagrass, it is suggested to apply in late April rather than early May. A third note on fairway transition is to avoid dry areas that will inhibit bermudagrass recovery. It is extremely important beginning in early May through mid-June to closely monitor soil moisture in all overseeded areas in order to avoid dry conditions.

It was good to hear from Mr. Escobedo that sprinkler nozzles were upgraded on several holes on the Vistas Course including adjustments to the pressure at the head to improve water distribution (e.g., hole Nos. 1 and 5), which have endured poor bermudagrass recovery from overseeding in the past. Furthermore, Mr. Escobedo noted that hand watering (using wetting agent tablets) was increased substantially during the transition time to promote adequate soil moisture. As a last word on transition, it is suggested to employ a practice similar to last year to increase nitrogen fertility one to two weeks following the Sapphire® application. We discussed applying 3/4 to 1 pound of nitrogen from ammonium sulfate followed by 3/4 pound of nitrogen from an organic source.

Fairway overseeding – There is a definite trend in southern Arizona to lower seed rates during overseeding. Many courses are now using 450 to 550 pounds of seed per acre in fairways, and it is suggested to lower the rate at Westbrook Village from 600 to 500 pounds to the acre. Experience over the past few years has shown that there will not be a decrease in turfgrass density with this small change in seeding rate.

Overseeding dates - Should the membership decide they would like to significantly improve the overseed quality on the golf course overseeded earliest, they should strongly consider moving the overseed date back to mid-October on the first course and to the last week of October or early November on the second course. An early overseeding date such as late September or early October can significantly decrease the potential for success.

Fairway aeration – Fairway aeration is an important part of the overall agronomic plan. A fairway aeration tool that is becoming increasingly popular is the RotoKnife™ machine, which creates a continuous slit in the fairway. This tool accomplishes the same tasks as the deep tine aeration tool, but does not create the additional work of bringing cores to the surface. It is suggested to obtain more information about this tool and to request a demonstration this summer.

Poa annua in fairways on the Vistas Course – On the Vistas Course, which reportedly will be overseeded in late October this year, it is suggested to apply Revolver® herbicide one week prior to overseeding to kill any early emerging *Poa annua*. This application should be expected to provide 70 to 80% control of the annual bluegrass. Use of a preemergence herbicide is not suggested prior to overseeding.

## **ROUGHS**

Weed control – The use of Specticle® herbicide in the fall of last year in the nonoverseeded roughs has proven to be extremely successful. In addition, a small band immediately adjacent to the overseeded areas was treated with prodiameine in late September. It is suggested to continue with plans to utilize Specticle again this fall; however, it is recommended to apply the prodiameine during the last week of August or the first week of September to ensure application is made prior to the annual bluegrass germination. Furthermore, it is suggested to apply a second application of prodiameine in mid-to-late November.

## **IRRIGATION AND LAKES**

It was good to see that the scars have healed after the Lakes Course irrigation project; however, a few low trenches were observed in the fairways. It is suggested to utilize a sandy loam soil to raise these low areas to provide a firm, level surface this summer.

Wells – Mr. Escobedo noted there is only one well per course and water from one course cannot be transferred to the other with the current system. If one well goes down, obtaining city water at a considerable expense would be required until the well is back online. With that in mind, it would behoove the club to investigate the idea of drilling a new well on either golf course for use as a backup. Ideally, a system would be in place to transfer water from course to course in the event of a well failing or being closed for repair.

Lakes on the Lakes Course – There are four lakes on the Lakes Course, two of which are filled manually by the mainline. Hole No. 9 is filled by the well and is ultimately gravity fed to the irrigation lake on No. 18. It is clear from discussing the issue with Mr. Escobedo and Mr. Murillo that the lake on No. 18 is not deep enough to provide sufficient water storage throughout the year. As a remedy, it is suggested to dredge the lake on No. 18 and apply a liquid liner seal on the bottom of the lake. The liner will secure the entire edge of the lake with gunite (shotcrete) and prevent erosion while providing a safety shelf if a golfer should accidentally fall into the lake. For more information on this topic, please click on the links below:

[Dredging up a new idea](#)

[Sedimental Journey](#)

[Bathymetry and its Importance to Turf Managers](#)

## **TEES**

It is suggested to expand and level the tee complex on No. 3 (Lakes) and No. 2 tee complex (Vistas). As a guideline, these tees should be enlarged to provide a minimum of 100 square feet of tee space per 1,000 rounds of golf, which translates to approximately 5,000 square feet of tee space for the highly used White tees.

In addition, Mr. Escobedo noted that plans are in place to expand and level the North driving range tee (Vistas), which will significantly improve the hitting area.



*The tees on No. 2 (Vistas) are too small and cannot adequately accommodate the volume of play.*



*The tee on the north end of the practice facility is severely crowned and the hitting area is too small. It is good to hear that plans are in place for leveling and expansion.*

**Establishing forward tees** – As part of your strategic plan, it is suggested to work with your golf course architect on the establishment of additional forward tees. Throughout the region, this popular project has improved pace of play and increased the enjoyment of the game for women and senior players. The article [Move Forward, Not Back!](#) provides further details on how to successfully implement this program.

## BUNKERS

It was good to see the bunkers on both golf courses were in good playing condition on the day of the visit. Although a more permanent strategy has not yet been employed on the Vistas Course, 3 to 4 inches of sand has been applied to the greenside bunkers in order to improve playing conditions for the next few years.

## TREES

The trees are a significant asset and a tree care plan will be important to properly care for strategic trees, tree removal where necessary and planting of new species where appropriate. Unfortunately, the Aleppo pine trees in the region have experienced decline recently and Mr. Escobedo pointed out that some of the pine trees at Westbrook Village are showing signs of damage. Mr. Kai Umeda at the University of Arizona Cooperative Extension indicates that the decline is not biotic related (disease or insect), but rather an abiotic stress (most likely due to a lack of water). With that in mind, you may wish to consider installing additional drip or bubbler irrigation at the base of trees and/or build a tree well large enough to encompass the entire dripline of the tree and flood with water on a monthly basis.

Tree plan – Many golf courses across the country recognize the benefit of a tree inventory and tree management plan. Addressing tree issues will be a critical part of improving the course. It was suggested to develop a comprehensive tree program to address the following areas:

- Selectively remove trees near greens to improve sunlight exposure and air movement.
- Root prune along the edges of greens where trees are planted in close proximity.
- Selectively remove trees along fairways where excessive shade causes problems with turf growth.
- Perform a tree inventory with emphasis on identifying key specimens that are critical to the architecture and playing quality of the course.
- Develop a routine pruning program with priority given to the key tree specimens identified in the tree inventory.

One of the most controversial aspects of the program will be removing trees. Several prominent clubs throughout the country have initiated tree removal programs including Winged Foot, Oakmont and The Olympic Club. All of these clubs have reported better turf quality while still preserving the aesthetics, challenge and playing quality of the course.



*An area where two or three pine trees should be removed is behind No. 3 green (Vistas) to help improve turf health and playability.*

## EQUIPMENT

It was good to hear that six new pieces of equipment were purchased in 2016 that included one fairway mower for each golf course, one large rough mower for each golf course as well as one small rough mower (trim mower) for each golf course. Mr. Escobedo noted that he and the former green committee chairman developed a long-range equipment purchase plan. It was good to see the commitment made by the club leadership in 2016 to upgrade equipment, which is vitally important in order to maintain quality playing conditions.

## CONCLUSION

Thank you for the opportunity to visit and offer assistance with your turf maintenance programs. Best wishes for continued progress, and I look forward to being of further assistance on behalf of the USGA Green Section.

Respectfully submitted,

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USGA Green Section

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Distribution:

David Escobedo, Golf Course Superintendent

Attachments:

Samples of long-range plans

Samples of tree programs