USGA COURSE CONSULTING SERVICE

Site Visit Report

Recreation Centers at Sun City West

Sun City West, Arizona

Visit Date: August 7, 2023

Present:

Todd Patty, Environmental Services Manager
Dan Maurer, Project Manager
Brian Whitlark, USGA Green Section

Brian Whitlark | Regional Director, West Region | (480) 215-1958 | bwhitlark@usga.org

USGA GreenSection

Executive Summary

Thank you for the invitation to return to the Recreation Centers of Sun City West to conduct a Course Consulting Service visit on behalf of the USGA Green Section. It has been four years since my last visit to see these golf courses, and it was great to see that you continue to undergo course improvement projects. Golf courses are busier than ever, even busier than in 2000 when Tiger Woods had such a big influence on golf, and many courses are taking advantage of that revenue by making course improvements. It was also good to see that despite a milder-temperature year and dry summer, the bermudagrass has recovered quite well from overseeding. During this visit, the course improvement projects garnered much of the attention, but we were also able to discuss transition programs and the challenges in attracting and retaining labor. A brief summary of the topics discussed in this report is included below:

- **Course improvement projects.** It was great to see Grandview under renovation with new irrigation and 45 acres of turf reduction. These projects are being done to upgrade the infrastructure and to demonstrate quantifiable water savings. It was also good to hear that the community has embraced the idea of water conservation and is supporting course improvement projects that yield quantifiable water savings. It was reported that the next golf course for renovation will be Echo Mesa in 2025. To build on the water conservation topic, it is strongly recommended to consider turf conversion on Echo Mesa, with the goal to ultimately eliminate overseeding. This not only will provide water savings, but also will provide a golf course with better playing conditions for more days out of the year.
- **Bermudagrass transition.** Despite a cool June and a very dry and hot July with no real measurable rain, the bermudagrass recovered quite well from overseeding on the three golf courses we were able to visit. In the four years since my last visit, many courses have adjusted their transition programs and have made significant improvements. I will discuss some slight modifications to the program in this report.
- **Challenging labor market.** Many courses are struggling to find labor. With only about 11 total employees per golf course under the Sun City West umbrella, there simply is not enough labor to maintain the turf at a higher level in combination with maintaining the landscape areas. I will discuss several recommendations to reduce maintenance frequencies in the summer months and to outsource the desert landscaping.
- **Miscellaneous topics.** Finally, we will touch on equipment replacement and the importance of enforcing two golf carts per group.

Table of Contents

Course Improvement Projects

Grandview – Observations

1. **Grandview Improvement Project**

   It was great to see the infrastructure upgrades on Grandview including wholesale irrigation system replacement as well as turf reduction. It was reported there will be 45 acres of irrigated turf removed and replaced with desert landscaping. I noted several observations during the tour of Grandview.

   - Landscapes Unlimited has done a fine job of installing the HDPE pipe irrigation system with limited damage to the golf course. I was impressed with the speedy recovery of the trenches for the mainline and the slits created by pulling the wire and lateral pipe.
   - It was great to see you have upgraded to the HDPE pipe. I have heard from industry experts that this pipe is expected to last 80 to 100 years. Of course, sprinklers and lateral and mainline valves will certainly not last that long. Typically, the life expectancy for these irrigation components is 20 to 25 years.
   - It was great to see the new irrigation design accommodates the new turf lines where irrigated turf was removed and replaced with desert landscaping. In my opinion, the planting plan is aggressive, and the high plant volume will require a significant amount of maintenance.
   - It was good to see larger, 3/4-inch rock used in strategic areas. The smaller, 1/4-inch or 1/8-inch-minus rock is used where golfers are more likely to hit errant shots. Unfortunately, the small rock is quite susceptible to erosion and tends to disappear over time.
   - With the very dry monsoon season and record heat in July and now in August, it was not surprising to see some of the trees in decline. It was good to see supplemental irrigation being applied to try and preserve the health of trees. In my experience working with other golf courses that have undergone turf removal, oftentimes regardless of adding supplemental irrigation, the trees undergo decline when turf is removed and replaced with rock. It should be expected that there will be some tree loss despite the use of additional irrigation.

Pulling wire around a green on Grandview leaves little disruption and the recovery time is minimal.

Grandview – Recommendations

1. **Expectations Surrounding a New Irrigation System**

   I have worked with probably 40 to 50 golf courses in the past 15 years that have replaced their irrigation systems. In almost all cases, golfers assume that with a new irrigation system, there should be no need for hand watering or supplemental watering and there will be very few, if any, wet or dry areas on the golf course. Unfortunately, that is simply not the case, regardless of the budget.

   - With a new system, the team can shift their time from repairing the irrigation system to managing the system, which is crucial. This means the team can now make daily adjustments to sprinkler run times to try and optimize soil moisture consistency. This needs to happen every day and becomes more critical as seasons change. A new system also means that there is far more flexibility in managing the system. The team will now be able to adjust individual sprinklers and make these adjustments at the central computer and while in the field.
   - There is no doubt that the new system will offer benefits over the older system. However, a new system does not change the fact that sprinklers are still spaced 60 feet apart and water is still being thrown 30 to 40 feet in the air, exposed to sunlight and wind. There is no change to the soil texture or compaction relief. As such, there are still plenty of reasons why there will continue to be localized wet and dry areas, especially within the first two years of installing a new system.
   - The team will be learning the new system and learning that the new system will result in areas that are wet or dry that were not previously wet or dry. It will take a few years to make these adjustments.
   - The membership and homeowners should have every expectation that hand watering will and must continue. I strongly encourage the use of small portable sprinklers to attend to localized dry areas on all golf courses, and this will be necessary on Grandview with the new system.

2. **Desert Landscaping**

   There is ample data now in the Desert Southwest to show that turf reduction helps save water. With 45 acres of turf removed at Grandview, there should be the expectation that this will save over 150 acre-feet of water per year.

   - This is a great story for Sun City West, and this message should be shared among all the community. **However, the new desert landscape areas do not reduce labor**. In fact, the **first few years, these areas may require more labor** than managing the turf. Some homeowners may wonder how that could be, but I have seen time and time again with turf removal projects that the new desert landscaping areas require just as much or more labor spent on weed control, pruning and trimming the new vegetation, replacing plants that die, and attending to the rock such as raking, smoothing, and adding rock when it erodes during rainfall events.
   - **With only about 11 or 12 employees per golf course, there is simply not enough labor to attend to these desert landscape areas and be able to produce the level of conditioning expected by golfers and homeowners**. As such, it is strongly recommended to outsource the desert landscaping maintenance to a qualified landscape contractor. This is quite common in the golf industry and would allow this small crew to focus on turf areas down the middle of the golf course where the focus should be.

3. **Supplemental Irrigation**

   It is recommended to continue with your program to add supplemental irrigation to specific trees in the roughs and in the turf removal areas. There were numerous ash trees identified that were already in poor health, and the incredibly hot July and early August resulted in further damage. It is not recommended to replace these trees. The trees require more water than the turf on a per-area basis and their roots extend well beyond the drip lines and therefore the golf course will benefit from losing a few trees.

Echo Mesa – Observations

1. **Renovation Plans**

   Echo Mesa is the next golf course to be renovated. It was reported that this golf course will receive new irrigation and turf reduction totaling 10 to 12 acres. I applaud you for continuing to spend the necessary capital funds to upgrade these golf courses. I also applaud the leadership for focusing improvement projects on water conservation. To build on the water conservation topic, I will include in the recommendations section below the idea of turf conversion.

Echo Mesa – Recommendations

1. **Turf Conversion**

   It is recommended to consider converting the closely mown turf such as tees, fairways and closely mown turf around greens to hybrid bermudagrass and convert greens to an ultradwarf bermudagrass.

   - Turfgrass research shows that an overseeded golf course in the Phoenix area requires about 6.1 to 6.2 acre-feet of water per year. Eliminating overseeding has been shown to save 1½ to 2 acre-feet of water per year.
   - Research indicates that converting to one of the new hybrid bermudagrasses will add an additional 10% to 15%, and perhaps even as much as 20% water savings. As such, at Echo Mesa where perhaps you overseed 45 acres of turf other than the greens, this may require as much as 275 acre-feet of water per year. If converted to a new hybrid bermudagrass without overseeding, the same area may require only 160 to 170 acre-feet of water per year. That is a potential savings of over 100 acre-feet per year which is, in fact, more water savings than will be achieved from turf reduction.
   - I can say with confidence that converting to a new hybrid bermudagrass will provide better playing conditions for more days out of the year when compared to your overseeded common bermudagrass.

   From my perspective, the turf conversion is a no-brainer for Echo Mesa for water conservation and for improving the playing experience for many years to come.

2. **Lighter Plant Volume in Turf Reduction Areas**

   I would recommend a lighter plant volume in turf reduction areas. I would also recommend using the larger 3/4-inch or even 1-inch rock in as much area as possible. I think you will find that the larger rock is longer lasting and, some would argue, more attractive. The club could implement a local rule that players receive a free lateral drop from the larger rock areas.

3. **Remove/Reduce Mounds**

   It is recommended to remove and/or reduce the mounds on the Echo Mesa golf course. These mounds were a popular trend in the early 1980s, but they are no longer in vogue and look unnatural. Furthermore, it is impossible to maintain consistent soil moisture on the mounds and adjacent low-lying areas. The mounds are also difficult to mow (the turf is often scalped by mowers).

These mounds on Echo Mesa are difficult to evenly mow, difficult to maintain adequate soil moisture, and look unnatural.

Stardust and Pebblebrook – Observations and Recommendations

1. **Course Improvement Plans**

   It was great to hear that similar course improvement projects will be undertaken on Stardust in 2027 and then two years later on Pebblebrook in 2029. Many courses in Southern Arizona are undergoing similar projects and are taking the opportunity to convert their common bermudagrass or even their 419 bermudagrass to a new hybrid bermudagrass that offers the ability to eliminate overseeding and put the golf course in a far more sustainable position for the next 50+ years. I would encourage the club leadership to consider this option for these course improvement projects, and I'll be more than happy to discuss this topic with you further.

Lakes – Observations

1. **Continued Lake Improvements**

   It was great to see that you continue to renovate the golf course lakes by improving the shorelines through adding split-face block wall or large and “riprap” rock. We were able to see the riprap added to the lake on No. 8 Grandview during our course tour.

The large rock “riprap” has been installed to reduce lake bank erosion and to provide a cleaner, more attractive appearance on lake edges.

Bermudagrass Transition

Observations

1. **Good Transition Despite Unfavorable Weather**

   We were able to briefly tour Echo Mesa, Deer Valley and Grandview. It is good to report that bermudagrass recovery on all three golf courses is good despite unfavorable weather conditions for bermudagrass in June and again in July. The agronomy team employed a combination of chemical and mechanical strategies to proactively and strategically remove the overseeded ryegrass to encourage the understory bermudagrass. For the most part, the strategies worked well. There are, of course, a few localized thin areas on all three golf courses, especially Echo Mesa with common bermudagrass, mounding and an older irrigation system.

Recommendations

1. **Proactive Transition Program**

   I cannot overstate the importance of a proactive transition program. Growing ryegrass on top of bermudagrass is extremely damaging to the understory bermudagrass. It is therefore essential to proactively slow the growth of the ryegrass early in the year in order to encourage the understory bermudagrass. The good news is, this can all be done while still producing an attractive golf course. Please consider the following suggestions:

   - **Chemical transition.** Use either Sapphire® or Manuscript® beginning the last week of February at low rates to slow the growth of the ryegrass. With Sapphire, spray at 4 ounces per acre every three weeks for three or four applications and then consider increasing the rate to 6 ounces per acre for one or two additional applications. If using Manuscript, start at 0.75 ounces per acre for three applications and then increase to 1 or 1¼ ounces per acre for several additional applications. In both cases, it is often necessary to make a “cleanup” application to remove the lingering ryegrass and any *Poa annua*. You may consider applying Kerb® at 35 ounces per acre in late May or early June.

- **Fertility.** Increase fertility the second or third week of April and plan to apply 2 to 3 pounds of nitrogen per 1,000 square feet by mid-June. You can use a combination of slow and readily soluble nitrogen sources.
- **Mowing heights.** Reducing mowing heights is critical. It is recommended to begin reducing heights in late January or early February with the goal of maintaining the ryegrass fairways at less than 1/2 inch.
- **Irrigation.** In April and May especially, it is necessary to increase irrigation. Courses often will increase irrigation to 110% of ET during this transition time. Allowing the bermudagrass to dry out will delay recovery.

Labor Challenges

Observations

1. **Labor Shortage**

   Most all golf courses I visit in the Western U.S. have noted problems attracting and retaining qualified labor. Even many high-end golf courses with large budgets have less labor now than they did before the COVID pandemic. For public golf courses and lower-end private golf courses, a typical labor force for an 18-hole golf course is 13 to 18 total golf course maintenance staff. There are a few municipal golf courses I visit that only operate with 8 to 11 total staff. As you might imagine, these courses are generally in poor condition and there is no labor available to work on small projects, complete detail work on the golf course, and no labor to properly manage the irrigation system. With an average of only 11 to 12 total golf course maintenance staff at the seven golf courses at Sun City West, the labor force is on the lower end of the golf courses that I visit.

Recommendations

1. **Practices to Consider with Minimal Labor Force**

   I've included below several ideas we discussed to elevate the course conditioning and overall golf experience, taking into account the limited labor force at each of the golf courses at Sun City West:

   - **Reduced maintenance frequency.** During the summer months, the bermudagrass is growing more aggressively and it is often difficult to reduce mowing frequency because of this accelerated growth. We discussed using growth regulators and a product called Plateau® (impazapic). This chemical is very inexpensive and can be used to slow the growth of the bermudagrass, especially in roughs. An informational sheet on this chemical has been included with this report for your reference.
   - **Reduced hole changing frequency.** One area that can be cut back is the frequency of hole changing (cup cutting). Many courses will cut back to changing holes five to six days per week.
   - **Reduced bunker raking frequency.** It is also recommended to cut back on bunker raking frequency. Some courses will only fully rake bunkers once or twice per week and touch up the floors of the bunkers daily.

- **Two course closures.** Two courses are closed and receive minimal maintenance in the summer. It is important to continue this practice into the future. These golf courses are essentially given a rest for the summer and minimal labor is deployed while shifting labor resources to the golf courses that are in play. Small projects can be completed on the closed golf courses, taking advantage of no play; however, with such minimal labor at the facilities and at a time when there is so much to do on the golf courses that are open for play, it just makes sense to shift labor resources to other golf courses. It is recommended to continue with this practice.
- **Desert landscape maintenance.** If the expectation of the homeowners and golfers is that the desert landscaping on the golf courses will be maintained at a high level, it is recommended for the leadership to solicit bids from landscape companies to maintain these areas and allow golf course maintenance staff to focus on the golf course proper. This is quite common in the golf industry, especially here in Southern Arizona. Even many of the high-budget golf courses in North Scottsdale have run low on labor and are using contract labor to maintain areas outside of play. I believe this will be a big help for the golf courses at Sun City West.
- Here is a good article on ideas golf courses have used to save maintenance dollars: Dollars and Sense: Making It in a Tough Economy.

Miscellaneous Topics

Observations

1. **Routine Equipment Replacement**

   During my last visit in 2019, it was reported that the facility has done well to keep up with routine equipment replacement. This year, despite many golf courses having serious problems acquiring new equipment, it was good to hear you have kept up with routine equipment replacement. Given your proactive measures, you have actually been able to receive equipment in a more timely manner compared to other golf courses. It was reported that about $1.5 million is allocated this year to capital equipment replacement. It is essential to keep up with this equipment replacement program. Many courses that hold onto aging equipment spend countless time on repairs and this means lost time on the job.

2. **Two Carts per Group**

   During the COVID pandemic, many golf courses changed policy to allow four golf carts per foursome to allow for social distancing. Unfortunately, some of these golf courses have retained this practice which significantly increases soil compaction and turf damage. Many courses, however, have returned to allowing only two carts per group. In fact, there are more and more golf courses that I visit where the trend is shifting to a greater percentage of golfers that walk than utilize golf carts. I realize this is not the case for Sun City West; however, it is good to see you have returned to two carts per group. I fully support this and urge the club leadership to continue to enforce this policy. The damage golf carts impart on golf course turf is well known. This article from the USGA explains in more detail: Letting the Numbers Tell the Story on Cart Damage.

Closing Comments

Thank you for the opportunity to spend the morning with Mr. Patty and Mr. Maurer and visit with a few of your golf course superintendents. It was rewarding to see the Grandview upgrades. I am hopeful that you will read this report and recognize the benefits of doing a similar project on the Echo Mesa and adding turf conversion to that project to accelerate your water conservation goals and deliver better playing conditions for golfers for more days out of the year. Best wishes over the coming months prior to overseeding. Please don't hesitate to contact my office should you have any further questions or concerns. Thank you for your continued support of the USGA Green Section.

Respectfully submitted,

Brian Whitlark, Regional Director
USGA Green Section, West Region

Distribution:

Todd Patty, Environmental Services Manager
Dan Maurer, Project Manager

USGA Green Section

Turfgrass and Environmental Research

The USGA Green Section appreciates your support of the Course Consulting Service. First started in 1953, the Course Consulting Service provides unbiased assessments of golf facilities to optimize resources and reduce consumption of critical resources. The proceeds from the Course Consulting Service directly support the USGA's annual $2 million investment in turfgrass and environmental research, which provides an estimated $2 billion annual benefit to the U.S. golf industry. Follow the QR Code for more information.

Tools and Solutions

The USGA Green Section is proud to offer tools and solutions for golf courses. Innovative products including Deacon, GS3, and GPS Services provide solutions to optimize the golf experience through data-driven communication and resource management.

Green Section Record

The USGA Green Section Record, is a free digital magazine offering the latest information on turfgrass management, environmental sustainability, innovation in golf course maintenance, and turfgrass research. If you would like to stay updated on regional topics, best management practices, and industry trends, please subscribe for free to The Record.