USGA® COURSE CONSULTING SERVICE

Site Visit Report

Sun City, Legacy Hills Golf Course

Georgetown, Texas

Visit Date: September 6, 2023

Present:

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USGA GreenSection

Executive Summary

It was great to visit Legacy Hills Golf Course for a half-day Course Consulting Service visit on September 6, 2023. The purpose of this visit was to assess conditions and discuss best management practices for daily and long-term maintenance.

This summer has been exceptionally challenging for golf courses throughout the state and region due to record-setting heat and drought. Challenges with effluent water supply from the city have led to deficit irrigation being implemented on several areas of the golf course. The greens and tees were being irrigated to meet plant requirements, but other areas such as the fairways, rough, and driving range floor were under various degrees of drought stress the day of the visit.

Sun City has a large golfing population and three golf courses. Similar to the other two courses visited in the past couple of years, the strong demand for tee times, and particularly morning tee times makes it challenging to perform some critical maintenance practices.

- Legacy Hills is the oldest golf course of the three and was originally opened for play in the mid-1990s. As such, some key infrastructure items such as the irrigation system are nearing the end of their useful life and complete replacement should be planned for in the near future.
- All of the putting greens examined were healthy and dense but similar to the other courses, organic matter content in the upper portion of the profile is excessive. This creates soft conditions, shallow rooting, and several other secondary issues.
    - Sand topdressing the putting greens on a weekly basis during the summer months is undoubtedly the best option for improving putting green performance.
- Most, if not all of the rounds played are cart rounds. As such, turf has degraded, and soil is eroding in many of the high-traffic entry/exit points to and from cart paths.
- It is worth noting that many other courses in the area suffered from winterkill on putting greens. This is not the case at Sun City because the putting greens were covered prior to cold temperatures arriving. This is a great example of the benefits that covering greens provides. A few days of course closure during the winter months is a far better option than several months of poor conditioning and recovery during the summer season.

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Putting Greens

Observations

1. **The putting greens were originally constructed in the mid-1990s and while it was not confirmed during the visit, it appears as though the greens were resurfaced approximately 15 years ago.**
2. **The putting greens examined were healthy and dense the day of the visit.**
3. **Similar to the other two courses, organic matter content in the upper portion of the profile is excessive. This dense thatch layer acts like a sponge near the surface and predisposes the turf to soft and wet conditions, shallow rooting, mechanical injury (scalping), footprinting, bumpy conditions and a host of other agronomic concerns.**

    - Aside from exceptionally soft conditions, the elevated organic matter content was not creating any other significant concerns the day of the visit. Minor scalping in some of the perimeter areas of the putting greens was the only other issue observed. However, it is worth mentioning that elevated organic matter content in putting greens is undesirable for the reasons listed above and the best option for improving turf health and playability is to reduce organic matter content in the upper portion of the profile.

    - Morning tee times are highly sought after within the community which makes it challenging to commit to a weekly topdressing program on the putting greens.

4. **The putting greens were covered prior to lethal temperatures this winter. Covering greens means closing the greens for play for several days, but this year is a great example of how a few days of inconvenience during the winter months can avoid several months of otherwise necessary recovery plans. Many courses in your region suffered from various degrees of winterkill and are still working through the recovery process. I encourage you to continue covering the putting greens preventatively anytime the temperatures are forecast to fall below 25°F.**

Recommendations

1. **The greens were in relatively good condition the day of the visit but are exceptionally soft and had a shallow root system due to excessive organic matter content near the surface. The best option for improving conditions on the putting greens is to implement a weekly topdressing program.**

    - Some of the best ultradwarf greens are backtrack verticut and topdressed every week during the summer months. Realizing this may not be practical with the busy golf schedule, topdressing alone is better than nothing and will improve conditions at Legacy Hills.

    - Using a topdressing sand with very few, if any coarse and very coarse particles will improve sand incorporation into the dense turf canopy. This will reduce the impact to ball roll and mower damage following weekly topdressing applications.

    - Each of the courses is closed once every three weeks. Backtrack verticutting should continue to be performed once every three weeks at a bare minimum.

2. **One of the only areas examined on the greens with poor turf health was the back portion of No. 17 green. The large live oak overhanging the back part of the green is**

outcompeting the turf for moisture and nutrients. Root prune between the green and this tree to improve turf health and density.

Fairways

Observations

1. **The fairways are grown on a finely textured, heavy clay soil. These soils are severely compacted and have poor infiltration and drainage characteristics.**

   - The fairways are currently core aerated once per year at the end of June.

The greens were in great condition, but the fairways showed signs of drought stress. The finely textured and compacted native soils in the fairways make it challenging to provide uniform moisture content.

2. **Control options for goosegrass were discussed during the visit.**

   - Goosegrass is a summer annual grassy weed that is found most common in severely compacted soils where other desirable grasses are unable to thrive. In many instances, the presence of goosegrass is a good indicator that the existing soils are compacted.

Recommendations

1. **The best option for addressing the poor performance characteristics in the fairways is to implement a sand topdressing program, but it sounded as though this option would be**

cost prohibitive. The next best option is to continue aerating the fairways at least once per year and in addition, use a linear decompactor such as the Verti-Quake® implement.

- Linear decompaction is minimally invasive to the playing surface and could be completed every one – two months throughout the summer to alleviate compaction and improve root development and internal drainage.
- Several gypsum applications have been approved for purchase next year. Gypsum can help improve soil structure and help leach some sodium through the profile.

2. **The following tank mix has shown great results for postemergent control of goosegrass in bermudagrass fairways or rough.**
   - Tank mix Pylex® at 0.25 ounces per acre + Sencor® at 4 ounces per acre plus methylated seed oil at 0.5%v/v. Add Tribute Total® at 3.2 ounces per acre or Celsius® at 3.6 ounces per acre to significantly reduce injury to bermudagrass. Tribute Total also provides control of several other weeds listed on that label.
   - Recent research has shown that post-emergent herbicides targeting goosegrass are less effective under droughty conditions. Make sure the soils are adequately hydrated prior to applying herbicides for selective postemergence control.

Rough

Observations

1. **The rough was the most severely affected area impacted by the drought. The fairways were a close second.**
   - Water has been intentionally withheld from rough and fairway areas so that adequate irrigation can be applied to the highest priority areas – putting greens, green surrounds, and tee boxes.
   - Reportedly, the City has been unable to supply an appropriate amount of water to meet current turf requirements. As such, the maintenance team has done a great job of prioritizing where water is applied so that the most important areas remain unaffected by a lack of water.
2. **There are several entry/exit points to and from cart paths where soil has eroded due to turf decline.**
   - Many of these areas are also located adjacent to trees, which negatively impact turf health by creating dense shade and outcompeting the turf for moisture and nutrients.

Several high-traffic areas had declined due to a combination of traffic, shade, and drought. These areas need to be properly graded with a suitable topsoil and sodded.

Recommendations

1. **In high-traffic areas that need to be repaired, a sandy loam topsoil should be used to grade the areas and then zoysiagrass sod should be planted. Zoysiagrass has better shade tolerance and winter traffic tolerance. It also has faster spring green-up which should provide better recovery in the late winter and early spring months.**
2. **We discussed the option of installing plastic matting in high-traffic areas but in my experience, I have not seen these mats improve traffic tolerance. These mats are hard plastic with holes dispersed throughout that allow turfgrass leaves to grow through, while reportedly, improving traffic tolerance by decreasing soil compaction. However, I have yet to see positive results from their use under heavy cart traffic. The leaf tissue ends up declining due to abrasion from cart traffic and thin turf is the end result if traffic is not properly managed.**
    - Plastic mats can also present a playability and rules concern. If you are going to use these mats to evaluate their effectiveness, I would isolate their use to areas that are definitely out of play.

Summary

The golf course was in good condition considering the resources available for daily maintenance, the undersized maintenance staff, and the exceptional heat and drought experienced for the past few months. The maintenance teams at the Sun City courses are faced with the challenge of preparing golf courses early ahead of play but with minimalistic staffing levels. There are only a handful of employees for each course, and this makes it challenging to perform the most basic maintenance tasks ahead of play on a daily basis.

If there is a desire to improve playability or conditioning on the putting greens, implementing a weekly topdressing program is definitely the best option. I also encourage you to acquire a linear decompactor such as the Verti-Quake to alleviate compaction in the finely-textured native soils found throughout the fairways.

I truly enjoyed touring the golf course and look forward to working with you all in the future. If you have any questions on anything in this report or if I can be of further assistance at any time, please do not hesitate to contact me.

Respectfully submitted,

Paul M. Jacobs, Agronomist
USGA Green Section, Central Region

Distribution:

Zac Seith, Director of Agronomy

USGA Green Section

Turfgrass and Environmental Research

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