

First Hill Yellowwood Inspections

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I have finished my inspections at First Hill Park with the use of our Air Spade tool. My goal was to remove the first few inches of soil and see the amount of decayed roots, girdled roots and presence of decay organisms in the root system and lower trunk. In doing this I wanted to have more info so I could better come up recommendations for the trees in relation to an upcoming CIP. The following are pictures, explanations and recommendations for the trees.

First Hill Park with trees in question indicated by red letters



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TREE A:



Tree has extensive girdling roots. Roots girdle almost all of the trees stem. The tree appears to be in very good health but so did the tree immediately to its south which failed on September 17th. It is my determination that the tree that failed on the 17th failed as a result of a root system comprised almost entirely of girdling roots. I think this tree could be pruned and remain after construction but the pruning would be extensive. I believe at least 1/3 of the crown would have to be removed and chances of surviving the pruning and root loss due to construction impact would not be great.

Tree B:



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Extensive amount of girdled roots and presence of decay indicated with red circle. This tree is the smallest and presumably the youngest of the group. This tree does not have a large crown and wind throw forces are probably not excessive but it does already lean opposite of the prevailing wind. It is my determination that with some reduction pruning this tree could be left to stay but I cannot guarantee that it will not fail in a large wind storm.

TREE C:



Tree C has the best root system and looks to be in the worst condition. This Tree has many areas on the root system where decay can be seen. Some of these pockets of decay are most likely due to the interactions of mowers or string trimmers and some are probably due to old construction wounds. This tree had a large dead limb removed from it a few weeks back and has a large co-dominate stem that is in decline and will probably die soon. That being said this tree could be cabled and left in place though I am not sure how long it will live as it is in some stage of decline and root loss due to construction could dramatically advance this decline.

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Figure 1 Tree C root decay



Figure 2 Tree C trunk decay

Tree D:



Figure 3 Tree D fungal conk

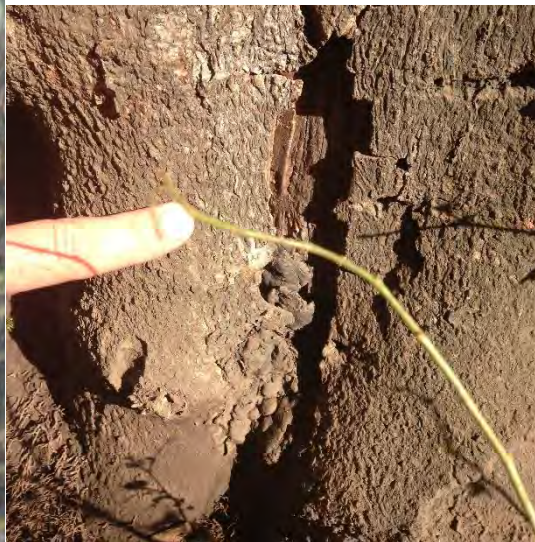


Figure 4 Tree D with possible Kretzschmaria deusta

Tree D has a full canopy and looks very healthy but has an extensive decay issue and the appearance of two different fungal conks. One of the fungal conks is possibly *Kretzschmaria deusta* which indicates extensive root decay. This tree has several small root decay areas and one massive decayed and hollow root area. This tree is going to have to be removed as its failure is likely.



Figure 5: Tree D hollow root

Tree E:

Tree E has the largest and most extensively girdled root system. This root system is as bad if not worse than the girdled root system on the tree that failed on the 17th. It is my determination that in order to allow this tree to remain standing it would have to be reduce significantly to give it less of a sail in wind storms which would most likely be the cause of its eventual failure. I do not think this tree would survive the necessary pruning with the expected root lose due to construction and stress related to construction so I am recommending its removal.

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Girdled root on Tree E.

Conclusion:

There is evidence of many previous failures of Yellowwood trees at First Hill Park. I have found evidence of 5 other failed or dead trees at this site. Two were root failure with one being from the tree having an extensively girdled root system similar to most the existing trees on site. The three other old yellowwood stumps all had fungal conks on them which indicates an extensive amount of decay was present when the trees either failed or died. All the trees I inspected had some amount of decay in their root system so it is not beyond the realm of possibilities that these live trees will eventually die or fail from decay like their former stand mates. That said a case for removing all the yellowwoods and replacing with a different species can be validly made. A case can also be made to perform the work I suggest; remove some of the trees and prune then keep the others. Consideration should be made to the issue of decay organisms in the soil at this site and how prone the yellowwoods are to decay. Some of this will be mitigated when the new site is developed and over watering becomes less of an issue. I

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hope we can all come to an decision on what to do with the information I am providing and I look forward to being a part of that discussion.



Failed or dead stumps with fungal conks indicated with red circle



Figure 6 Ganoderma applanatum (very aggressive decay organism) on old Yellowwood stump.

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Figure 7 evidence of old root failure



This is a classic example of a failure caused by a girdled root system. This was the Yellowwood tree that failed from storm forces being applied to a girdled root system on September 17th 2016.

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