SAVANNAH
Park & Tree Department
Urban Forestry Division

Daffin Park live oak preservation plan

Overview

The live oaks within Daffin Park are as iconic as any trees with the City of Savannah and contribute greatly to the overall experience of citizens and visitors to the park. Several of these trees sit in an unofficial parking area, mostly used by visitors to historic Grayson Stadium, and this has been the case for many years. This long-term use as a parking lot has resulted in very poor growing conditions, including soil compaction, low soil fertility, and physical damage from vehicles and equipment. The fact that these trees continue to survive are a testament to the strength and resiliency of the live oak as a species. Recently there has been substantial grading activity very close to some of these trees. This activity has resulted in root damage and root loss that, over time, could directly lead to the death of the trees. Specifically, there are 9 trees along the west of the stadium that have been affected. The recommendations below include steps to attempt to preserve these 9 trees, with the goal being to improve overall health by reducing compaction and creating an environment to promote new root growth, which is vital for tree survival. All recommendations are consistent with both industry standards as well as the City's Landscape and Tree Ordinance Compliance Manual.

<u>Separate parking area from tree preservation area</u>

Action: Installation of bollards around damaged trees

Reason: Soil compaction across a tree's root zone severely limits its ability to absorb water and nutrients essential for survival. The recent construction activity has further harmed the trees by physically removing many of the feeder roots that are responsible for this absorption. The most basic idea in tree preservation is to keep damaging activity away, in this case parking and vehicle or equipment activity. For Daffin Park, this should include adding bollards to eliminate the activity in the areas essential for tree survival. There should be a clear delineation of areas that are used for parking or traffic and areas that are essential for tree health. Bollards should be a minimum of 20' from each tree unless there is a permanent road present. This would result in an area of approximately 25,000 square feet being set aside for tree protection.

Note: There is an open area within the proposed preservation area that was previously a drive entrance. This has now been changed, and Urban Forestry would like to plant a new tree here for continuity and to protect the space for future trees.

Removal of gravel within the preservation area

Action: Remove recently added gravel that will be within the tree preservation areas.

Reason: Gravel has been recently put down well with the critical root zone of most of these trees. This gravel will need to be removed prior to any other soil remediation. This will need to be completed somewhat carefully to avoid digging down any further than has already been done. Done properly, there should be very little additional negative impact.

Soil decompaction

Action: Use an air powered tool to break up the upper 6”-8” of soil within the preservation area

Reason: Compacted soil has very limited pore space to hold the necessary gas, water, and nutrients that trees require. Reducing this compaction helps ensure all of these are available in adequate amounts. Traditional mechanical cultivation tears up all of the small roots that are responsible for water and nutrient uptake, called feeder roots. Using an air tool such as an Air Spade cultivates the soil without damaging these feeder roots. Ideally, the entire area within the newly established tree preservation area will be decompacted.

Addition of organic material

Action: Add compost or other natural material during the decompaction process.

Reason: As noted earlier, the soil underneath these trees is very low in fertility. There is no organic matter present to help provide the nutrients that trees need to survive. Benefical organisms or fungi are likely very low, if present at all. The pH and soil structure are both negatively affected by the presence of rocks and gravel. Adding compost is the first step in trying to re-establish the natural cycle of organic material breaking down to feed the trees. This should be done at the same time as the decompaction so that the material can be incorporated into the upper soil profile.

Addition of mulch

Action: Add mulch to the entire preservation area.

Reason: The most effective way to improve or maintain tree health is to add mulch within the rooting area. Mulch helps to regulate soil temperature and moisture and helps continue to provide natural organic material as it breaks down. This is all in an attempt to help mimic a natural wooded environment as much as possible. In this case, it would be fine to use mulch generated from our tree pruning crews, a good natural source. Mulch should be applied to a depth of around 4” to the entire area.

Providing supplemental water

Action: Watering the trees throughout the first year

Reason: Other than mulch, water availability is the next most important factor in tree survival. Once the decompaction process has been completed, this becomes even more important. Until the soil settles into its final state, the soil and roots are prone to drying out more quickly. For the first year after decompaction, additional water should be applied to avoid drying out of the roots. For the first few weeks, the trees should be getting 2”-3” of water per week. Beyond that, they should be getting at least 1” of water per week. With no irrigation in this area of Daffin, water trucks will need to be used to provide the water. Obviously, rainfall counts towards the overall watering needs.

Summary

A large part of the responsibility of the Urban Forestry Division is to help balance the natural world and the built environment. We all benefit from the trees that are part of the urban forest as much as we benefit from the infrastructure and buildings that are part of being urban. In most cases, conflicts between trees and development can be managed by proper planning, coordination, and preservation. In this case the proper planning and coordination did not occur, so it is time to make an attempt at preservation.