# **USGA** CASE STUDY

## Best Management Practices Resource Management

### **Tree Management To Protect Renovated Cart Paths**

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#### Issue

The cart paths at Pine Lake Country Club were in a state of disrepair due to age and tree root disruption. The situation had reached a point where the club felt that their ability to recruit and retain members was being compromised by the condition of the cart paths. The membership wanted to renovate the paths but there was concern that tree roots would quickly begin to damage the new paths. For a cart path renovation to be successful, tree management would have to be part of the project.



Damage from tree roots had compromised the old cart paths. To avoid this problem in the future, over 500 trees were removed from alongside the new cart paths.

#### Action

A plan was developed to install new asphalt cart paths and address tree issues alongside the new paths. Any tree within 12 to 15 feet of the paths, around 500 in total, was slated for removal. The roots from these trees had caused the most damage to the cart paths in the past. A USGA agronomist assisted in identifying the trees that were most likely to cause problems for the new cart paths. Trees that did not cause cart path or turf issues would be preserved. The Board of Directors approved a bond for \$400,000 that included both the new asphalt paths and the complementary tree work.

The majority of the tree work was performed by an outside contractor, while smaller trees were removed by the maintenance staff. A small logging company hauled away the lumber free of charge. The asphalt from the old cart paths was hauled to an on-site dump area by the maintenance staff. There it was smoothed out to provide a new base for the dump area.

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#### Results

The cart path renovation and accompanying tree removal at Pine Lake Country Club were very successful. Selective tree removal protected the new cart paths from root damage and also improved turf health. Bermudagrass conditions have improved in many areas due to additional sunlight and reduced root competition. The golf course actually plays a bit tougher after the tree removals because turf density in the rough has improved. This came as a surprise to most golfers, who thought the course would play easier after the project.

Using a larger contractor that had proper equipment allowed the tree removals to occur over approximately four weeks. Total cost for the tree and stump removal was approximately \$86,000. Disposing of the old asphalt in an on-site dump instead of hauling it to a landfill proved to be a significant cost savings, though it was also a lot of work. Removing nine miles of old paths generated a substantial quantity of spoils and it was a major project for the maintenance staff to load and haul all this material away.

Filling in stump holes and re-establishing bermudagrass alongside the cart paths proved to be a significant challenge. The absence of cart paths for a period of time required temporary traffic control and regular communication with the members to limit damage from golf carts. Another issue was working with the contractor to balance the cart path project with their other steady contracts.

While the project did have its challenges, the results have been worthwhile. The tree removals protected the new cart paths and improved overall turf conditions. The presentation of the course has improved considerably and most golfers would have difficulty identifying where trees had been removed.



Renovating nine miles of cart paths created a large amount of spoils. It was a big project for the maintenance staff to haul away the debris and establish turf alongside the new cart paths.

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