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ARBORIST REPORT AND TREE PROTECTION PLAN

8168 Stevenson Rd, Sacramento County, CA
December 2021



Arborist Report & Tree Protection Plan for
8168 Stevenson Avenue
Sacramento, CA

Prepared for:

Sam Zaye
8073 Abo Zayed Lane
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December 2021

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Summary

In December 2021, Davey Resource Group (DRG) was contracted by Sam Zaye to conduct a tree inventory and develop a tree protection plan for the trees in the area of impact from construction of a new housing development at 8168 Stevenson Avenue in Sacramento, California. The request was made to assess the current condition of the trees and establish a tree protection plan based on the findings.

On December 13, 2021, an International Society of Arboriculture (ISA) Certified Arborist (Tim Moran, #WE-12426A) from Davey Resource Group conducted the evaluation of eight (8) trees that may be impacted by development. The trees were assessed by their location, size, health, form, and structure. This data was used to determine if the trees fall under the definition of protected or regulated as defined by Sacramento County, and then used to calculate the critical root zone (CRZ) and structural root zone (SRZ) of the trees. These calculations will help guide construction options and mitigate potential impacts to the trees.

The trees were all located on adjacent parcels and have some foliage overhanging the parcel. The majority of trees were rated poor (3 trees) and fair (3 trees), while two (2) trees were rated good. No trees will require removal for the project, with current plans including the grading of the entire parcel to within 5-feet of property lines. The existing fence will provide sufficient protection for most of the trees, but trees #2, 3, and 5 should have tree protection fencing installed along the CRZ that connects to the existing fence. Any excavation within the CRZ should be done under arborist supervision and adjusted if roots over 2 inches in diameter are encountered.

Introduction

Background

Sam Zaye is preparing to construct new single-family houses at 8168 Stevenson Avenue in Sacramento, CA. The approximate parcel area is 2.39 acres and is completely undeveloped. The plan consists of grading the entire parcel for preparation of new home construction.

Assignment

The arborist visually assessed each tree on the site or with any portion of the canopy overhanging the parcel, and the required tree data were collected using a handheld device. Following data collection, specific tree preservation plan elements were calculated that identified each tree's critical and structural root zones (CRZ and SRZ) to better ensure survivability during the planned development.

The applicant and arborist shall use the criteria set forth in the Sacramento County Code Chapter 19 as relates to tree protection and preservation. As such, a protected tree is defined as any native oak tree measuring six (6) inches or more in diameter at breast height (DBH), and a Heritage tree is any California oak tree with a trunk diameter of nineteen (19) inches or greater. Removal of a protected tree requires a permit as stated in the Municipal Code Ch. 19.12.060. Similarly, grading within the drip lines of oak trees is prohibited unless authorized by the approving body of the Director or Public Works.

Limits of the Assignment

Many factors can limit specific and accurate data when performing evaluations of trees, their conditions, and potential for failure or response to site disturbances. No soil or tissue testing was performed. All observations were made from the ground on December 13, 2021, and no soil excavation to expose roots was performed. The landowner was present at the assessment and described the development plans in order to assist in determining potential construction impacts. The determinations and recommendations presented here are based on current data and conditions that existed at the time of the evaluation and cannot be a predictor of the ultimate outcome for the evaluated trees in the future. No physical inspection of the upper canopy, sounding and resistograph or other technologies were used in the evaluation of the trees.

Purpose and Use of Report

The purpose of this report is to provide a summary inventory of all trees within the project area, including an assessment of the current condition and health, as well as providing a tree protection plan for all evaluated trees/canopies that may be impacted by construction plans. The findings in this report can be used to make informed decisions on design planning and be used to guide long-term care of the trees. This report and detailed tree protection plan can also be submitted to Sacramento County for permitting purposes.

Observations

Methods

A visual inspection was used to develop the findings, conclusions, and recommendations found in this report. Data collection included measuring the diameter (in inches) of significant trees at approximately 54 inches above grade (DBH), height estimation, a visual assessment of tree condition, structure, and health, and a photographic record. A rating percentage (0-100%) was assigned for each tree's health, structure, and form, and the lowest percentage was used as the overall tree condition. A preservation priority was assigned to each tree on a scale of 1 to 4: a rating of 1 representing the highest priority for protection due to excellent overall condition, unique specimen, or high value tree; a rating of 2 for a tree in good to excellent condition and worthy of protection but not uniquely value; a rating of 3 for a fair condition tree that can be easily replaced; and a rating of 4 for trees in poor to critical condition that should be removed under most circumstances.

Site Observations

The project site is located on approximately 2.39 acres at 8168 Stevenson Avenue, in a residential neighborhood south of Florin and west of Vineyard (both census-designated places of Sacramento County). The parcel is north of the city of Elk Grove. The parcel is completely undeveloped consisting of unmaintained grassland. The property contains no trees over 2-inches in diameter.

Tree Observations

Eight (8) trees were assessed within the impacted area comprising six (6) distinct species. All trees were non-native species consisting of fruit and ornamental trees. The most common species was crape myrtle (*Lagerstroemia indica*, 3 trees). The trees are mostly mature, and tree condition ratings were fair for three (3) trees and poor for three (3) trees. Two (2) trees were rated good. Tree diameters ranged from 3 inches to 14 inches with an average of 6 inches. Tree heights ranged from 10 to 35 feet with an average of 18 feet. No trees are considered protected or heritage trees.

Tree photographs can be found in Appendix A and a complete Tree Inventory and Condition Assessment can be found in Appendix B.

Analysis and Discussion

The Tree Protection Zone (TPZ) is often considered as the area around a tree within the drip line radius, determined by measuring the length of the longest horizontal branch from the center of the trunk to the outermost point of the dripline. For this project, DRG recommends a conservative root zone area calculation standard as follows:

The trunk diameters of the surveyed trees were used to illustrate the potential critical root zone (CRZ) of each tree. The CRZ is considered the maximum possible radius of the root zone of a tree. The CRZ was calculated by multiplying the DBH by 1 foot. For instance, tree #3 has a DBH of 14 inches and a calculated CRZ of 14 feet (14 x 1). This distance may extend beyond the tree canopy drip line and is normally considered the tree protection zone (TPZ). Tree protection fencing is commonly installed at the drip line or the edge of CRZ; although for this project the existing fence provides substantial project, as only small amounts of foliage overhang the property for the majority of trees.

Like the CRZ, the structural root zone (SRZ) was also calculated using a commonly accepted method established by Dr. Kim Coder in *Construction Damage Assessments: Trees and Sites*.¹ In this method, the root plate size (i.e. pedestal roots, zone of rapid taper area, and roots under compression) and limit of disruption based upon tree DBH is considered as a minimum distance that any disruption should occur during construction. Significant risk of catastrophic tree failure exists if structural roots within this given radius are destroyed or severely damaged. The SRZ is the area where minimal or no disturbance should occur without arborist supervision. Both the CRZ and SRZ for the surveyed trees are listed in Appendix B, Table 1.

Conclusion and Recommendations

Tree Protection Zones for each tree will be determined using the calculated CRZ listed in Appendix C, Table 1.

- No trees will require removal under current construction plans, but several trees have trunks near the property line and should have arborist monitoring during any excavation under drip lines.
- Tree #1 is a small fig tree with a canopy overhanging the property around 3 feet. No excavation will occur under the canopy and little to no impact is expected. The existing fence should provide sufficient protection.
- Tree #2 is a small mimosa tree with a canopy overhanging the property around 6 feet. Excavation may occur under the canopy and moderate to minimal impact is expected. Tree protection fencing is recommended at the edge of CRZ connecting to the existing fence.
- Tree #3 is a royal paulownia tree in poor condition. The tree should be pruned to remove large deadwood over the project site. Excavation may occur under the canopy and moderate to minimal impact is expected. Tree protection fencing should be installed along the CRZ and connect to the existing fence.
- Tree #4 is a small lemon tree with a canopy overhanging the property around 3 feet. No excavation will occur under the canopy and little to no impact is expected. The existing fence should provide sufficient protection.
- Tree #5 is a medium-size hornbeam with a canopy overhanging the property around 5 feet. Excavation may occur under the canopy and moderate to minimal impact is expected. The existing fence is unstable and failing and should be repaired. Tree protection fencing should be installed along the CRZ and connect to the existing fence.
- Tree #6 is a small crape myrtle with a canopy overhanging the property around 4 feet. No excavation will occur under the canopy and little to no impact is expected. The existing fence should provide sufficient protection.
- Tree #7 and 8 are small crape myrtle trees with canopy overhanging the property around 3 feet. No excavation will occur under the canopy and little to no impact is expected. The existing fence should provide sufficient protection.
- TPZ fencing should be a minimum of 4 feet high, typically 6 feet, constructed of chain link fencing or similar material.
- TPZ fencing should remain in place for the entirety of the project and only removed, temporarily or otherwise, by an ISA Certified Arborist while activities are directly supervised, and replaced immediately after.
- “Tree Protection Area - Keep Out” or similar signs shall accompany the TPZ fencing every 15 feet and include contact information to report violations.
- Any excavation within the CRZ of the trees should be done by hand, and arborist supervision is recommended. Any roots over 2 inches in diameter should be cut cleanly and done with the approval of the on-site arborist.
- All heavy equipment should remain outside of the CRZs, and any trenching within a CRZ should be performed with hand tools and supervised by a Certified Arborist to monitor and document any tree impacts.

¹ Dr. Kim D. Coder, University of Georgia June 1996

Appendix A – Location Map



Appendix C – Tree Data Tables

Table 1. Tree Inventory (dbh estimated for tree #1-4)

Tree #	DBH (in)	Stems	Common Name	Botanical Name	Height (ft)	Canopy Radius (ft)	CRZ (Radius in ft)	SRZ (Radius in ft)
1	5, 4	2	Fig	<i>Ficus carica</i>	10	6	8	5
2	7	1	Mimosa	<i>Albizia julibrissin</i>	12	6	7	4
3	14	1	Royal Paulownia	<i>Paulownia tomentosa</i>	25	9	14	7
4	3, 3, 3	3	Lemon	<i>Citrus limon</i>	12	5	6	4
5	10	1	European hornbeam	<i>Carpinus betulus</i>	35	8	10	6
6	7	1	Crape myrtle	<i>Lagerstroemia indica</i>	25	6	7	4
7	5	1	Crape myrtle	<i>Lagerstroemia indica</i>	14	6	5	3
8	5	1	Crape myrtle	<i>Lagerstroemia indica</i>	12	5	5	3

Table 2. Tree Condition

Tree #	DBH (in)	Stems	Common Name	Botanical Name	Health (%)	Structure (%)	Form (%)	Overall Condition (%)	Condition
1	5, 4	2	Fig	<i>Ficus carica</i>	75	60	70	60	Fair
2	7	1	Mimosa	<i>Albizia julibrissin</i>	60	50	65	50	Fair
3	14	1	Royal Paulownia	<i>Paulownia tomentosa</i>	50	40	50	40	Poor
4	3, 3, 3	3	Lemon	<i>Citrus limon</i>	75	60	65	60	Fair
5	10	1	European hornbeam	<i>Carpinus betulus</i>	60	40	40	40	Poor
6	7	1	Crape myrtle	<i>Lagerstroemia indica</i>	65	50	30	30	Poor
7	5	1	Crape myrtle	<i>Lagerstroemia indica</i>	75	75	85	75	Good
8	5	1	Crape myrtle	<i>Lagerstroemia indica</i>	75	70	75	70	Good

Table 3. Preservation Priority, Protected/Removal Status, and Notes

Tree #	DBH (in)	Stems	Common Name	Condition	Priority	Protected (Y/N)	Removal Required (Y/N)	Condition Notes/Observations
1	5, 4	2	Fig	Fair	2	N	N	Codominant stems, growing in backyard at 873 Abo Zayed Ln, minimal to no impact expected
2	7	1	Mimosa	Fair	2	N	N	Broken limb, poor location, in backyard at 8177 Pine Cove Ct., moderate to minimal impact expected
3	14	1	Royal Paulownia	Poor	3	N	N	Codominant stems, 5" deadwood, trunk wounds, stressed, dieback, at 8180 Cliffe Way, moderate to minimal impact expected
4	3, 3, 3	3	Lemon	Fair	2	N	N	Codominant stems, at 8180 Aden Way, minimal impact expected
5	10	1	European hornbeam	Poor	4	N	N	Improperly pruned, fruiting bodies, included bark, trunk decay, uneven canopy, at 8181 Aden Way, moderate to minimal impact expected
6	7	1	Crape myrtle	Poor	2	N	N	Improperly pruned with heading cuts and stub cuts, 8181 Aden Way, minimal impact expected

Tree #	DBH (in)	Stems	Common Name	Condition	Priority	Protected (Y/N)	Removal Required (Y/N)	Condition Notes/Observations
7	5	1	Crape myrtle	Good	2	N	N	Growing at 8180 Stevenson, minimal to no impact expected
8	5	1	Crape myrtle	Good	2	N	N	Growing at 8180 Stevenson, minimal to no impact expected

Appendix C – Tree Photographs



Photo 1. Tree #1 is located at 873 Abo Zayed Lane and has little foliage overhanging the parcel; little to no impact is expected.



Photo 2. Tree #2 is located at 8177 Pine Cove Ct and has some foliage overhanging the parcel; tree protection fencing should be installed at the CRZ and connect to the existing fence.



Photo 3. Tree #3 at 8180 Cliffe Way is in poor condition with large deadwood over the parcel; remove deadwood over the parcel and install tree protection fencing along the CRZ to the existing fence.



Photo 4. Tree #4 is growing at 8180 Aden Way, and minimal impact is expected.



Photo 5. Tree #5 (center) and #6 (left) have been poorly pruned; the existing fence is failing and should be repaired. Install tree protection fencing along the CRZ to the existing fence.



Photo 6. Tree #6 has been improperly pruned and is located at 8181 Aden Way; minimal impact is expected.



Photo 7. Trees #7 (left) and 8 (right) are in good condition located along the eastern property line at 8180 Stevenson Ave; minimal to no impact is expected.