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TREE DECISIONS

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# EVALUATION OF THREE SWEETGUM TREES *(LIQUIDAMBAR STYRACIFLUA)* IN THE 1700 BLOCK OF CHAPIN STREET IN ALAMEDA, CALIFORNIA

FOR

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# SUMMARY

Records and reports indicate that three sweetgum trees *(Liquidambar styraciflua)* at 1710, 1720, and 1728 Chapin Street in Alameda are at significant risk of major branch failure, and that they will continue to damage surrounding hardscape.

My recommendation is that the three trees be removed.

# INTRODUCTION

Urban trees are essential to life. Their benefits include oxygen production, erosion control, storm water diversion, carbon sequestration, wildlife habitat, beauty, shade, privacy, proportion, increased property value, seasonal transition, and historical continuity. We must coexist with trees.

Yet not all trees remain appropriate for their location. Because trees constantly change and eventually decline, they may become a source of annoyance, nuisance, danger, and destruction. Those who manage our urban forests must strive to balance the need to reduce unreasonable danger while enhancing the benefits that individuals and communities derive from trees.

This is an extraordinarily difficult undertaking. Tree managers have dual and often conflicting expectations that they will extend the useful lives of trees to maximize community benefits while systematically reducing unacceptable risk to defensible levels.

Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. The internal condition of trees can often be ascertained only by trained and experienced tree specialists, using specialized tools, at considerable expense.

Even when quantifiable measurements of wood soundness and decay are obtained, the assessor must interpret the findings based on limited data and "educated guesses" about the combined effects of unusual weather events and declining tree strength. Any tree, whether it has visible weaknesses or not, will fail if forces applied exceed the strength of the tree or its parts.

# ASSIGNMENT

I was asked to:

examine City of Alameda records of three mature sweetgum trees at 1710, 1720, and 1728 Chapin Street, including reports prepared by other arborists;

visually assess the condition of the three trees;

render a brief and informed opinion about which, if any, of the three trees should be removed or retained; and

deliver a public audiovisual presentation to City of Alameda residents in November, 2014, about tree risk assessment and the roles of tree risk assessors and tree risk managers in the evaluation and management of public trees.

## BACKGROUND

Extensive City of Alameda records indicate that these three trees have been a repeated source of sidewalk, driveway, curb, lawn, and street conflicts as well as sewer pipe intrusion and unexpected major branch failures.

Several detailed reports by SBCA Tree Consultants noted that severe pruning of the three trees over past decades has created significant decay pockets at critical junctures throughout their main trunks and branches.

To prepare their most recent report dated October 29, 2014, SBCA Tree Consultants used an advanced electronic diagnostic instrument called a Resistograph to ascertain the relative amounts of sound and decayed wood at several major branch junctures or decay pockets in each of the trees. Locations of decay were evaluated from the ground by Certified Arborists Steve and Molly Batchelder, and in the upper crown from a canopy lift device operated by Eric Carlson of West Coast Arborists, a third Certified Arborist.

The report recommended that the three sweetgum trees at 1710, 1720, and 1728 Chapin Street be removed. The report also noted that the trees at 1720 and 1728 could perhaps be retained if severe crown reduction pruning were to be administered to "reduce the potential for stem failure." Throughout the report, references are made to the presence of significant decay at locations of improper historic pruning cuts, the large size of stems associated with decay pockets, the frequency of pedestrian and vehicular traffic, the constant occupancy of adjacent homes, the difficulty of predicting the incidence and timing of stem failures, and the estimated consequences of stem failure that could range from minor to severe.

## OBSERVATIONS AND DISCUSSION

I visited the 1700 block of Chapin Street on October 1, 2014, and November 9, 2014, to visually examine and photograph the trees. Residents who live adjacent to the trees are most likely to be affected if the trees continue to lose heavy branches unexpectedly. They have experienced the most hardship brought about by unexpected branch loss as well as sewer blockage and property damage from invasive roots. They are most at risk.

I also reviewed City of Alameda maintenance records and arborist reports, and searched online sources for images of the trees' branch architecture during the dormant season when they are temporarily out of leaf.

My review of these sources corroborated the recommendations for removal set forth in the SBCA Tree Consultants report dated October 29, 2014. My professional opinion is that the best course of action is to remove and replace all three trees rather than administer severe crown reduction pruning.

Severely pruning back these trees to attempt to extend their useful life would create many new cuts over 4 inches in diameter. Existing decay sites would continue to enlarge and the trees would require more frequent inspection than other trees without established pockets of decay. Damage from root expansion and intrusion would continue. The City of Alameda would be allocating limited resources to maintain severely over-pruned and potentially dangerous trees.

## ROLES AND RESPONSIBILITIES

Many cities, including Alameda, have seen a decrease in available funds to manage their urban forests. Cities have finite financial resources to devote to urban forestry, including maintenance, removal, replanting, and staff training. Funds devoted to resolving neighborhood tree issues serve an important purpose and also have an opportunity cost because such funds are not available for other urban forest projects.

The City of Alameda retained four Tree Risk Assessors (four Certified Arborists with additional combined credentials in Urban Forestry and Tree Risk Assessment) to review the condition of the three subject trees, to assess relative risk, and to make recommendations for treatment or removal.

What is the role of the Tree Risk Manager (the City of Alameda) now that they have received the results of the advanced tree risk assessments?

The proper roles of Tree Risk Assessors and Tree Risk Managers are very different. These roles are clearly delineated in two publications that are generally accepted guidelines for tree risk assessment in the arboricultural industry:

> (Tree Care Industry Association. 2011. *American National Standard for Tree Care Operations—Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices (Tree Risk Assessment a. Tree Structure Assessment)* (A300, Part 9). Tree Care Industry Association, Manchester, NH. 14 pp.

Smiley, E. T.,N. Matheny, and S.J. Lilly. 2011. *Best Management Practices: Tree Risk Assessment.* Champaign, IL: International Society of Arboriculture, 81 pages.

The Tree Risk Assessor's role often includes the following responsibilities, as defined in the scope of work for a project:

- Evaluate and classify the likelihood of a tree failure impacting a risk target;
- Estimate the potential consequences of a tree failure;
- Record and explain findings to the client;
- Determine tree risk; and
- Provide options for treatment to mitigate risk.

The role of the Tree Risk Manager (the tree owner, property manager, or controlling authority) includes the following responsibilities:

- Meet a duty of care;
- Determine the scope of work;
- Specify the desired level of assessment;
- Choose among risk mitigation options;
- Decide the level of acceptable risk, and
- Prioritize work.

The public rightfully expects reasonable efforts to mitigate danger. The City of Alameda, through its departments, has a responsibility to decide the level of acceptable risk and to choose how to allocate limited funds. Although the city can receive recommendations and suggestions, city personnel have the nondelegable responsibility to choose which options to prioritize and implement.

## CONCLUSION

Repeated inspections and cumulative incident records show that the three sweetgum trees *(Liquidambar styraciflua)* at 1710, 1720, and 1728 Chapin Street in Alameda are at significant risk of additional major branch failure, and that they will continue to damage surrounding hardscape.

My recommendation is that the three trees be removed and more appropriate species replanted.

Respectfully submitted,

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