

Client: Dan and Kathleen Hilken

Arborist: Zach Vought

Project Address: 126 Barber Avenue, San Anselmo

Inspection Date: April 26, 2021



ASSIGNMENT/ BACKGROUND

I was hired to evaluate the condition of a Heritage-size Coast redwood tree growing near the home at 126 Barber Avenue in San Anselmo. The inspection was prompted by concerns related to the proximity of the tree to the foundation and the risk of damage to the structure. I am informed limb failures have occurred frequently during the Hilkens tenure as owners which has resulted in damage to the home and renter's vehicles. The Hilkens have enjoyed the tree and its benefits for many years but now feel that the risk outweighs the benefit and would like to remove the tree. The purpose of this report is to provide an objective evaluation of these issues and to satisfy the requirements outlined in the Town's Municipal Code regarding Heritage tree removal permit applications.

OBSERVATIONS

Tree-1

Species Coast Redwood (*Sequoia sempervirens*)

Size The tree is composed of two stems. The larger stem measured 60 inches dbh¹. The smaller stem measured 44 inches dbh.

Condition

The tree is growing in a raised wooden retaining wall planter near the entryway to the home. The trunk is five feet from the brick siding on the north face of the home. There is a crack in the brick siding. See Figure 3. The trunk is 7 feet from the siding on the east face of the home. Growth from the tree has enveloped part of the walkway. See Figure 4.

A site plan is provided on Page 3, indicating approximate parcel lines and tree location.

The tree stands approximately 120 feet high, and the canopy extends over the roof of the home. See Figure 1. The tree also targets the parking area near the garage. I am informed a limb from the tree fell and caused significant damage to a renter's vehicle in the past.

The canopy of the tree appeared normal in terms of color and growth. It is apparent the Hilkens have invested in pruning over the years to manage risk. Both trunks appeared normal, and I observed no indications of pest or disease activity.

DISCUSSION

The growth potential of Coast Redwood is well-documented. The species includes the largest trees on earth. On urban sites it regularly eclipses 100 feet in height, and with minimal competition for sunlight, specimens often develop a markedly stout and tapered trunk. The species has a propensity to grow rapidly and to a large size relatively quickly in part due to its vigorous root system which is composed of large supportive roots and dense fibrous roots. In my experience, the root system of coast redwood is extensive and aggressive and is a common source of concern for property owners.

¹ Trunk diameter measured (in inches) at four- and one-half feet above grade, from the upslope side of the tree.

Root Issues

The supportive, or structural roots of the tree are most likely to cause damage to surrounding infrastructure. The distance from the trunk at which these roots can be expected to be found is variable but for the subject tree the structural root zone is a minimum of 15 feet from the trunk. The Hilken home is well within this zone. Growth from the roots and trunk has overflowed onto the walkway, limiting access, and there is a crack in the walkway and brick siding across from the tree. Cracks in home foundations or siding can develop for many reasons, including substandard construction practices. However, given the proximity of this massive tree to the risk of root damage is real, so the Hilken's concerns are warranted.

Root barriers are often utilized to mitigate root intrusion issues. Installation involves trenching through the root system of the tree and often requires root pruning. The feasibility of installing a root barrier is determined in part by determining the minimum distance from the trunk at which trenching/root pruning can occur without compromising the health and/or stability of the tree. Site constraints is another factor to consider. In this situation there is insufficient space to even come close to considering a root barrier as all the concrete walkways would have to be demolished and the trench would occur much too close to the trunk of the tree and home foundation.

Branch failure potential

In my experience branch failure is the most common mode of failure for the species. In forest settings the species is naturally deciduous of its lower limbs and the wood of the species is relatively brittle. Limb failure is not necessarily an indication a tree is unhealthy, rather it is a common occurrence that can be expected for the species. Tall trees, such as the subject tree, that are exposed to higher wind loads may have an elevated incidence of branch failures. The Hilken home and renter's vehicles have been damaged in the past so they are acutely aware of the risk. They have invested in pruning over the years to manage risk, but when a large redwood hangs over a home, there is only so much pruning you can do while preserving tree health and aesthetics.

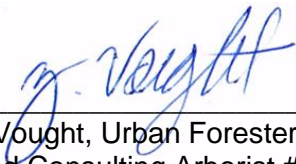
CONCLUSIONS

The subject tree has outgrown the site and threatens the reasonable use of the property and integrity of the home. Roots are causing property damage and there are no realistic options for mitigating future root growth (and associated damage) short of whole tree removal. The severity of damage will only increase as the tree continues to grow.

Over a timeframe of five years the likelihood of branch failure and impact to the home resulting in minor to significant damage results is likely, resulting in an overall risk rating of "Moderate".

RECOMMENDATION

I recommend the tree be removed to abate the issues discussed above.



Zachary Vought, Urban Forester
Registered Consulting Arborist #691
ISA Board Certified Master Arborist WE-9995B
ISA Qualified Tree Risk Assessor

GLOSSARY

Health – overall health or ability of the plant to deal with stress (vitality). Health assessment is based on the appearance of foliage, incremental growth, and the amount of living vascular tissue.

Form – The plant's overall appearance as it relates to its shape or silhouette. Can be negatively affected by crown asymmetries.

Structure – Overall stability of the tree or its branches. This can be negatively affected by things such as acute angle crotches, decay cavities, strong leans, stem girdling roots, ambrosia beetles, history of failures, etc.

SCOPE OF WORK AND LIMITATIONS

Urban Forestry Associates has no personal or monetary interest in the outcome of this investigation. All observations regarding trees in this report were made by UFA, independently, based on our education and experience. All determinations of health condition, structural condition, or hazard potential of a tree or trees at issue are based on our best professional judgment. The health and hazard assessments in this report are limited by the visual nature of the assessment. Defects may be obscured by soil, brush, vines, aerial foliage, branches, multiple trunks, or other trees. Even structurally sound, healthy trees are wind thrown during severe storms or other weather events. Consequently, a conclusion that a tree does not require corrective surgery or removal is not a guarantee of no risk, hazard, or sound health.



Site Plan indicating the approximate trunk locations and canopy dripline. *Not drawn to scale.



Figure 1. The tree as viewed from the backyard



Figure 2. Proximity of the tree to the home and entryway



Figure 3. Crack in brick siding



Figure 4. The shot is out of focus; however, the red arrows indicate root growth within three feet of the home.