JAMES RIVER COUNTRY CLUB
Newport News, Virginia

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Darin S. Bevard, Director, Mid-Atlantic Region
The condition of the greens remained the biggest topic of conversation during our visit at James River Country Club. As we have discussed in the past, there is no single factor to pinpoint as the cause of the decline on the outside edges of the greens. This problem started back when the collars were sodded with zoysia and the outside edges of the greens deteriorated as the zoysia was grown-in. The grass around the edges of the greens lacks maturity because it is essentially being re-established in late summer and early fall each year.

More importantly, the weakness in your clean-up passes is dictating maintenance practices for the greens as a whole which is leading to poor playability. Maintenance practices used to promote Putting green speeds such as brushing, grooming and sand-topdressing must be curtailed because of concerns about decline getting worse on the outside edges of the greens.

Part of the problem in your clean-up passes is related to poor surface drainage at the edges of the greens. This topic has been discussed in the past and is part of what needs to be addressed to improve the greens. Additionally, the age of your mowers is not helping.

There are short term and long term issues that need to be looked at with respect to your greens. The condition of the greens on the day of our visit was certainly better than it was at this time last year. However, playing conditions were not at the level that is expected and it has not been an extremely difficult growing season by any stretch. As your Agronomist, I try to offer suggestions for improvement based on past experiences. The expectations of the membership are reasonable and this problem needs to be fixed. With these thoughts in mind, I offer the following suggestions and recommendations for your consideration.

GREENS

1. Current Observations. On the day of our visit, the clean-up passes of several greens remain a significant problem. The most affected greens are subjected to more shade over the course of the growing season while the greens that perform well are those in open growing environments. However, these weak greens also have fans to benefit air movement which is clearly a big help. The grass in the centers of the greens is healthy and performing very well which to me indicates that the overall infrastructure of the greens is solid, but I will have more on this topic later in the report.

The worst damage is in areas where surface water cannot exit the green. In some, but not all cases, the worst problems are in high traffic areas. In my opinion, this damage is mechanical in nature which means that it is caused by golfer foot traffic and maintenance traffic from mowers. Mechanical damage also includes abrasion from topdressing and scalping of the turfgrass. When the greens or areas of greens are soft, they are more susceptible to mechanical damage and scalping.
One question raised during our meeting was whether operator error with your mowers could be part of the problem, and the answer is yes. However, as I said during our meeting, Mr. Long has called me on multiple occasions to discuss the challenges that he feels he is having because of the mowing equipment. During these conversations, he indicated that precautions were being taken to do the best that they could to prevent scalping and problems in the clean-up pass due to maintenance operations. While operator error can certainly be a problem, it seems that this aspect of your maintenance on the greens was being monitored closely.

The bottom line is that you are having problems maintaining the clean-up passes on the greens and these clean-up passes are dictating the care of the rest of the greens.

2. Collar Dams. While Mr. Long and his staff have tried to address some of the collar dams that are present, these are difficult projects to complete properly in-house. As I mentioned in the spring, an outside contractor should be used to strip the sod and re-grade these areas to allow positive surface drainage. The goal should be to have enough slope that water easily runs-off from the surface drainage channels. When Putting greens are designed, they are designed to have good internal and surface drainage to get rid of water as quickly as possible. In areas where water routinely accumulates during heavy rain events, the turfgrass will be more difficult to manage.

If possible, this work should be completed during the fall if possible. My reasoning for this is that any creeping bentgrass that is affected will have a chance to grow-in this fall and over the winter. Areas of the surrounds that need to be sodded to bermudagrass are a concern, but if bermudagrass sod fails to survive the winter in areas, it can be addressed in the spring.

If a contractor performs this work, it should not take them long to complete depending upon the scope of work. If larger areas of some greens and surrounds must be affected, it may take a bit longer, but still be accomplished fairly quickly. While this is a sizeable project for your maintenance crew which must also prepare the golf course for daily play, for a construction contractor, this is a small job. Providing positive surface drainage off of your greens will only help with the problems in your clean-up passes.

3. Greens Mowers. Regardless of whether you were having problems on your greens or not, it is time to upgrade your fleet of Putting green mowers. Mind you, I am not suggesting that your mowers are the sole reason why you are having problems. However, the mower demonstration on the First green on the morning of our visit was very telling. The existing mowers were the first generation of modern floating head units. However, these mowers be it from Toro, John Deere or Jacobsen, have been completely re-engineered for better balance and improved cutting quality. I do not believe that there are many things that have not been improved dramatically in the last eleven years. Putting green mowers are no different, and the Putting greens are the most important part of your golf course. Regardless of what decisions you make regarding Putting green improvements, your putting green mowers should be updated.
For the record, I do not have a preference for mowing manufacturers. By demonstrating different mowers on the greens, an educated decision can be made. Mr. Long is the best person to decide what mowers will fit best within your existing maintenance practices. For every different mower, I can direct you to superintendents who love that mower and an equal number of superintendents who hate the same type of mower.

Severe scalping occurred on the First green where your existing mowers were used, but not where the different “demo” mowers were used. When the greens get wet and humidity is high, the grass gets puffy for lack of a better term and is more susceptible to scalping, but the quality of cut has a significant impact. If nothing else changed with your greens, it is time to upgrade your greens mowers.

4. Recovery. While there are some longer term issues that need to be addressed such as collar dams and potential equipment upgrades, short term recovery is also an important part of the equation. There is the goal of getting thin and bare areas to fill back in to their proper density. Additionally, the playability of the greens as a whole also is important. Providing a balance between the recovery of your weak areas and the playability of the greens as a whole is difficult, but necessary.

A. Playability. As long as the weather continues to cooperate as a whole, height of cut can be slowly reduced on the Putting greens to provide better playability. While there may be some initial scalping, slightly more aggressive maintenance
that includes lower height of cut, potential double-cutting and even grooming or verticuting will lead to better playability. While you do not want to overdo maintenance practices to the detriment of the overall health of the greens, you must provide better playing conditions.

One observation that was made during the visit and confirmed by Mr. Long is that the greens mowers only seem to scalp severely when cutting the affected greens from 6 to 12 or 3 to 9. To that end, in the short term, consider only mowing the greens from 2 to 8 or 4 to 10 on the mowing clock to limit the potential for scalping until you get new mowers. As height of cut is reduced, you will likely be able to return to mowing from 6 to 12 as normal, but in the short term, avoid the stress on the grass as scalping can be prevented by mowing in a different direction.

B. Repairs. As for fixing the damage that has occurred in the short term, a combination of programs will likely be needed. Where large areas of damage have occurred, the combination of sodding and plugging should be used to provide immediate recovery. As long as weather patterns remain mild, these repairs can be performed. The sod and plugs will need to be managed carefully.

In addition to sodding and plugging, the thin areas should be overseeded. Seedbed can be prepared by hand spiking, power spiking or even small core aeration. The combination of seeding, plugging and even sodding will improve the appearance of these areas quickly. One caveat to the repair of the greens will depend on when/if the re-grading of the surrounds will be performed. It does not make sense to commit a lot of resources to recovery of these areas if they will ultimately be disrupted when the collar dams are addressed.

Improving the playability and appearance of the greens is the priority at the current time. With shorter days and cooler weather, more aggressive maintenance practices can be implemented to improve ball roll. This still has to be balanced with the recovery of your clean-up passes. However, these weak areas cannot continue to completely dictate your Putting green maintenance programs. Repair procedures will be needed to address damaged areas. Fortunately, the extent of damaged areas is far less than what it was in 2013 which means recovery should occur more quickly.

5. Long Term Considerations. In addition to the potential re-grading of some of the surface drainage areas in your collars, there are other long term considerations that were discussed during our visit. These included life expectancy of Putting greens, potential reconstruction or even re-grassing.

A. Life Expectancy. There is no reason a properly maintained USGA green cannot perform very well for many, many years. While greens may need to be re-grassed, the structural integrity of the greens is not a problem. The exception to this rule can be when water quality is poor which leads to problems between the
interface between the Putting green mix and the gravel blanket which can hinder drainage. However, problems such as these are rare in the Mid-Atlantic region.

This is not the first time a soil profile from James River has been included in a report, but the question of whether the greens need to be “replaced” because of their age keeps coming up. While it is not possible to completely answer this question by visual observation, everything that I see in this picture indicates the greens are performing well. More aggressive core aeration may be needed in the short term to dilute organic matter, but I do not feel reconstruction is needed.

B. Soil Physical Testing. In conjunction with the life expectancy question, the need for reconstruction is a big part of the conversation. As I mentioned during the visit, I did not see any indication in the soil profiles that there is a problem with your greens that would necessitate reconstruction. There was no black layer; the mix was not overly wet indicating that drainage had backed-up; in short, the soils in your greens look pretty normal for their age. With that being said, the easiest way to evaluate the current physical conditions of your greens is through intact core samples. Basically, a two inch PVC pipe is hammered into the green all the way through the mix and into the gravel blanket. The samples are mailed to a testing lab where they will evaluate the physical properties of the sample. Important properties such as infiltration rate, organic matter content and soil particle size are evaluated at different depths of the soil profile to determine if
there are limiting layers or other issues affecting the performance of the greens. In this way, you can better target the specific area of the soil profile that needs to be addressed through your aeration programs.

C. **Regrassing.** The regrassing of your greens is a legitimate discussion. With the continued expansion of the use of ultradwarf bermudagrasses in Virginia, they become a viable option for James River Country Club and frankly, any golf course in your area. The benefit of ultradwarf bermudagrasses is they require far less fungicide and insecticide inputs compared to creeping bentgrass. Additionally, they will tolerate your typical summer weather conditions much better than creeping bentgrass. This means that instead of just trying to keep the greens alive during July and August as you do with creeping bentgrass, you will actually have your best playability with bermudagrass. Ultradwarf bermudagrass does require far more grooming and light topdressing to maintain green speed. This is one trade-off that often is not mentioned in regrassing discussions.

Ultradwarf bermudagrass is not bullet proof. The biggest concern is probably winterkill although winterkill has not been a major problem when proper covering techniques are utilized during the winter months. They cannot be left under cover when milder weather occurs because of the risk of premature green-up. Thus, covers have to be taken on and off of the greens when necessary during the winter months. Basically, any time nighttime temperatures are forecast to be below 25° Fahrenheit, the greens will need to be covered. Additionally, if you were to consider regrassing the greens at James River to ultradwarf bermudagrass, significant additional tree work would need to be performed to address shade. All grasses perform poorly under shaded conditions. Ultradwarf bermudagrasses perform especially poorly when sunlight penetration is limited. For that matter, your creeping bentgrass greens would perform better with some of the shade problems eliminated. This is another factor to keep in mind.

I am not suggesting that you need to regrass your greens. Rather, this was a point of discussion during our visit and has been for the past two growing seasons. What I am telling you is that ultradwarf bermudagrass is a viable option for your Putting greens as is creeping bentgrass. Both creeping bentgrass and ultradwarf have weaknesses. The biggest difference is that the weakness of creeping bentgrass occurs during the heart of the golfing season in the tidewater of Virginia. If you look at potential renovation/regrassing in the future, ultradwarf bermudagrass needs to be part of the conversation.

With all that was said above, there are major things that could be done to improve your greens. However, with the exception of addressing your surface drainage issues, I do not believe that there are inherent physical problems in your Putting greens that necessitate their rebuilding or even prevent you from successfully maintaining creeping bentgrass. More aggressive aeration programs may be needed in the short term to address organic accumulations in the upper portion of the soil profile. A drill and fill program whereby ¾ inch drill bits are used to drill into the soil profile to create deep
channels that are then backfilled with sand, may be beneficial in your clean-up passes if not for the greens as a whole. Your soil test will provide some of these answers. When they come back, please forward a copy to me. At that point, we can have a discussion about short term and long term considerations for the greens.

6. Aeration Programs. Speaking of aeration programs, it may be necessary to be more aggressive with your standard core aeration programs. While there is no distinct layering in the upper portion of the soil profile, introducing new sand into the top two to three inches of the soil profile is important to maintain drainage and aeration. If the upper portion of the soil profile holds water, this is bad for the turfgrass and bad for playability. It also makes the greens more susceptible to mechanical stress as we discussed above. Keeping organic matter in the upper portion of the soil profile well diluted is key to ongoing maintenance of any Putting green. Nobody, including golf course superintendents, likes aeration. It is labor intensive and provides inconvenience to the golfers. It also allows better conditions to be performed on a season long basis.

For the record, one topic that was discussed was in-season aeration, specifically during the summer months. In my travels, we routinely see and routinely recommend supplemental aeration during June, July and August. Small solid tines and small coring tines are commonly used. The goal of these programs is to help with water infiltration and water management in between your primary spring and fall aeration programs. Supplemental aeration also promotes better gas exchange which helps rooting during the summer months. The frequency of these practices varies based on weather and other circumstances. The bottom line is that summer aeration is far more common than most people realize.

7. What If James River Was Holding a Championship? One of the participants in our visit asked what our recommendations would be if James River Country Club was hosting a Championship and we wanted to address the concerns on the greens to have a better chance of having good conditions for our championship.

My first recommendation would be to address the surface drainage issues that are present, if resources allow. From a maintenance and playability perspective, the presence of collar dams that prevent surface drainage are a big problem during our championships. In the event that resources were not available to perform re-grading, I would suggest drill and fill to potentially improve drainage in the cleanup passes. This would at least help the water to move through the soil profile more rapidly in areas where it accumulates.

The damaged areas would be sodded and plugged to provide recovery as quickly as possible this late summer and early fall so that they can be grown-in and have a chance to mature. Smaller areas would be overseeded as well. Unfortunately, there really is no perfect rapid cure when thin and bare areas exist. Plugging, sodding and overseeding provide the best opportunity to gain recovery.
Finally, when the weather breaks and the greens have essentially recovered, we would recommend more frequent core aeration programs with larger tines. 1/2 inch or 5/8 inch coring tines would be recommended. The cores would be removed and the holes backfilled with new sand-topdressing. This type of aeration would be performed in mid to late September and again in late October or early November this year. An additional aeration would be recommended next spring.

The other potential program is DryJect aeration which must be performed by an outside contractor. DryJect allows large amounts of sand to be incorporated in the upper portion of the soil profile to dilute organic matter and improve aeration porosity without the disruption of core aeration. Finally, approximately 14 to 21 days prior to the Championship, we would recommend small tine aeration be performed using either small coring tines or small solid tines to prepare the greens for more intense maintenance that would be required during the championship.

Will this combination of programs guarantee success? No. However, they would likely provide the best opportunity to get the greens back in condition. Also, these recommendations assume that the time, money and resources needed to complete them effectively will be available. Additionally, the golfers would be inconvenienced with the more aggressive aeration programs. These are all factors that need to be considered whether you are preparing for a Championship or just preparing your golf course for member play. The goal is to have reliable Putting greens throughout the growing season and the short term inconveniences of aeration programs are part of insuring season-long success.

**CONCLUSION**

This concludes our summary of the major points of discussion during our visit and tour of your golf course. If any questions arise concerning this visit, my report or any other area, please feel free to call our office. We are here to help.

Sincerely,

Darin S. Bevard  
Director, Mid-Atlantic Region

DSB:mf

cc:  Mo Bsat, General Manager/Chief Operating Officer  
     Jay Long, Golf Course Superintendent  
     Bob Lanier, Green Committee Chairman