

# **APPENDIX C1**

*Arborist Report for Palm Villas Saratoga Project:  
January 29, 2016*



Deborah Ellis, MS

Consulting Arborist & Horticulturist



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CITY OF SARATOGA

## ARBORIST REPORT

Tree Inventory, Tree Descriptions and Recommendations Relative to Proposed Construction

### Palm Villas, Saratoga (Lots 1 & 2)

Saratoga Creek Drive at Cox Avenue,  
Saratoga, California

#### Prepared for:

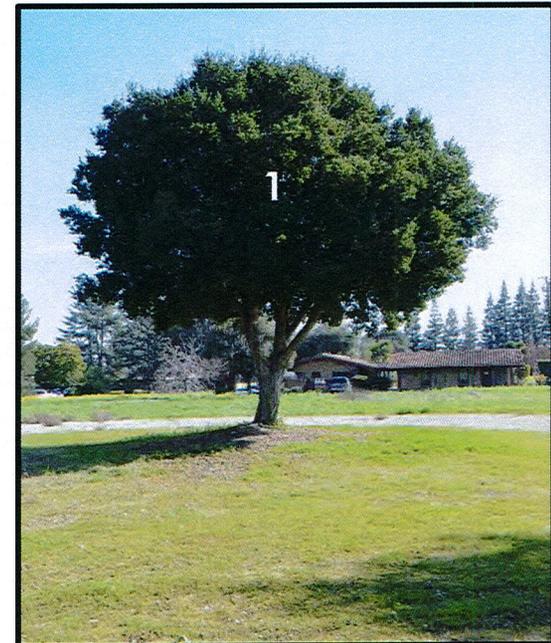
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#### Prepared by:

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JANUARY 29, 2016

Report History: This is my second report for this project. My first report was dated July 27, 2015.

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Cover photo: **coast live oak #1**, the most prominent tree on the project site. All photos in this report were taken by D. Ellis on January 26, 2016.

Deborah Ellis, MS

Consulting Arborist & Horticulturist



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# TREE MAP #1

## AERIAL



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Arborist Report #2 for Palm Villas, Saratoga. January 29, 2016.

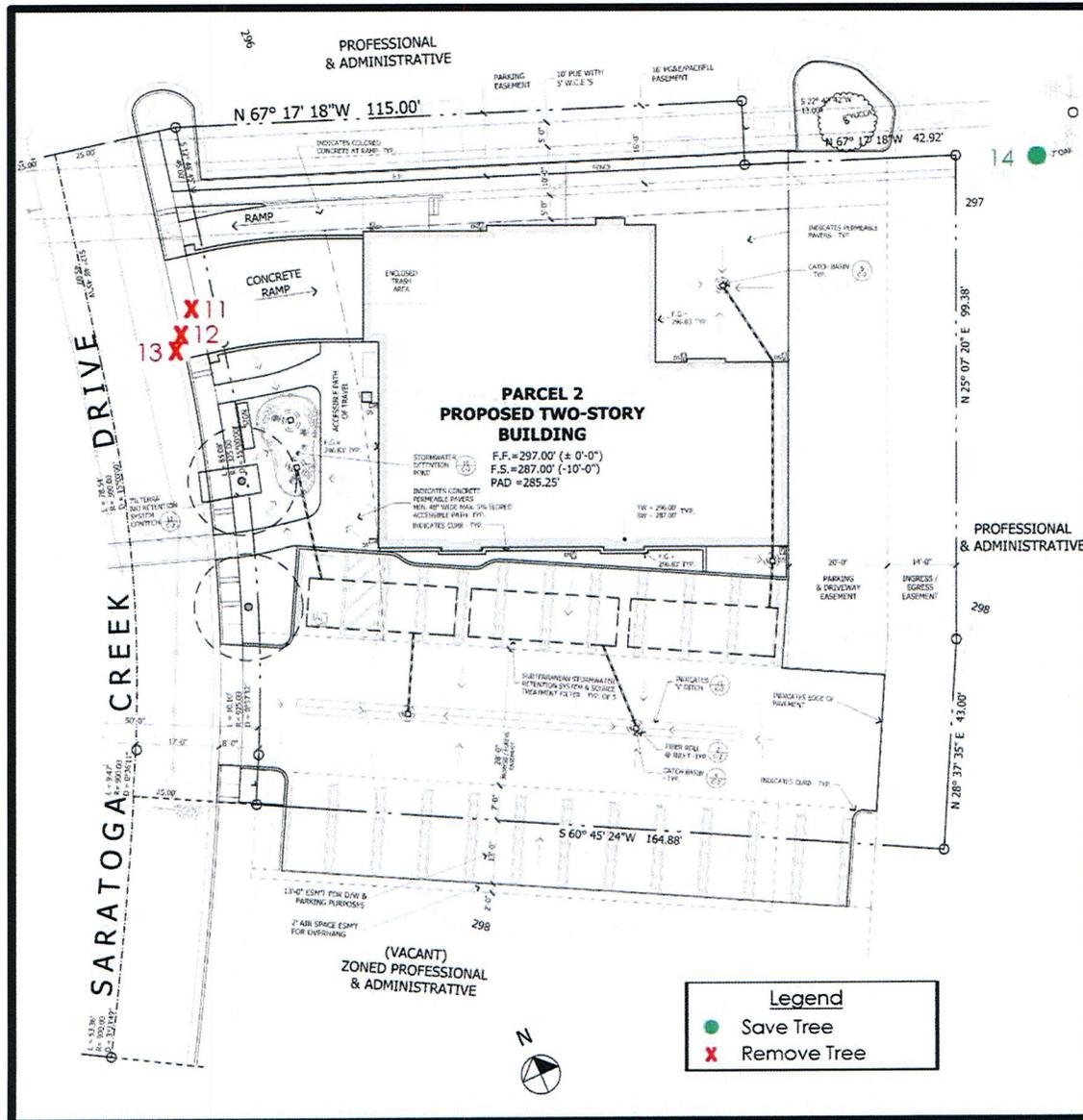
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# TREE MAP #3 – LOT 2



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## SUMMARY

### THE PROJECT

A two-story senior assisted living building and associated improvements will be constructed on the project site, which is presently two adjacent vacant lots.

### THE TREES & THE PROJECT

There are 14 **protected trees**<sup>1</sup> with driplines that may be within 5 feet of proposed construction. Most of these trees are on neighboring properties adjacent to the project site. Only 4 of the trees (**#1, 11, 12 and 13**) are located on the project site. Three trees (**coast live oaks #11, 12 and 13**) will need to be removed because they are located within the proposed extension of Saratoga Creek Drive. These are small trees that have trunk diameters of 7 to 8 inches. **Coast live oak #3** has a large decayed area on one of its two trunks that overhang the site. The trunk overhanging the site should be removed. It should be possible to save all of the other trees although I have recommended a few design modifications to reduce damage for **coast live oak #1** and **California sycamore #9**.

**Elderberry #3**<sup>2?</sup> is not shown on any of the construction plans I received, but is located between a 40 and 24-inch sycamore on adjacent property to the south, and coast live oak #3 on the Topographic Survey, near the southwest corner of Lot 1. This is a sprawling multi-trunk tree that has split apart and fallen over, with most of its trunks dead. A portion of the tree is still alive (an 8 to 10-inch trunk) and the tree may overhang (or be lying on) the project site. I recommend that the trunks of the tree, be they living or dead, be cut to short stumps about 6 inches tall. The shrub/tree will probably regrow from these stumps and provide value for wildlife and erosion control above the creek.

All 14 of the trees are described briefly the *Summary Tree Table (Table 1)* on page 5 and in greater detail in the *Complete Tree Table (Table 3)* beginning on page 13. The total estimated value of the 14 trees described in this report is \$100,080. The value of trees will be removed is \$4050. The value of trees to remain is \$96,030. The amount requested for the tree protection bond is half the amount of the trees that I estimate will be saved, or \$48,015.

<sup>1</sup> **Protected Tree**: a protected tree in Saratoga has a trunk diameter of 6 inches or greater for native tree species or 10 inches in diameter for non-native species. Trunk diameter is measured at 4.5 feet above the ground. For construction project tree evaluation and arborist reports, any protected tree with its dripline within 5 feet of proposed construction must be addressed.

**TABLE 1 SUMMARY TREE TABLE**

Tree #	Common Name	Trunk Diam. (DBH)	Preservation Suitability	Estimated Value	Expected Construction Impact	Action	Reason
1	coast live oak	20 (2.5)	Good	\$7,200	Moderate	Save	
2	blue elderberry	9,10,8,4,4	Poor/Unacceptable	480	Uncertain	Debatable	Construction, Overall Condition, Actual location
3	coast live oak	10,12	Fair/Good	3,850	Low	Save but remove trunk overhanging site	Risk
4	coast live oak	12,18,29,30	Good	42,200	Low/Moderate	Save	
5	elderberry	7,8,12	Fair/Poor	1,760	Low/Moderate	Save	
6	elderberry	12	Fair/Poor	900	Low	Save	
7	elderberry	13,10	Fair/Poor	1840	Low	Save	
8	coast live oak	7	Good	1,400	Low	Save	
9	Calif. sycamore	25,18,19,8	Good	24,800	Moderate/ Severe	Debatable	Construction
*10	London plane	18	Fair	5,900	Moderate	Save	
11	coast live oak	6,7	Fair/Good	1,350	Severe	Remove	Construction
12	coast live oak	8	Fair/Good	1,350	Severe	Remove	Construction
13	coast live oak	8	Fair/Good	1,350	Severe	Remove	Construction
14	coast live oak	10,8,7,6	Fair/Good	5,700	Low/Moderate	Save	
<b>Total Estimated Value</b>				<b>\$100,080</b>			

\*Species not native to the immediate area. All other species are native to the immediate area and are probably of *natural growth*, meaning that they were not planted.



## RECOMMENDATIONS

1. **Existing trees to be saved or removed should be numbered on all site-based plans to match the tree tag numbers that are used in this arborist report.**
2. **Tree Removals:** Three trees, **#11, 12 and 13 coast live oak** will need to be removed because they are within the proposed entrance roadway into the site. I also recommend removal of one trunk of the multi-trunk **coast live oak #3** that is overhanging the site, because it has significant decay and is likely to fail over the site.
3. **Design changes are recommended around coast live oak #3 and California sycamore #9** to reduce construction damage. Please read about this in the *Notes* column of the Complete Tree Table.
4. **Elderberry #3:** this tree is not shown on any of the construction plans I received, but is it located between a 40 and 24-inch sycamore and coast live oak #3 on the Topographic survey, near the southwest corner of Lot 1. This is a sprawling multi-trunk tree that has split apart and fallen over, with most of its trunks dead. A portion of the tree is still alive (an 8 to 10-inch trunk) and the tree may overhang (or be lying on) the project site. I recommend that the trunks of the tree, be they living or dead, be cut to short stumps about 6 inches tall. The shrub/tree will probably regrow from these stumps and provide value for wildlife and erosion control above the creek.
5. **Story posts should be erected facing the north and west perimeter of Lot 1**, in order to verify if any and how much construction clearance will be required for adjacent trees.
6. **For those trees that will be retained on the site or with canopies overhanging the site, follow the City of Saratoga Tree Protection Requirements**, which are included on pages 25 through 27. A separate copy of the *Requirements* will be provided by City Arborist Kate Bear and must be incorporated into the project final plans. These Requirements shall replace any tree protection notes, specifications or other directions (including detail drawings) that are currently included in the plans, for example on sheets C-2 for each lot. Kate Bear will also require that a copy of this Arborist Report be included in the project final plans. You may request that I provide a condensed version of this report for the plans. Additional tree protection information is also available from me if necessary.
7. **Neighboring trees:** whose canopies overhang the project site and have driplines within 5 feet of any soil disturbance or other improvements must receive tree protection in the same manner as existing trees to remain on the project site; for example tree protection fencing and signage. The general contractor shall fence off the dripline of these trees as much as possible in order to



avoid damaging branches and compacting the soil beneath the canopy. If pruning is necessary in order to avoid branch breakage, the general contractor shall hire a **qualified tree service**<sup>2</sup> to perform the minimum necessary construction clearance pruning.

8. **Tree Protection Bond:** I recommend that half the value of the trees estimated to remain be requested for the bond.
  - The total value of all trees on site or overhanging the site is \$100,080.
  - The total value of the trees to be removed is \$4,050.
  - The total value of the trees that will remain is \$96,030. Half of this value (to be requested for the tree protection bond) is \$48,015.
9. **I should review all site-based plans for this project:** I have reviewed the plan sheets listed on page 10. Additional improvements on plans that were not reviewed or have been revised may cause additional trees to be impacted and/or removed. Plans reviewed by the arborist should be full-size, to-scale and with accurately located tree trunks and canopy driplines relative to proposed improvements. Scale should be 1:20 or 1:10.
10. **As a part of the design process, try to keep improvements (and any additional over-excavation or work area beyond the improvement) as far from tree trunks and canopies as possible.**  $5 \times \text{DBH}$ <sup>3</sup> or the dripline of the tree, whichever is greater, should be used as the minimum distance for any soil disturbance to the edge of the trunk.  $3 \times \text{DBH}$  should be considered the absolute minimum distance from any disturbance to the tree trunk on one side of the trunk only, for root protection, with a minimum distance of 5 feet. Farther is better, of course. For disturbances on multiple sides of the trunk, then  $5 \times \text{DBH}$  or greater should be used, and farther is also better here. Tree canopies must also be taken into consideration when designing around trees. Don't forget the minimum necessary working margin around improvements as you locate those improvements. Disturbance usually comes much closer to trees than the lines shown on the plans!
11. **Construction or landscaping work done underneath the dripline of existing trees should preferably be done by hand**, taking care to preserve existing roots in undamaged condition as much as possible and cutting roots cleanly by hand when first encountered, when those roots must be removed. A **qualified consulting arborist** (the **project arborist**) should be hired to monitor tree protection and supervise all work underneath the dripline of trees. This also applies to trees on neighboring properties whose canopies overhang the work site.

<sup>2</sup> Terms highlighted at their first occurrence in this report are explained in the [Glossary](#) beginning on page 37.

<sup>3</sup> See pages 24 and 25 for an explanation of the 3 and  $5 \times \text{DBH}$  root protection distances for trees.



12. Landscaping:

- a. **New landscaping and irrigation can be as much or more damaging to existing trees than any other type of construction.** The same tree root protection distances recommended for general construction should also be observed for new landscaping. Within the root protection zone it is usually best to limit landscape changes to a 3 to 4-inch depth of coarse organic mulch such as wood or bark chips or tree trimming chippings spread over the soil surface. The environment around existing trees should be changed very carefully or not at all – please consult with me regarding changes in the landscape around existing trees and/or have me review the landscape and irrigation plans for this project.
- b. **This site contains oaks and other tree species that are native to the immediate area** (coast live oak). These tree species fares best with no irrigation during the normal dry months of the year. The best treatment of the ground beneath these trees is nothing but their own natural leaf and twig litter mulch. Exceptions to irrigation restriction include during the winter in extended drought periods, as temporary compensation for root loss due to construction, and for newly planted trees during their 2 to 3 year establishment period after installation. Native oak species especially are often killed due to inappropriate landscaping that is installed around them; mostly commonly landscaping that requires frequent irrigation such as lawns or other high water-use plants. Large drought tolerant trees such as native oaks can become dangerous when exposed to frequent irrigation, especially close to their trunks. California native oaks that are treated in this manner may contract **root rot diseases** and fall over at the roots; often causing great damage and personal injury if there are targets in their vicinity such as homes, cars and people. It is important to landscape correctly around our native oaks; e.g. **summer dry**. I have attached a publication entitled *Living among the Oaks*, to assist in best managing the oaks on the property, as well as the directions to follow in items `b' and `c' below.
- c. **Around the native oaks: there shall be no planting or irrigation (including drip irrigation) within a minimum radius of 10 feet from the trunks of the oaks or the inner half of the dripline of the tree, whichever is greater. Farther is better. Within this 10-foot (or greater) radius around the trunk** a 3 to 4-inch depth of coarse organic mulch such as wood or bark chips or tree trimming chippings shall be spread over the soil surface. Shredded redwood bark is not allowed. Keep the mulch off the root collar of the trees. Beyond this 10-foot (or greater) protective, mulched area only drought-tolerant, summer-dry plant species, preferably plant species that are native to the immediate area and grow commonly in association with the native oaks, may be planted. Only summer-dry tolerant plants are allowed within the outer half of the dripline of the tree or 20 feet from the trunk, whichever is greater. Such plants may be planted from no larger than 1-gallon cans in holes that are hand-dug manually with a shovel (no power equipment such as augers allowed). These plants must be spaced sparsely (e.g. planted no closer than 4 feet apart) and watered with drip irrigation. The planting zone around these plants shall be mulched in the same



manner previously described. The drip irrigation for these plants should preferably be abandoned after a 2 to 3 year establishment period.

13. **Trees to remain after adjacent trees are removed** should be re-evaluated by me or the project arborist after the surrounding trees have been taken out.
14. **General Tree Maintenance:**
  - a. The **root collars** and lower trunks of some of the trees (e.g. **California sycamore #9**) were obscured from view by vegetation, excess soil or other covering. Such portions of the tree should be uncovered and the tree re-evaluated by the arborist.
  - b. **Do no unnecessary pruning, fertilization or other tree work.** Pre-construction pruning should be limited to the absolute minimum required for construction clearance. A qualified tree service should be hired to provide such pruning.

## INTRODUCTION

### PURPOSE & USE OF REPORT

This survey and report was required by the City of Saratoga as a part of the building permit process for this project. The purpose of the report is to identify and describe the existing protected trees that are within or near proposed construction. The audience for this report is the property owner, developer, project architects and contractors, and City of Saratoga authorities (including the City Arborist, Kate Bear) concerned with tree preservation and tree removal. The goal of this report is to preserve existing protected trees that are in acceptable condition, are good species for the area and will fit in well with the proposed new use of the site.

### BACKGROUND INFORMATION

My first Arborist Report for this project is dated July 27, 2015, based upon my July 23, 2015 tree and site evaluation. At that time no construction plans were available except for a Proposed Site Layout for Lot 1 with no existing trees included. In that first report I recommended that the existing trees on and adjacent to the site be accurately surveyed and included in the project plans, which has been done. This second Arborist Report is based upon those plans which I have recently reviewed, which are listed on page 10.



I have made a few changes to the trees that are included in this second Arborist Report, based upon the topographic map that I reviewed as well as a re-evaluation of some of the trees on the site. Upon closer inspection I decided that the two Brazilian pepper tree clumps on either side of the entrance to the site (labeled as **trees #11 and 12** in my July 2015 report) do not qualify as "protected" trees, and so are not included in this report. These trees are replaced with trees #11 and 12, coast live oaks, which are part of a clump of trees and shrubs on Lot 2. I have also added a **coast live oaks #13 and #14**.

## PLANS REVIEWED

Table 2

PLAN	DATE	SHEET	REVIEWED	SHOULD REVIEW	NOTES
<b>Existing Site Topographic Map</b> <i>including existing tree trunk locations</i>	9/15				
<b>Proposed Site Layout</b>	1/21/16	A-1.2	X		Does not include all existing tree locations.
<b>Demolition</b>					
<b>Construction Staging</b>				X	
<b>Grading/Drainage</b>	1/21/16	C-1	X		
<b>Erosion Control</b>					
<b>Underground Utility</b>				X	
<b>Site &amp; Building Sections</b>				X	
<b>Building Exterior Elevations</b>				X	
<b>Roof</b>				X	
<b>Shadow Study</b>					
<b>Construction Details</b> <i>that would affect trees (for example building foundations, pavement installation including sub-grade preparation, underground utility installation)</i>				X	
<b>Landscape Planting</b>	1/21/16	L-1	X		
<b>Irrigation Plan</b>				X	
<b>Landscape &amp; Irrigation Details</b>				X	



## METHODOLOGY

I performed a brief evaluation of the subject trees on July 23, 2015 and again on January 26, 2016. On January 26, 2016 I briefly rechecked **trees #1-10** and performed a complete basic evaluation of **trees #11-14**. Tree characteristics such as form, weight distribution, foliage color and density, wounds and indicators of decay were noted. Surrounding site conditions were also observed. Evaluation procedures were taken from:

- American National Standard A-300 (Part 5) – 2012 for Tree Care Operations – Tree, Shrub & Other Woody Plant Management – Standard Practices (Management of Trees, & Shrubs During Site Planning, Site Development and Construction).
- International Society of Arboriculture, Best Management Practices:
  - Managing Trees during Construction. 2008
  - Tree Inventories. 2013

The above references serve as industry professional standards for tree evaluation and written findings and recommendations for trees on construction sites prior, during and after site development.

Each of the trees was tagged in the field with metal number tags that correspond with the tree numbers referenced in this report. I measured the trunk diameter of each tree with a diameter tape at 4.5 feet above the ground (DBH), which is also the required trunk diameter measurement height of the City of Saratoga. DBH is used calculate tree protection distances and other tree-related factors. Trunk diameter was rounded to the nearest inch. I estimated the tree's height and canopy spread. Tree *Condition* (structure and vigor) was evaluated and I also recorded additional notes for trees when significant. Tree species and condition considered in combination with the current or (if applicable) proposed use of the site yields the *Tree Preservation Suitability* rating. The more significant trees (or groups of trees) were photographed with a digital camera. Some of these photos are included in this report, but all photos are available from me by email if requested.



## OBSERVATIONS

### SITE CONDITIONS

The project site is currently a vacant lot bordered by existing professional buildings to the north and east, Saratoga Creek and neighboring residential properties to the west and a vacant lot to the south. Site topography is mainly level. Sun exposure for the trees varies from full to partly shaded, depending upon proximity to other trees. Most of the subject trees are growing off the site on adjacent properties, but their canopies overhang the project site. Tree condition ranges from Poor to Good with most trees in Fair to Good condition. All tree species except **London plane #10** are native to the immediate area and are probably of *natural growth*, meaning that they were not planted.

No irrigation is supplied to **trees #1-9** and **11-14** which is fine because these are native tree species that are adapted to the climate of the area. Those trees bordering however, do receive some additional water (other than rainfall) from the creek itself. **London plane #10** does receive irrigation from the office complex landscape. Tree maintenance is of a low or non-existent level for trees #1-9 and 11-14 which is fine for these native, natural growth trees. Maintenance for London plane #10 consists of lower branch removal for parking lot clearance, and directional pruning for overhead electric wire clearance.



## APPENDIX

### TABLE 3 COMPLETE TREE TABLE

This Table is continued through page 19. Data fields in the Table are explained on pages 20 to 24.

\* Tree species not native to the immediate area. All other tree species are native to the immediate area and are probably of natural growth, meaning that they were not planted.

Tree #	Species & Common Name	Trunk Diam. (DBH)	Size	CONDITION		Preservation Suitability	Est. Value	Expected Construction Impact	Action	Reason	Notes	TREE ROOT PROTECTION DISTANCES		
				Vigor	Structure							3xDBH	5xDBH	OTZ
1	<i>Quercus agrifolia</i> , coast live oak	20 (2.5)	30x30	90	60	Good	\$7,200	Moderate	Debatable	Construction	Construction: proposed curb and pavement is 7.5 feet from the trunk and farther. Since there is disturbance on multiple sides of the trunk I would like to see no soil disturbance closer than 8 feet. This means that the nearest pavement should be moved at least another foot farther from the trunk. This may reduce the width of a parking space that is planned near this tree – so turn this in to a motorcycle or bicycle parking if it is not large enough for a car. Proposed landscaping are acceptable species and far enough from the trunk, as long as there will be no soil disturbance for planting or	5	8	15



Tree #	Species & Common Name	Trunk Diam. (DBH)	Size	CONDITION		Preservation Suitability	Est. Value	Expected Construction Impact	Action	Reason	Notes	TREE ROOT PROTECTION DISTANCES		
				Vigor	Structure							3xDBH	5xDBH	OTZ
											irrigation (e.g. trenching) closer than 10 feet from the trunk of the tree. <u>Condition:</u> the only problem with this near-perfect tree is <b>included bark</b> between the <b>two-codominant scaffold branches</b> at 4 feet.			
2	<i>Sambucus nigra caerulea</i> , blue elderberry	9,10,8,4,4	18x33	50	20	Poor	480	Uncertain	Debatable	Actual Location, Construction, Overall Condition	<u>Construction:</u> not included on any plans, but it is between the 40 + 24-inch sycamore near the southwest corner of Lot 1. Most of the tree is dead. I recommend cutting all trunks to a short stump of 6 inches or so and allowing the live portion of this shrub/tree to regrow. This will also remove any impediment from the tree to project construction. <a href="#">Saratoga Tree Removal Criteria</a> <sup>4</sup> met: 1, 7. <u>Condition:</u> most of the trunks of this tree are dead and fell over onto the project site (or at least the level area above	6	10	23

<sup>4</sup> See page 34 for an explanation of the Saratoga Tree Removal Criteria.



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Tree #	Species & Common Name	Trunk Diam. (DBH)	Size	CONDITION		Preservation Suitability	Est. Value	Expected Construction Impact	Action	Reason	Notes	TREE ROOT PROTECTION DISTANCES		
				Vigor	Structure							3xDBH	5xDBH	OTZ
											the creek bank), but one trunk is still alive and continues to grow. The trunks emerge from the soil at about 6 feet from the edge of the creek bank. Much poison oak is growing amongst the fallen canopy.			
3	coast live oak	10,12	40x30	90	40	Fair/Good	3,850	Low	Save, but remove decayed trunk overhanging site	Risk	<p><u>Construction</u>: nearest construction is 22 feet to proposed pavement. trunk.</p> <p><u>Condition</u>: there is significant decay high on the trunk overhanging the project site from an old pruning wound stub. Birds have made holes and nests in this area of the tree. The trunk is positioned precariously on the steep creek side of the creek bank. The terrain is too steep for me to observe the creek side of the tree. The canopy of the tree overhangs the project site by perhaps 30 feet, but the tree has been pruned so that branches are high and will probably not interfere with future construction. I still</p>	5	7	8



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Tree #	Species & Common Name	Trunk Diam. (DBH)	Size	CONDITION		Preservation Suitability	Est. Value	Expected Construction Impact	Action	Reason	Notes	TREE ROOT PROTECTION DISTANCES		
				Vigor	Structure							3xDBH	5xDBH	OTPZ
											recommend using story posts to better assess any potential impacts to the canopy and any necessary construction clearance pruning.			
4	coast live oak	12,18,29,30	60x50	90	70	Good	42,200	Low	Save		<p><u>Construction:</u> nearest construction is 19.5 feet to proposed pavement. Will have to check any interference with canopy via story posts.</p> <p><u>Condition:</u> this tree is also precariously perched on the steep creek bank. Its canopy also overhangs the project site, but fairly high.</p>	15	25	30
5	elderberry	7,8,12	22x20	50	40	Fair/Poor	1,760	Low/Moderate	Save		<p><u>Condition:</u> this tree overhangs the level area beyond creek area by 6 ft.</p>	5	8	20
6	elderberry	12	28x22	70	50	Fair/Poor	900	Low	Save		<p><u>Construction:</u> same as previous.</p> <p><u>Condition:</u> the trunk of this tree is located several feet down the steep creek bank and I wasn't able to observe the creek side.</p>	5	5	12
7	elderberry	13,10	18x12	70	40	Fair/Poor	1840	Low	Save		<p><u>Construction:</u> same as previous.</p>	5	8	22

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Tree #	Species & Common Name	Trunk Diam. (DBH)	Size	CONDITION		Preservation Suitability	Est. Value	Expected Construction Impact	Action	Reason	Notes	TREE ROOT PROTECTION DISTANCES		
				Vigor	Structure							3xDBH	5xDBH	OTZ
8	coast live oak	7	20x18	85	70	Good	1,400	Low	Save			5	4	5
9	<i>Platanus racemosa</i> , Calif. sycamore	25, 18, 19, 8	85x60	75	60	Good	24,800	Moderate/ Severe	Debatable	Construction	<p><b>Construction:</b> proposed new pavement 5 feet from trunk; drainage pipe centerline 6.5 feet. There must be no soil disturbance closer than 12 feet on one side of the trunk of this tree; preferably farther. Please adjust plans accordingly. Story posts should also be erected to understand pruning requirements – there are some large long branches high in the tree that may be in the path of the building.</p> <p><b>Condition:</b> the root collar and lower trunks are obstructed by stored materials, a partial fence and debris. The trunks should be cleared of these materials and I should re-evaluate this area.</p>	12	20	60
*10	<i>Platanus x hispanica</i> , London plane	18	35x30	100	70	Fair	5,900	Moderate	Save		<p><b>Construction:</b> proposed pavement and the end of a drainage pipe are 7 feet from the trunk. This is acceptable. No landscaping</p>	5	8	14



Tree #	Species & Common Name	Trunk Diam. (DBH)	Size	CONDITION		Preservation Suitability	Est. Value	Expected Construction Impact	Action	Reason	Notes	TREE ROOT PROTECTION DISTANCES		
				Vigor	Structure							3xDBH	5xDBH	OTPZ
											is shown between tree trunk and property line – this is good but please install organic mulch in this area. <u>Condition:</u> this tree is located on the adjacent professional office property to the north, but the canopy overhangs the project site by perhaps 10 feet (it is hard to say how far the canopy overhangs due to two fences about 10 feet apart – so I am unsure where the actual property line is probably located). The lower trunk and root collar of the tree are growing through a notch that was cut in the fence nearest to the office complex. This tree is also growing beneath overhead electric wires and has been <b>directionally pruned</b> to its present height.			
11	coast live oak	6,7	25x18	90	60	Fair/Good	1,350	Severe	Remove	Construction	<u>Construction:</u> within proposed roadway on Lot 2. <a href="#">Saratoga Tree Removal Criteria met: 7, 9.</a>	5	5	5

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Tree #	Species & Common Name	Trunk Diam. (DBH)	Size	CONDITION		Preservation Suitability	Est. Value	Expected Construction Impact	Action	Reason	Notes	TREE ROOT PROTECTION DISTANCES		
				Vigor	Structure							3xDBH	5xDBH	OTZ
12	coast live oak	8	30x20	90	60	Fair/Good	1,350	Severe	Remove	Construction	Construction: same as previous. <i>Saratoga Tree Removal Criteria met: 7, 9.</i>	5	5	5
13	coast live oak	8	30x20	90	60	Fair/Good	1,350	Severe	Remove	Construction	Construction: same as previous. <i>Saratoga Tree Removal Criteria met: 7, 9.</i>	5	5	5
14	coast live oak	10,8,7,6	30x30	90	50	Fair	5,700	Low/Moderate	Save		Construction: tree canopy overhangs corner of Lot 2 slightly and may require some clearance pruning. Condition: this tree is probably a volunteer of natural growth. There are also a few other small stems in this crowded clump of trees that are from volunteer holly oaks, <i>Quercus ilex</i> . The main tree however, is a stump sprout.	5	9	10



## **EXPLANATION OF TREE TABLE DATA COLUMNS:**

- 1) **Tree Number** (the field tag number of the existing tree). Each existing tree in the field is tagged with a 1.25 inch round aluminum number tag that corresponds to its tree number referenced in the arborist report, Tree Map, Tree Protection Specifications and any other project plans where existing trees must be shown and referenced.
- 2) **Tree Name and Type:**  
Species: The *Genus* and *species* of each tree. This is the unique scientific name of the plant, for example *Quercus agrifolia* where *Quercus* is the Genus and *agrifolia* is the species. The scientific names of plants can be changed from time to time, but those used in this report are from the most current edition of the *Sunset Western Garden Book* (2012) Sunset Publishing Corporation. The scientific name is presented at its first occurrence in the Tree Table, along with the regional common name. After that only the common name is used.
- 3) **Trunk DBH.** Tree trunk diameter in inches “at breast height” (measured at 4.5 feet above ground level). This is the forestry and arboricultural standard measurement height that is also used in many tree-related calculations. It is also the trunk diameter measurement height required by the City of Saratoga. For multi-trunk trees, trunk diameter is measured for the largest trunk and estimated for all smaller trunks. A number in parentheses (3) after the trunk diameter(s) indicates that it was not possible to measure the trunk at 4.5 feet (due to tree architecture) and so the diameter was measured at this alternate height (in feet), which reflects a more realistic trunk diameter for the tree.
- 4) **Size:** tree size is listed as height x width in feet, estimated and approximate and intended for comparison purposes.
- 5) **Condition Ratings:** Trees are rated for their *condition* on a scale of *zero to 100* with zero being a dead tree and 100 being a perfect tree (which is rare – like a supermodel in human terms). A 60 is “average” (not great but not terrible either). There are two components to tree condition – **vigor** and **structure**, and each component is rated separately. Averaging the two components is not useful because a very low rating for either one could be a valid reason to remove a tree from a site -- even if the other component has a high rating. Numerically speaking for each separate component:  
  

100 is equivalent to *Excellent* (an ‘A’ academic grade), 80 is *Good* (B), 60 is *Fair* (C), 40 is *Poor* (D), 20 is *Unacceptable* (F) and 0 is *Dead*.
- 6) Relative to the scope of work for this report, tree Condition has been rated but not explained in detail and recommendations for the management of tree condition have not been included. The tree owner may contact Deborah Ellis for additional information on tree condition and specific recommendations for the general care of individual trees relative to their condition.
- 7) The *Condition* of the tree is considered relative to the tree species and present or future intended use of the site to provide an opinion on the tree’s Preservation Suitability Rating (i.e. “Is this tree worth keeping on this site, in this location, as explained in Table 4 on the next page. This is based upon



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the scenario that the tree is given enough above and below-ground space to survive and live a long life on the site. Ratings such as “Fair/Good” and “Fair/Poor” are intermediate in nature. The Preservation Suitability rating is not always the same as the Condition Rating because (for example) some trees with poor condition or structure can be significantly improved with just a small amount of work – and it would be worthwhile to keep the tree if this were done.

**Table 4 Preservation Suitability Rating Explanation**

<b>Excellent</b>	Such trees are rare but they have unusually good health and structure and provide multiple functional and aesthetic benefits to the environment and the users of the site. These are great trees with a minimum rating of “Good” for both vigor and structure. Equivalent to academic grade ‘A’.
<b>Good</b>	These trees may have some minor to moderate structural or condition flaws that can be improved with treatment. They are not perfect but they are in relatively good condition and provide at least one significant functional or aesthetic benefit to the environment and the users of the site. These are better than average trees equivalent to academic grade ‘B’.
<b>Fair</b>	These trees have moderate or greater health and/or structural defects that it may or may not be possible to improve with treatment. These are “average” trees – not great but not so terrible that they absolutely should be removed. The majority of trees on most sites tend to fall into this category. These trees will require more intensive management and monitoring, and may also have shorter life spans than trees in the “Good” category. Retention of trees with moderate suitability for preservation depends upon the degree of proposed site changes. Equivalent to academic grade ‘C’.
<b>Poor</b>	These trees have significant structural defects or poor health that cannot be reasonably improved with treatment. These trees can be expected to decline regardless of management. The tree species themselves may have characteristics that are undesirable in landscape settings or may be unsuitable for high use areas. I do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Equivalent to academic grade ‘D’.
<b>None</b>	These trees are dead and/or are not suitable for retention in their location due to risk or other issues. In certain settings however, (such as wilderness areas, dead trees are beneficial as food and shelter for certain animals and plants including decomposers. Equivalent to academic grade ‘F’.

- 8) **Value:** Tree monetary appraisal is based upon: (1) Cost of Installation plus (2) its increase in value over a container-size tree if a larger size tree being appraised. This value is then adjusted according to: (a) *Species* (according to regional published species ratings), (b) *Condition* of the tree, and (c) *Location* of the tree (an average of the sub-categories of *Site*, *Contribution* and *Placement*). The methodology and calculations for the Trunk Formula Method are taken from two industry standard texts – The Guide for Plant Appraisal, 9th edition, 2000, edited by the Council of Tree & Landscape Appraisers and published by the International Society of Arboriculture, and the Species Classification and Group Assignment, 2004, published by the



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Western Chapter of the International Society of Arboriculture. The cross-sectional trunk diameter price presented in this text has been adjusted slightly downward to match the current actual average wholesale cost of a 24-inch box nursery tree in this area. Note that the values produced for this report are meant for reference only and may not reflect the true value of the tree that could be calculated by a thorough and more detailed analysis of each individual tree.

- a) **Caveats regarding tree values:** The values in this report have not been subjected to a “reasonableness test” which compares the value of trees and landscaping to the total value of the property. The values in the report were calculated quickly and are intended to be approximate and for reference only. Research on tree and landscape values has shown that landscaping can contribute up to 20% of the total property value. In some cases however, tree appraisals have produced tree values that exceed the value of the entire property. Performing a reasonableness test screens for this error. For certain trees in this report I have decreased or increased tree values when I felt that the calculated values were too high or too low.
- b) **The Trunk Formula Method** is used for trees that are too large for practical replacement with a similar size nursery container-grown tree. This method applies to trees with trunk diameters that are larger than 8-inches, measured at 12 inches above the ground. For the purpose of this report, all trees with trunk diameters of 8 inches or greater measured at DBH (4.5 feet above the ground) are appraised by this method.
- c) **The Replacement Cost Method** is used for smaller trees with trunk diameters up to 4-inches in diameter measured at 12 inches above the ground. This is generally equivalent to a 48-inch box-size tree. The replacement cost for such a tree shall be the average wholesale cost of the tree multiplied by two to include transportation to the site, planting and other costs. This price is then adjusted (usually downward) based upon the Condition ratings percentages for the appraised tree. For the purpose of this report, all trees with trunk diameters of 7 inches or less measured at DBH (4.5 feet above the ground) are appraised by this method. The following cost basis is used (based upon the average of wholesale tree prices from Boething Treeland Nursery, Portola Valley and Valley Crest Tree Nursery, Sunol, 2/2/2015):

<b>Trunk DBH</b>	<b>Replacement tree size</b>	<b>Replacement Tree Wholesale Cost x 2 (for installation, etc.)</b>
<1” to 1”	15 gallon	\$47.50 x 2 = \$95
2-3”	24” box	\$162.50 x 2 = \$325
4-5”	36” box	\$412.50 x 2 = \$825
6-7”	48” box	\$900 x 2 = \$1800

- d) **Tree values for tree protection bonds:** Prior to commencing work, the tree-regulating authority may require that the contractor furnish a bond equal to some portion of the total appraised value of the trees on the site based upon the values presented in the Arborist Report. Bond money will be returned to the contractor upon the completion of the project with deductions or additional fines imposed based upon tree protection compliance and the final condition of the trees. Tree values are often used to establish a benchmark amount to fine the contractor if non-



compliance with the Tree Protection Specifications or other negligence causes a subject tree to be removed or unnecessarily damaged. The full value amount should be charged to the contractor if a tree is damaged to the degree that it must be removed. A portion of the value of the tree plus any necessary remediation costs, as determined by the tree owner, should be charged to the contractor if the tree is damaged but does not have to be removed.

9) **Action (Disposition):**

- a) **Save:** it should be no problem save this tree utilizing standard tree protection measures.
- b) **Remove:** this recommendation is based upon tree condition, preservation suitability, expected impact of construction, poor species for the site or any combination of these factors.
- c) **Debatable:** there is a problem with potentially retaining this tree. Find out why in the *Reason* and *Notes* columns of the Complete Tree Table. Examples are:
  - The tree is shown to be saved (and may be a desirable tree to save) but proposed construction is too close or is uncertain and may cause too much damage to retain the tree. Design changes may be recommended to reduce damage to the tree so that it can be saved.
  - Further evaluation of the tree is necessary (e.g. the tree requires further, more detailed evaluation that is beyond the scope of this tree survey and report. Examples are advanced internal decay detection and quantification with resistance drilling or tomography, a “pull test” to assess tree stability from the roots, or tissue samples sent to a plant pathology laboratory for disease diagnosis.
  - Condition: the tree is in “so-so” or lesser condition and an argument could be made to either save or remove the tree as it stands now. In some cases the owner will make the decision to save or remove the tree based upon the information provided in this report as well as the owner’s own preferences.
  - Species: the tree may be a poor species for the area or the intended use of the developed site.
  - Uncertain construction impact
  - Other (as explained for the individual tree)

10) **Reason** (for tree removal or to explain why a tree is listed as “Debatable” or “Uncertain”). Multiple reasons may be provided, with the most significant reason listed first. Reasons can include but are not limited to:

- **Construction** (excessive construction impact is unavoidable and it is not worthwhile to try and save the tree)
- **Condition** (e.g. poor tree condition – either *vigor*, *structure* or both)
- **Landscaping** (the tree is being removed because it does not fit in with or conflicts with proposed new landscaping)
- **Owner’s Decision** (for some reason the owner has decided to remove this tree)
- **Species** (the tree is a poor species for the use of the site)
- **Risk** (the tree presents moderate to excessive risk to people or property that cannot be sufficiently mitigated)



- 11) **Notes:** This may include any other information that would be helpful to the client and their architects and contractors within the scope of work for this report, such as a more detailed explanation of tree condition or expected construction impact.
- 12) **Tree Protection Distances** (Also see pages 24 and 25 for a more detailed explanation).
- a) **Root Protection:**
- i) **3 and 5xDBH:** Both the 3 and 5xDBH distances are listed for each tree. For multi-trunk trees 100% of the DBH of the largest trunk is added to 50% of the DBH for all other trunks in order to compute the operational DBH to use for these the Tree Protection Distance calculations. For practical purposes, the minimum root protection distance listed is 5 feet. If disturbance cannot be kept at least 3 feet from the trunk of a tree, the tree should normally be removed.
  - ii) **OTPZ (Optimum Tree Protection Zone):** This is calculated as per the text, *Trees & Development*, Matheny et al., International Society of Arboriculture, 1998. This method takes into account tree age and the particular tree species tolerance of root disturbance. Because it may not be possible to maintain the OTPZ distance recommended for trees on many projects due to crowded site conditions, the Arborist may omit this requirement and list only the 3 and 5xDBH distances.
- b) **Canopy Protection:** Additional space beyond root zone protection distances may be necessary for canopy protection.
- c) **I have increased a few of the calculated tree protection distances** for individual trees based upon my professional judgment relative to site constraints. For example, the minimum root protection distance listed is 5 feet.

## TREE PROTECTION DISTANCES

### 3 TO 5 X DBH

No one can estimate and predict with absolute certainty how far a soil disturbance such as an excavation must be from the edge of the trunk of an individual tree to affect tree stability or health at a low, moderate or severe degree -- there are simply too many variable involved that we cannot see or anticipate. 3xDBH however, is a reasonable "rule of thumb" minimum distance (in feet) any excavation should be from the edge of the trunk on one side of the trunk. This is supported by several separate research studies including (Smiley, Fraedrich, & Hendrickson 2002, Bartlett Tree Research Laboratories. DBH is trunk "diameter at breast height" (4.5 feet above the ground). This distance is often used during the design and planning phases of a construction project in order to estimate root damage to a tree due to the proposed construction. It tends to correlate reasonably well with the zone of rapid taper, which is the area in which the large buttress roots (main support roots close to the trunk) rapidly decrease in diameter with increasing distance from the trunk. For example, using the 3X DBH guideline an excavation should be no closer than 4.5 feet from the trunk of an 18-inch DBH tree. Such distances are guidelines only, and should be increased for trees with heavy canopies, significant leans, decay, structural problems, etc. It is also important to understand that in actual field conditions we often find that much less root damage occurs than was anticipated by the guidelines. 3xDBH may be more of



an aid in preserving tree stability and not necessarily long-term tree health. 5X DBH or greater is the "preferred" minimum distance which should be strived for, and this distance or greater should probably be used when there are multiple trenches on more than one side of the trunk. The roots beyond the zone of rapid taper form an extensive network of long, rope-like roots one to two inches in diameter. These woody perennial roots are referred to as *transport roots* because they function primarily to transport water and minerals. Maintaining a 5xDBH tree protection zone or greater around a tree will preserve more of these transport roots, which will have less of an impact on tree health than if the excavation were closer to the trunk.

## OTPZ (OPTIMUM TREE PROTECTION ZONE)

OTPZ is the distance in feet from the trunk of the tree, all around the tree, that construction or other disturbance should not encroach within. If this zone is respected, then chances of the tree surviving construction disturbance are very good. This method takes into account tree age, DBH and the particular species tolerance to root disturbance. Although there are no scientifically based methods to determine the minimum distance for construction (for example, root severance) from trees to assure their survival and stability, there are some guidelines that are often used in the arboricultural industry. The most current guideline comes from the text, Trees & Development, Matheny et al., International Society of Arboriculture, 1998. The tree protection zone calculation method in this text was used to obtain the OTPZ's provided in this report. Due to the crowded, constrained nature of many building sites it is often not possible to maintain the OPTZ distance recommended for many of the trees -- therefore I have also listed alternate distances of 3 and 5X DBH (*see paragraph above*).

*Note that by default, the minimum root protection distance listed for any tree is 5 feet.*

## CITY OF SARATOGA TREE PROTECTION REQUIREMENTS

2014

- 1) **Any time the canopy of a tree protected by City Code extends into an area of proposed construction or is within 5 feet of the proposed work area** an *Arborist Report* and a *Tree Preservation Plan* area required.
- 2) **Protected trees are:**
  - a) All trees – when the trunk diameter at 4.5 feet above the ground (DBH) is **10 inches or more** (includes all species, dead trees and fallen trees).
  - b) Native species – when the trunk diameter (DBH) is **6 inches or more**. Native species include but are not limited to: coast live oak, valley oak, blue oak, redwood, Douglas fir, bigleaf maple and California buckeye.



- c) For additional protected trees see City Code 15-50-.050.
- 3) **Saratoga City Code:** <http://library.municode.com/index.aspx?clientId=16616>. Tree Regulations are Article 15-50.
- 4) **This Arborist Report is to be copied onto plan sheet(s)** and become part of the final project plan set. This sheet(s) shall be titled, *Tree Preservation Plan*.
- 5) **The owner, general contractor, architects and property owner are all responsible** for knowing the information included in the Arborist Report and adhering to the tree protection conditions provided.
- 6) **The Designated Project Arborist** for this development is Name, Company, City, Phone Number and Email Address.
- 7) **The Project Arborist shall visit the site to inspect tree protection** no less than once a week during demolition and grading and no less than once per month during all other times, until the project has been completed. The Project Arborist shall submit a Tree Protection Inspection Report to City Arborist Kate Bear as soon as possible after each inspection. The report shall state whether or not tree protection is adequate or needs improvement, and any mitigation measures that are recommended for the protected trees.
- 8) **The Project Arborist shall supervise any work that must occur within the tree protection zone**, and a follow-up report shall be provided to the Saratoga City Arborist.
- 9) **Any time that work must be supervised by the Project Arborist, a follow-up report shall be provided** to the Saratoga City Arborist documenting how the work was carried out and any necessary mitigation requirements.
- 10) Tree Protection Fencing Requirements:**
- a) Six-foot high chain link fencing mounted on eight-foot tall, 2-inch diameter galvanized posts, driven 24 inches into the ground and spaced no more than 10 feet apart.
- b) Posted with signs reading, "TREE PROTECTION FENCE – DO NOT MORE OR REMOVE WITHOUT APPROVAL FROM CITY ARBORIST". Print these signs at a minimum size of 8.5 x 11 inches, laminate them and attach them to the fencing by punching 4 holes in each corner, and then attaching the sign to the fence with plastic wire ties in each of the holes. Place the signs 6 inches below the top of the fencing. Place signs every 25 feet or in each cardinal direction, whichever is less, facing the work zone.
- c) The City requires that tree protection fencing be installed before any equipment comes on site. The fencing must be inspected and approved by the City Arborist before issuance of demolition and/or building permits.
- d) Tree protection fencing is required to remain in place throughout construction.

#### TREE PROTECTION ZONE

The tree protection zone is the distance from the trunk to a point that is five feet beyond the canopy of a tree protected by City Code. Tree protection fencing shall be located as close to this location as possible while allowing room for construction to occur.



**11) Other Tree Protection Measures:**

- a) The arborist report, once copied onto a plan sheet(s) and included in the final set of plans, serves as a Tree Preservation Plan (City Code 15-50.140).
- b) Any additional conditions needed to adequately protect trees during construction.
- c) Any branch or root pruning must be supervised by an ISA-certified arborist or the Project Arborist.
- d) Dealing with Roots: where a grade cut will take place underneath or within 5 feet of the dripline of a protected tree, a trench 18 inches wide and to the depth of the total excavation must be hand-dug. Roots will be cleanly cut within this trench by the project arborist, who will then make an assessment of the total root damage and report this to City Arborist Kate Bear. The project arborist must be on site when the trench is dug. The arborist shall file a report with Kate Bear documenting how the work was carried out and any necessary mitigation requirements. After the trench is dug and roots are hand cut, heavy equipment can then excavate for the remainder of the excavation as the equipment does not contact the intact ends of the cut roots. Cutting the roots twice, to create a gap of about 6 inches between the intact and cut portions of the roots will facilitate protecting the cut root ends.
- e) A final inspection by the City Arborist is required at the end of the project. This is to be done before tree protection fencing is taken down. Replacement trees should be planted at this time as well.
- f) The tree protection fencing and signage described above as well as Saratoga's other tree protection requirements, are explained in the attached document, *Tree Protection Requirements for Projects in Saratoga*.

**12) A Tree Protection Security Deposit on trees to be retained** during construction and potentially impacted by work is required. The deposit is between 25% and 100% of the total appraised value of the trees potentially impacted. The owner/applicant will be required to obtain, and file with the Community Development Director, this Tree Protection Security Deposit prior to obtaining Building Division Permits.

- a) If there will be more than one structure on the property, the deposit must be equal to 100% of the value of the trees potentially impacted (City Code 15-50.080(d)). If only one structure will be built, the deposit will be .
- b) The Tree Protection Security Deposit is to remain in place for the duration of construction of the project to ensure the protection of the trees.
- c) Once the project has been completed, inspected and approved by the City Arborist (a building inspector cannot release the Tree Security Deposit), the bond will be released.
- d) Any tree on site protected by City Code will require replacement according to its appraised value if it is damaged beyond repair as a result of construction.

**13) Replacement tree requirements**

- a) Height at maturity if tall trees are being removed
- b) native species if natives are being removed
- c) whether new trees should be planted in the front yard or anywhere on the property



- d) The City requires that new trees equal to the total appraised value of trees approved for removal be planted on site, or that some or all of the value to be placed in a fund for tree planting elsewhere in the City.
- e) Replacement values have been assigned to specific sizes of trees as follows:  
15 gal - \$150, 24-inch box - \$500, 36-inch box - \$1500, 48-inch box - \$5000, 60-inch box - \$7000, 72-inch box - \$15,000

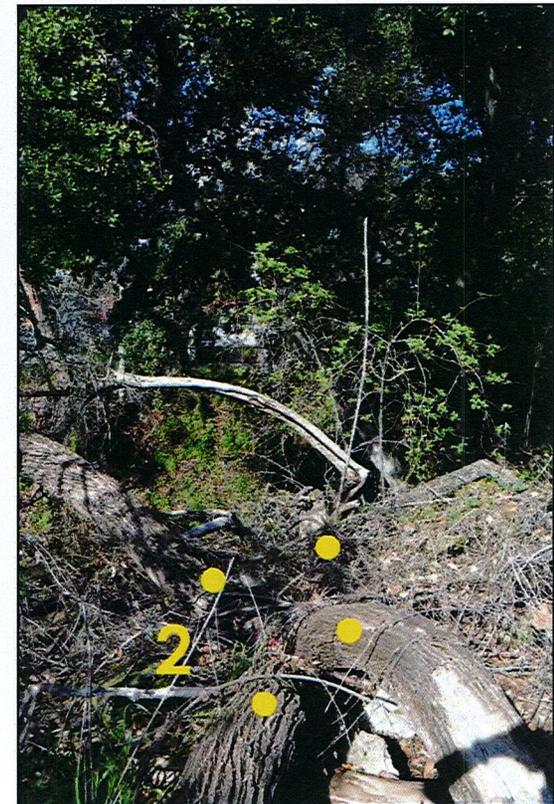
## TREE PHOTOS



West perimeter of the site and northwest corner, Lot 1. From left to right: fallen and mostly dead **elderberry #2**, **coast live oak #3** and **4**, **elderberries #5, 6 and 7**, **coast live oak #8**, and **California sycamore #9**.



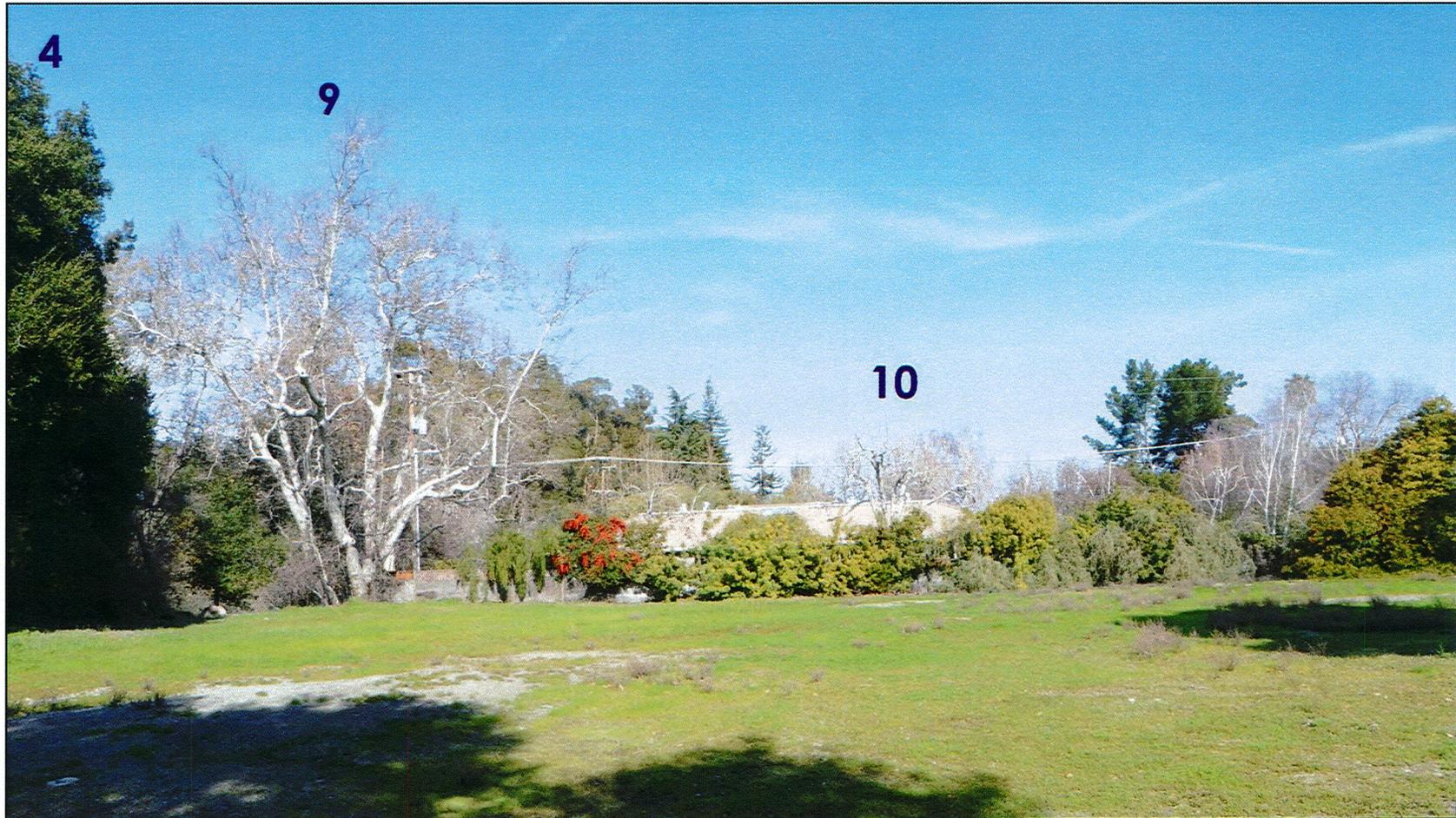
**Elderberry #2**, which probably does at least sprawl over a portion of the project site at the southwest corner.



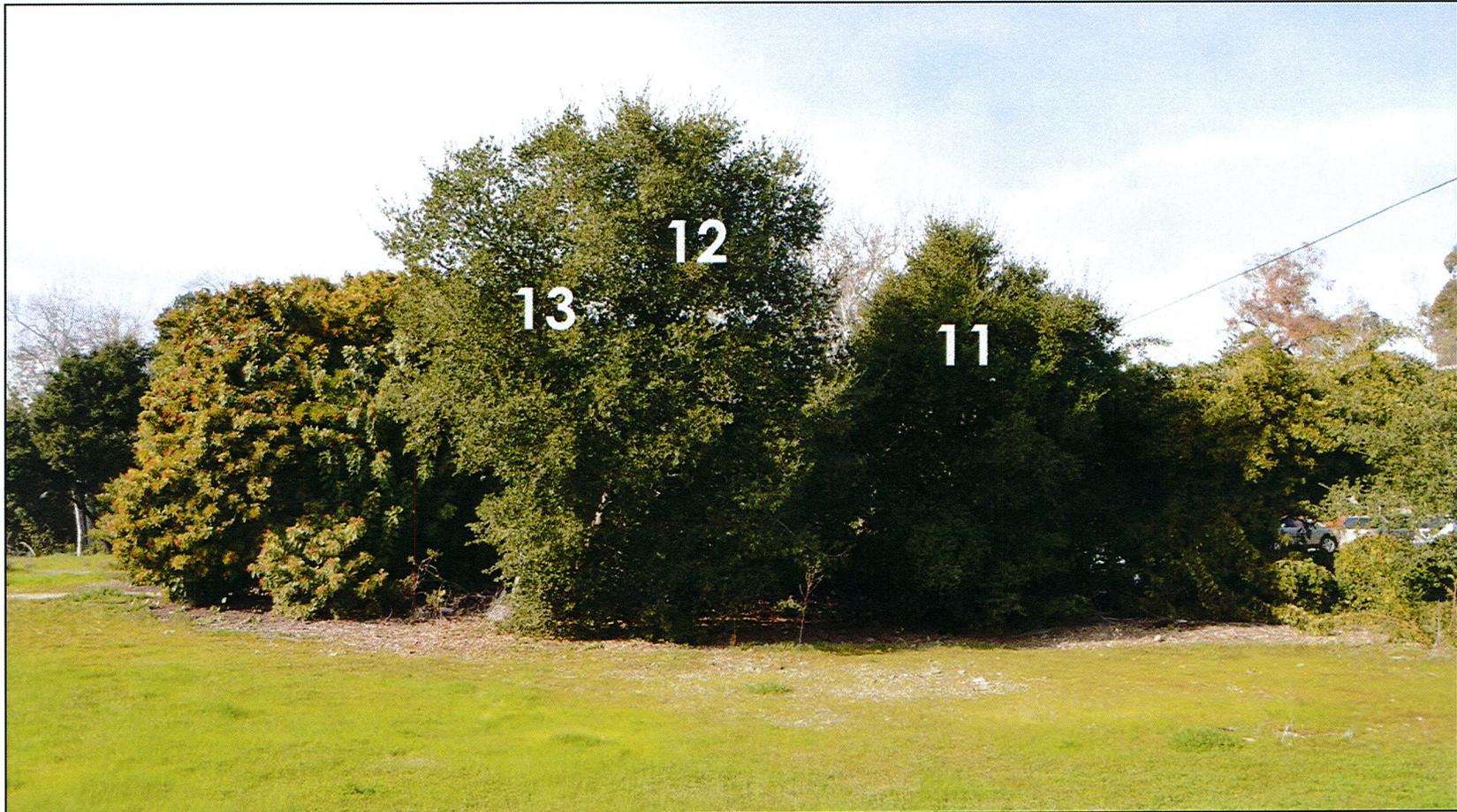
Close-up of fallen trunks of **elderberry #2**. I have placed a yellow dot near the base of each trunk.



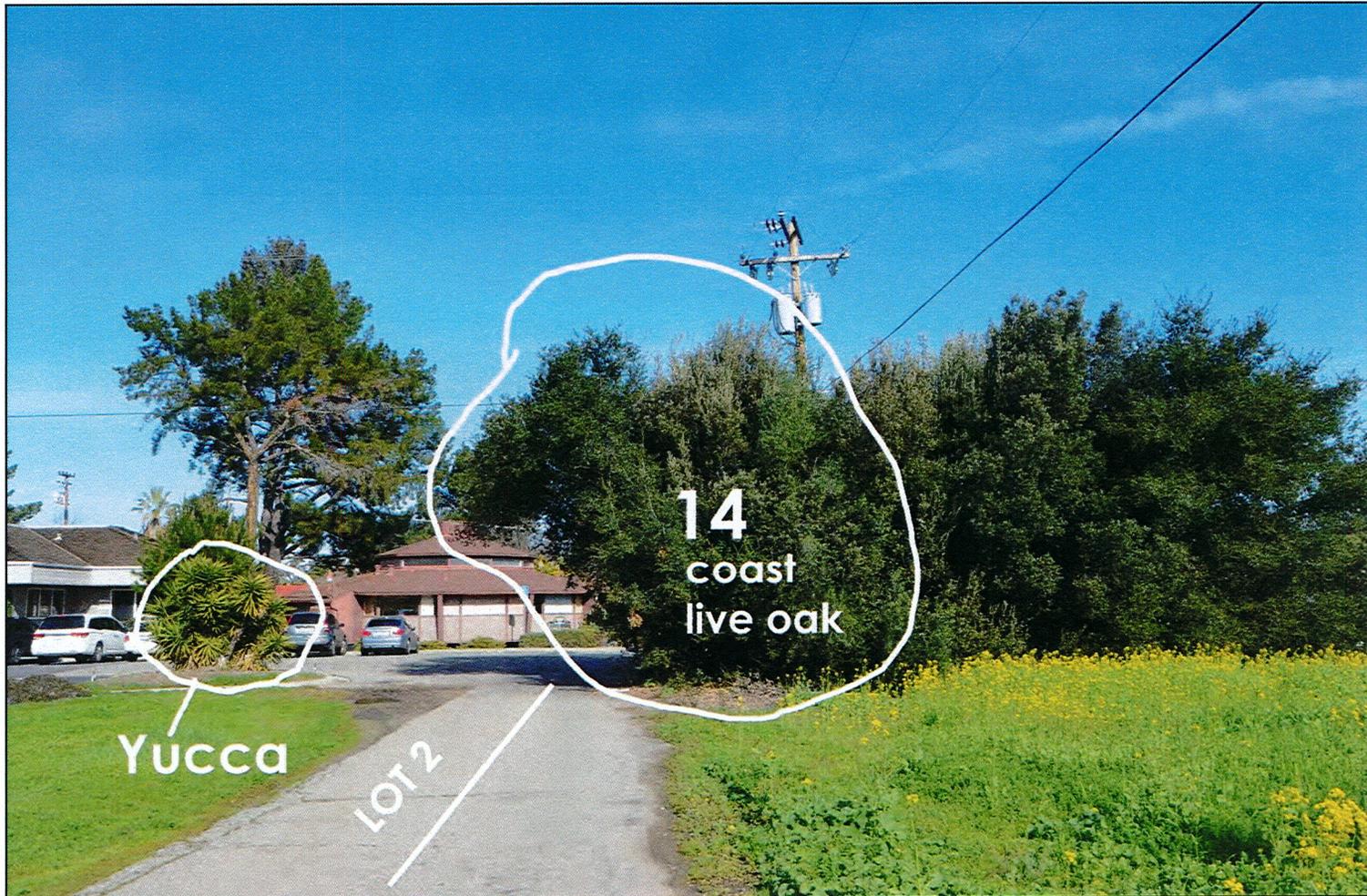
**Coast live oak #3** and the problem with the decay in one of its two trunks, the trunk leaning over the project site. The left photo shows the decayed area circled. The right photo shows a close-up of the decay. There is a lot of internal decay here, because there is a bird nest inside. The weight of the canopy is above this decayed portion.



North perimeter of the site, Lot 1. Left to right: the edge of large **coast live oak #4**, **California sycamore #9** and **London plane #10**.



The west perimeter of Lot #2, viewed from the west. **Coast live oaks #11, 12 and 13.** All three of these trees will be removed because they will be within the extension of Saratoga Creek Drive.



The northeast corner of Lot 2. **Coast live oak #14** overhangs the site slightly



## **TREE REMOVAL CRITERIA, CITY OF SARATOGA**

**Criteria.** Each application for a tree removal pruning or encroachment permit shall be reviewed and determined on the basis of the following criteria:

1. The condition of the tree with respect to disease, imminent danger of falling, proximity to existing or proposed structures and interference with utility services, and whether the tree is a Dead tree or a Fallen tree.
2. The necessity to remove the tree because of physical damage or threatened damage to improvements or impervious surfaces on the property.
3. The topography of the land and the effect of the tree removal upon erosion, soil retention and the diversion or increased flow of surface waters, particularly on steep slopes.
4. The number, species, size and location of existing trees in the area and the effect the removal would have upon shade, privacy impact, scenic beauty, property values, erosion control, and the general welfare of residents in the area.
5. The age and number of healthy trees the property is able to support according to good forestry practices.
6. Whether or not there are any alternatives that would allow for retaining or not encroaching on the protected tree.
7. Whether the approval of the request would be contrary to or in conflict with the general purpose and intent of this Article.
8. Any other information relevant to the public health, safety, or general welfare and the purposes of this ordinance as set forth in [Section 15-50.010](#)
9. The necessity to remove the tree for economic or other enjoyment of the property when there is no other feasible alternative to the removal.
10. The necessity to remove the tree for installation and efficient operation of solar panels, subject to the requirements that the tree(s) to be removed, shall not be removed until solar panels have been installed and replacement trees planted in conformance with the City Arborist's recommendation.



## **ASSUMPTIONS & LIMITATIONS**

1. **A Basic Evaluation of the subject trees described in this report was performed on July 23, 2015 for the purpose of this report.** Trees were briefly rechecked on January 26, 2016 for this current report and coast live oaks #11-14 were added. A basic evaluation is a visual evaluation of the tree from the ground, without climbing into the tree or performing detailed tests such as extensive digging, boring or removing samples. This is an initial screening of the tree after which the evaluator may recommend that additional, more detailed examination(s) be performed if deemed necessary.
2. **Trees on neighboring properties other than those specifically mentioned in this report were not evaluated in detail.** They were only viewed cursorily from the project site. I did not enter the neighboring property to inspect these trees up close.
3. **Some trees had their root collars and or lower trunks covered** with soil, vegetation or debris and were obstructed from view when I conducted my tree evaluation. If these trees may remain, the obstructions should be removed and I should re-examine these previously covered areas.
4. **Any information and descriptions provided to me for the purpose of my investigation in this case and the preparation of this report are assumed to be correct.** Any titles and ownerships to any property are assumed to be good and marketable. I assume no responsibility for legal matters in character nor do I render any opinion as to the quality of any title.
5. **The information contained in this report covers only those items that were examined** and reflects the condition of those items at the time of inspection.
6. **Loss or removal of any part of this report** invalidates the entire report.
7. **Possession of this report, or any copy thereof, does not imply right of publication** for use for any purpose by any person other than to whom this report is addressed without my written consent beforehand.
8. **This report and the ratings or values represented herein represent my opinion.** My fee is in no way contingent upon the reporting of a specified value or upon any finding or recommendation reported.
9. **This report has been prepared in conformity with generally acceptable appraisal/diagnostic/reporting methods and procedures** and is consistent with practices recommended by the International Society of Arboriculture and the American Society of Consulting Arborists.
10. **My evaluation of the trees that are the subject of this report is limited to visual examination of accessible items without dissection, excavation, probing or coring.** There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.
11. **I take no responsibility for any defects in any tree's structure.** No tree described in this report has been climbed and examined from above the ground, and as such, structural defects that could only have been discovered have not been reported, unless otherwise stated. Structural defects may also be hidden within a tree, in any portion of a tree. Likewise, **root collar excavations and evaluations** have not been performed unless otherwise stated.



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12. **The measures noted within this report are designed to assist in the protection and preservation of the trees mentioned herein**, should some or all of those trees remain, and to help in their short and long term health and longevity. This is not however; a guarantee that any of these trees may not suddenly or eventually decline, fail, or die, for whatever reason. Because a significant portion of a tree's roots are usually far beyond its dripline, even trees that are well protected during construction often decline, fail or die. Because there may be hidden defects within the root system, trunk or branches of trees, it is possible that trees with no obvious defects can be subject to failure without warning. The current state of arboricultural science does not guarantee the accurate detection and prediction of tree defects and the risks associated with trees. There will always be some level of risk associated with trees, particularly large trees. It is impossible to guarantee the safety of any tree. Trees are unpredictable.

\*\*\*\*\*

I certify that the information contained in this report is correct to the best of my knowledge, and that this report was prepared in good faith. Thank you for the opportunity to provide service again. Please call me if you have questions or if I can be of further assistance.

Sincerely,

Deborah Ellis, MS.

Consulting Arborist & Horticulturist

Certified Professional Horticulturist #30022

ASCA Registered Consulting Arborist #305

I.S.A. Board Certified Master Arborist WE-457B

I.S.A. Tree Risk Assessment Qualified



**Enclosures:**

- *Saratoga Tree Protection Sign* template (to be placed on tree protection fencing)
- *Keeping Native Calif. Oaks Healthy*. Hagen. June 1990. California Department of Forestry & Fire Protection. Tree Notes #7.



## GLOSSARY

1. **Directional pruning** for overhead utility line clearance means that only the branches directly interfering with the wires are removed. Branches cut back to the trunk or to lateral branches at least 1/3 the diameter of the parent branch. This is in contrast to *topping* where the entire top of the tree is cut back to some predetermined height below the power lines, or heading cuts where individual branches are cut back to some predetermined height with no regard to the future tree structural problems that this will cause.
2. **Dripline**: the area under the total branch spread of the tree, all around the tree. Although tree roots may extend out 2 to 3 times the radius of the dripline, a great concentration of active roots is often in the soil directly beneath this area. The dripline is often used as an arbitrary "tree protection zone".
3. **Included bark** is bark sandwiched between adjacent branches, a branch and the trunk, or two or more trunks, often appearing as a seam. In contrast, a normal attachment will have a ridge of bark protruding upwards and a continuous wood connection between adjacent members. An included bark branch or trunk attachment is weaker than a normal attachment. As branches or trunks with included bark grow, they expand in diameter, squeezing the bark along the seam. This may kill some portion of the included bark. When this occurs, a wound response is initiated. As a consequence, cracks can be generated, leading to breakage. Such defects can often be completely removed when a tree is young (e.g. the offending members equal or less than 2 inches in diameter). Older, larger cuts (such as 6 inches in diameter or more) could cause decay to spread into the remaining member, which is undesirable. In these cases it may be best to thin one member (usually the smaller member) by 25% to slow its growth and ultimate size.
4. **Project Arborist**. The arborist who is appointed to be in charge of arborist services for the project. That arborist shall also be a *qualified consulting arborist* (either an International Society of Arboriculture (ISA) Board-Certified Master Arborist or an American Society of Consulting Arborists (ASCA) Registered Consulting Arborist) that has sufficient knowledge and experience to perform the specific work required. For most construction projects that work will include inspection and documentation of tree protection fencing and other tree protection procedures, and being available to assist with tree-related issues that come up during the project.
5. **Qualified Consulting Arborist**: must be either an International Society of Arboriculture (ISA) Board-Certified Master Arborist or an American Society of Consulting Arborists (ASCA) Registered Consulting Arborist that has sufficient knowledge and experience to perform the specific work required.
6. **Qualified Tree Service**: A tree service is a company that performs tree pruning and tree removals as their main business. A *Qualified Tree Service* is a tree service with a supervising arborist who has the minimum certification level of ISA (International Society of Arboriculture) Certified Arborist and acts in a supervisory position on the job site during execution of the tree work. The tree service shall have a State of California Contractor's license for Tree Service (C61-D49) and provide proof of Workman's Compensation and General Liability Insurance. The person(s) performing the tree work must adhere to the most current of the following arboricultural industry tree care standards:
  - *Best Management Practices, Tree Pruning*. 2008. International Society of Arboriculture, PO Box 3129, Champaign, IL 61826-3129. 217-355-9411
  - *ANSI A300 Pruning Standards*. 2008 Edition. Ibid. (Covers tree care methodology).
  - *ANSI Z133.1 Safety Requirements for Arboricultural Operations*. 2006 Edition. Ibid. (Covers safety).



7. **Root collar & root collar excavation and examination:** The *root collar* (junction between trunk and roots) is critical to whole-tree health and stability. A root collar excavation carefully uncovers this area (with hand digging tools, water or pressurized air). The area is then examined to assess its health and structural stability. Buttress roots may be traced outward from the trunk several feet. Decay assessment of the large roots close to the trunk (buttress roots) involves additional testing such as drilling to extract interior wood with a regular drill, or the use of a resistance-recording drill to check for changes in wood density within the root; as would be caused by decay or cavities. It is important to note that root decay often begins on the underside of roots, which is not detectable in a root collar excavation unless the entire circumference of the root is excavated and visible. Drill tests may detect such hidden decay. Note that it is not possible to uncover and evaluate the entire portion of the root system that is responsible for whole-tree stability. Decayed roots that are inaccessible (e.g. underneath the trunk) can be degraded to the extent that the whole tree may fail even though uncovered and examined roots in accessible locations appear to be sound.
8. **Root rot disease** is caused by wet, poorly aerated soil conditions. Degradation of roots (root rot) and sometimes the lower trunk (crown rot) ensues on weakened, susceptible plant species not adapted to such a soil environment. Opportunistic plant root pathogens (such as watermold fungi) are often the secondary cause of the problem. Root rot is a particular problem among drought tolerant plants that are not adapted to frequent irrigation during our normally rain-free months, such as many of our California native plants. The problem is often worsened in fine-textured heavy clay soils that retain water more than do the coarser, fast-draining soils such as occur in the natural environment of many of our native plants.
9. **Scaffold branch:** a primary structural branch arising from the trunk of a tree. Usually the largest and often the lowest branches of the tree.
10. **Stub:** a short length of branch remaining following the removal of a branch through pruning, versus the more correct method of cutting a branch back to just beyond the branch collar and branch bark ridge. Leaving stubs in trees is generally a poor practice. A stub can also be created naturally, through a branch failure that leaves a portion of the branch still attached to the trunk or parent branch.
11. **Stump sprout trees** are the result of a tree trunk being cut down to a short stump close to the ground. If the tree survives, it sends out many small shoots (suckers) from around the cut stump. Some of these suckers may survive and grow to become significant trunks. These trunks are spaced very close together and usually have included bark between them, which reduces the strength of their union. Such trunks are prone to failure. Stump sprout trees can be very structurally unsound, particularly as they become large and old. There is often a great deal of decay associated with the mother stump, which can also reduce mechanical stability.
12. **Summer Dry:** Our native oak species are adapted to our "summer dry" climate. When the soil in their root system is kept moist during our normally dry months, these oaks are predisposed to attack by fungal root rot pathogens that are usually present in our soils. Therefore it is important to keep irrigation as far from the tree trunk (preferably beyond the mature dripline) as possible. The best landscape treatment underneath native oaks is non-compacted soil covered with a 3 to 4-inch depth of oak wood, leaf and twig litter (the tree's natural litter). Keep this mulch 6 to 12 inches away from the root collar (junction of trunk and roots). An exception to the no summer water rule would be newly planted oaks (for the first 2 to 3 years after planting, until they are "established") and also during droughts that occur during the normal rainy season.

## **APPENDIX C2**

*Arborist Report for Palm Villas Saratoga Project:  
November 14, 2016*





Michael Sneider  
3333 S. Bascom Avenue  
Campbell, CA 95008

November 14, 2016

**Arborist Report #3**  
**Palm Villas, Saratoga – review of revised plans relative to existing tree impacts**

Dear Michael:

Your project architect, Tom Sloan of Metro Design Group, provided me with the following plans listed below that I have reviewed. These plans are dated November 8, 2016. This is my third arborist report for this project. My previous reports are dated January 29, 2016 and July 27, 2015.

**Lot 1:**

C-1 Conceptual Grading & Drainage  
C-2 Drainage & Erosion Control Notes & Details  
A-1.2 Proposed Site Development Plan  
A-3.1, 3.2 Proposed Elevations Lot 1  
A-4.0 Proposed Roof Plan  
A-5.0 Sections (building and site)  
L-1.0 Landscape Plan

**Lot 2:**

The same sheets as above, minus sheet C-2

I had the following comments on the expected impact of construction to trees, relative to the plans. These comments have been addressed in your revised plan sheets A1.2, C-1 and L1.0 dated November 9, 2016. My comments relative to the revisions on the November 9 plan sheets are in **bold font**.

Four trees are proposed for removal:

- #9 California sycamore (25, 18, 19 and 8" trunk diameters). **We will attempt to save this tree if possible. See explanation page 2. So now only 3 trees are definitely proposed for removal.**
- #11, 12 and 13 coast live oaks (6 – 10" trunk diameters)



#1 Coast live oak (20") (Lot 1):

1. Sheet C-1: the tree protection fencing must extend all around the entire dripline of the tree, not just on one side. **Plans have been changed to show fencing all around the tree.**
2. All site-based sheets: the proposed roadway on the east side of the trunk is too close at 7.5 feet. Move the roadway at least another foot away in order to maintain the minimum 8 feet of undisturbed soil between improvement and trunk. **Portion of roadway near this tree has been eliminated.**
3. L-1.0: omit all planting within the landscape area including this oak tree. Instead, specify that a 3 to 4-inch depth of coarse wood or bark chips or tree trimming chippings will be spread on the ground surface throughout the planter where this tree is located. **Done.**

#9 California sycamore (15, 18, 19 & 8"): **the plan is to try to save this tree if possible, but we will not know this is possible until further along in the design and construction of the building. Story posts will be erected to assess the effect on canopy of construction clearance pruning, to see if it is really practical and reasonably safe to retain this tree. I am informed that the excavation for the building will be without any over-excavation, which is good. The building is currently shown to be 16 feet from the trunk(s) of the tree, but we will have to wait and see how this actually plays out in the field since there are 4 trunks and only one is shown on the plans. It is possible that the excavation will actually be too close to the trunks of this tree and it would be better (from a safety standpoint) to remove the tree. The proposed sidewalk is shown at 12 feet from the trunk, which is the minimum root protection distance recommended for this tree. Again, we will have to see how this actually plays out in the field since there are 4 trunks and only one is shown on the plans. It is possible that the excavation will actually be too close to the trunks of this tree and it would be better (from a safety standpoint) to remove the tree. The effect of the actual excavation on roots of this tree should also be carefully monitored by the project arborist in the field, should the tree remain at the time of the building foundation excavation. The proposed sidewalk along the building should be built atop existing grade and should be composed of permeable material such as decomposed granite, to further reduce root damage to the tree.**

#10 London plane (sycamore) (18") (Lot 1): All site based plans: tree is 15 feet from proposed building. Some pruning may be necessary in order to construct the building. Use story posts to assess pruning requirements.



\*\*\*\*\*

I certify that the information contained in this report is correct to the best of my knowledge, and that this report was prepared in good faith. Thank you for the opportunity to provide service again. Please call me if you have questions or if I can be of further assistance.

Sincerely,

Deborah Ellis, MS.

Consulting Arborist & Horticulturist

Certified Professional Horticulturist #30022

ASCA Registered Consulting Arborist #305

I.S.A. Board Certified Master Arborist WE-457B

I.S.A. Tree Risk Assessment Qualified



**Cc:** Kate Bear, City Arborist of Saratoga



# **APPENDIX C3**

*Arborist Report for Palm Villas Saratoga Project:  
December 4, 2017*





Community Development Department  
City of Saratoga  
13777 Fruitvale Avenue  
Saratoga, California 95070

## ARBORIST REPORT

Prepared by Kate Bear, City Arborist  
Phone: (408) 868-1276  
Email: [kbear@saratoga.ca.us](mailto:kbear@saratoga.ca.us)

Application No. **ARB15-0053**  
Site: **Palm Villas – Saratoga Creek Drive**  
Owner: Golden Age Properties  
APN: 389-06-020  
and 389-06-021  
Email: [michaelsneper@gmail.com](mailto:michaelsneper@gmail.com)

**Report History:** Final report - corrected

**Date:** December 4, 2017

### PROJECT SCOPE:

The applicant has submitted plans to build a new assisted care facility with two buildings, one on each parcel. Each building will be two stories and have underground parking.

Three coast live oaks (trees **11, 12, 13, 15** and **16**) are requested for removal to construct the project.

**STATUS:** Approved by City Arborist, with attached conditions.

### PROJECT DATA IN BRIEF:

Tree bond –	Required - \$96,000
Tree fencing –	Required – See Conditions of Approval and attached map.
Tree removals –	Trees <b>11, 12, 13, 15</b> and <b>16</b> are approved for removal and replacement once building permits have been issued.
Replacement trees –	Required = \$11,700

### ATTACHMENTS:

- 1 – Findings
- 2 – Tree Removal Criteria
- 3 – Conditions of Approval
- 4 – Map Showing Tree Protection

**FINDINGS:**Tree Removals

According to Section 15-50.080 of the City Code, whenever a tree is requested for removal as part of a project, certain findings must be made and specific tree removal criteria met. Three coast live oaks (trees **11**, **12** and **13**) and two Brazilian peppers (trees **15** and **16**) are requested for removal to construct the project. All of these trees meet the City's criteria allowing them to be removed and replaced as part of the project, once building division permits have been obtained. Attachment 2 contains the tree removal criteria for reference.

**Table 1: Summary of Tree Removal Criteria that are met**

<b>Tree No.</b>	<b>Species</b>	<b>Criteria met</b>
11, 12, 13	Coast live oak	1, 7, 9
15, 16	Brazilian pepper	1, 7, 9

New Construction

Based on the information provided, and as conditioned, this project complies with the requirements for the setback of new construction from existing trees under Section 15-50.120 of the City Code.

Tree Preservation Plan

Section 15-50.140 of the City Code requires a Tree Preservation Plan for this project. To satisfy this requirement the following shall be copied onto a plan sheet and included in the final sets of plans:

- 1) The submitted arborist report dated January 29, 2016; and
- 2) This report dated March 31, 2017.

**TREE INFORMATION:**Arborist reports reviewed:

Preparer: Deborah Ellis, Consulting Arborist and Horticulturist

Dates of Reports: July 27, 2015, January 29, 2016, November 14, 2016

Arborist reports were submitted for this project that inventoried 16 trees protected by Saratoga City Code. Information on the condition of each tree, potential impacts from construction, suitability for preservation, appraised values and tree protection recommendations was provided. Three coast live oaks (trees 11, 12 and 13) and two Brazilian peppers (trees 15 and 16) protected by Saratoga City Code are requested for removal to construct this project. A table summarizing information about each tree is below.

Table 2: List of trees and appraised values



Deborah Ellis, MS

Consulting Arborist & Horticulturist

**TABLE 1 SUMMARY TREE TABLE**

Tree #	Common Name	Trunk Diam. (DBH)	Preservation Suitability	Estimated Value	Expected Construction Impact	Action	Reason
1	coast live oak	20 (2.5)	Good	\$7,200	Moderate	Save	
2	blue elderberry	9,10,8,4,4	Poor/Unacceptable	480	Uncertain	Debatable	Construction. Overall Condition, Actual location
3	coast live oak	10,12	Fair/Good	3,850	Low	Save but remove trunk overhanging site	Risk
4	coast live oak	12,18,29,30	Good	42,200	Low/Moderate	Save	
5	elderberry	7,8,12	Fair/Poor	1,760	Low/Moderate	Save	
6	elderberry	12	Fair/Poor	900	Low	Save	
7	elderberry	13,10	Fair/Poor	1840	Low	Save	
8	coast live oak	7	Good	1,400	Low	Save	
9	Calif. sycamore	25,18,19,8	Good	24,800	Moderate/ Severe	Debatable	Construction
*10	London plane	18	Fair	5,900	Moderate	Save	
11	coast live oak	6,7	Fair/Good	1,350	Severe	Remove	Construction
12	coast live oak	8	Fair/Good	1,350	Severe	Remove	Construction
13	coast live oak	8	Fair/Good	1,350	Severe	Remove	Construction
14	coast live oak	10,8,7,6	Fair/Good	5,700	Low/Moderate	Save	
<b>Total Estimated Value</b>				<b>\$100,080</b>			

\*Species not native to the immediate area. All other species are native to the immediate area and are probably of natural growth, meaning that they were not planted.

PO Box 3714, Saratoga, CA 95070. 408-725-1357. decah@pacbell.net. http://www.decah.com.  
 Arborist Report #2 for Palm Villas, Saratoga. January 29, 2016.

Deborah Ellis, MS

Consulting Arborist & Horticulturist



**TABLE 1 SUMMARY TREE TABLE**

Tree #	Common Name	Trunk Diam. (DBH)	Preservation Suitability	Estimated Value	Expected Construction Impact	Action	Reason
15	Brazilian pepper	6, 6, 5, 4	Poor	\$4,250	Severe	Remove	Construction
16	Brazilian pepper	5, 5, 4, 4	Poor	\$3,400	Severe	Remove	Construction

From arborist report #1 for Palm Villas, July 27, 2015 by Deborah Ellis.

**TREE REMOVAL CRITERIA**

Criteria that permit the removal of a protected tree are listed below. This information is from Article 15-50.080 of the City Code and is applied to any tree requested for removal as part of the project. If findings are made that meet the criteria listed below, the tree(s) may be approved for removal and replacement during construction.

- (1) The condition of the tree with respect to disease, imminent danger of falling, proximity to existing or proposed structures and interference with utility services, and whether the tree is a Dead tree or a Fallen tree.
- (2) The necessity to remove the tree because of physical damage or threatened damage to improvements or impervious surfaces on the property.
- (3) The topography of the land and the effect of the tree removal upon erosion, soil retention and the diversion or increased flow of surface waters, particularly on steep slopes.
- (4) The number, species, size and location of existing trees in the area and the effect the removal would have upon shade, privacy impact, scenic beauty, property values, erosion control, and the general welfare of residents in the area.
- (5) The age and number of healthy trees the property is able to support according to good forestry practices.
- (6) Whether or not there are any alternatives that would allow for retaining or not encroaching on the protected tree.
- (7) Whether the approval of the request would be contrary to or in conflict with the general purpose and intent of this Article.
- (8) Any other information relevant to the public health, safety, or general welfare and the purposes of this ordinance as set forth in [Section 15-50.010](#)
- (9) The necessity to remove the tree for economic or other enjoyment of the property when there is no other feasible alternative to the removal.
- (10) The necessity to remove the tree for installation and efficient operation of solar panels, subject to the requirements that the tree(s) to be removed, shall not be removed until solar panels have been installed and replacement trees planted in conformance with the City Arborist's recommendation.

**CONDITIONS OF APPROVAL**

1. It is the responsibility of the owner, architect and contractor to be familiar with the information in this report and implement the required conditions.
2. All recommendations in the arborist report dated January 27, 2016 prepared by Deborah Ellis shall become conditions of approval.
3. The arborist report dated January 27, 2016 shall be copied on to a plan sheet, titled “Tree Preservation” and included in the final job copy set of plans.
4. This report dated March 31 shall be copied onto a plan sheet and included in the final plans.
5. The designated Project Arborist shall be Ian Geddes, unless otherwise approved by the City Arborist.
6. Tree Protection Security Deposit
  - a. Is required per City Ordinance 15-50.080.
  - b. Shall **\$96,000** be for tree(s) **1 – 10 and 14**.
  - c. Shall be obtained by the owner and filed with the Community Development Department before obtaining Building Division permits.
  - d. May be in the form of cash, check, credit card payment or a bond.
  - e. Shall remain in place for the duration of construction of the project.
  - f. May be released once the project has been completed, inspected and approved by the City Arborist.
7. Tree Protection Fencing:
  - a. Shall be installed as shown on the attached map.
  - b. Shall be shown on the Site Plan.
  - c. Shall be established prior to the arrival of construction equipment or materials on site.
  - d. Shall be comprised of six-foot high chain link fencing mounted on eight-foot tall, 2-inch diameter galvanized posts, driven 24 inches into the ground and spaced no more than 10 feet apart.
  - e. Shall be posted with signs saying “TREE PROTECTION FENCE - DO NOT MOVE OR REMOVE WITHOUT APPROVAL FROM CITY ARBORIST, KATE BEAR (408) 868-1276”.
  - f. Call City Arborist, Kate Bear at (408) 868-1276 for an inspection of tree protection fencing once it has been installed. This is required prior to obtaining building division permits.
  - g. Tree protection fencing shall remain undisturbed throughout the construction until final inspection.
  - h. If contractor feels that work must be done inside the fenced area, call City Arborist to arrange a field meeting before performing work.
8. The Project Arborist shall visit the site every two weeks during excavation, trenching and grading activities and monthly thereafter. Following visits to the site, the Project Arborist shall provide the City with a report including photos documenting the progress of the project and noting any tree issues.

9. The Project Arborist shall be on site to monitor all work within:
  - a. **8** feet of tree **1**
  - b. **20** feet of tree **9**
10. **The Project Arborist shall supervise all work under the canopy of tree 9.** This includes excavation for the basement parking, construction of the stairs to the basement, installation of drainage by the tree, installation of the walkway behind the building, and any necessary pruning of the canopy.
11. The Mitigation and Monitoring Plan for this project shall include measures that minimize the environmental impacts to sycamore tree 9 during construction.
12. Following completion of the work around trees, and before a final inspection of the project, the applicant shall provide a letter to the City from the Project Arborist. That letter shall document the work performed around trees, include photos of the work in progress, and provide information on the condition of the trees.
13. No protected tree authorized for removal or encroachment pursuant to this project may be removed or encroached upon until the issuance of the applicable permit from the building division for the approved project.
14. Receipt of a Planning or Building permit does not relieve applicant of his responsibilities for protecting trees per City Code Article 15-50 on all construction work.
15. All construction activities shall be conducted outside tree protection fencing. These activities include, but are not necessarily limited to, the following: demolition, grading, trenching, equipment cleaning, stockpiling and dumping materials (including soil fill), and equipment/vehicle operation and parking.
16. Trenching to install utilities is not permitted inside tree protection fencing.
17. Roots of protected trees measuring two inches in diameter or more shall not be cut without prior approval of the Project Arborist. Roots measuring less than two inches in diameter may be cut using a sharp pruning tool.
18. Any permitted pruning or root pruning of trees on site shall be performed under the supervision of the Project Arborist and according to ISA standards.
19. Trees **11, 12 13, 15** and **16** meet the criteria for removal and may be removed and replaced once Building Division permits have been obtained.
20. Trees permitted for removal shall be replaced on or off site according to good forestry practices, and shall provide equivalent value in terms of aesthetic and environmental quality, size, height, location, appearance and other significant beneficial characteristics of the removed trees. The value of the removed trees shall be calculated in accordance with the ISA Guide for Plant Appraisal.

21. New trees equal to **\$11,700** shall be planted as part of the project before final inspection and occupancy of the new home. New trees may be of any species. Replacement values for new trees are listed below.  
15 gallon = \$350      24 inch box = \$500      36 inch box = \$1,500  
48 inch box = \$5,000      60 inch box = 7,000      72 inch box = \$15,000
22. Replacement trees may be planted anywhere on the property as long as they do not encroach on retained trees.
23. Should any tree be damaged beyond repair, new trees shall be required to replace the tree. If there is insufficient room to plant new trees, some or all of the replacement value for trees shall be paid into the City's Tree Fund.
24. At the end of the project, when the contractor wants to remove tree protection fencing and have the tree protection security deposit released by the City, call City Arborist for a final inspection.

# Legend

## Tree Protection Fencing



# Palm Villas—Saratoga Creek Drive

## Lot 1

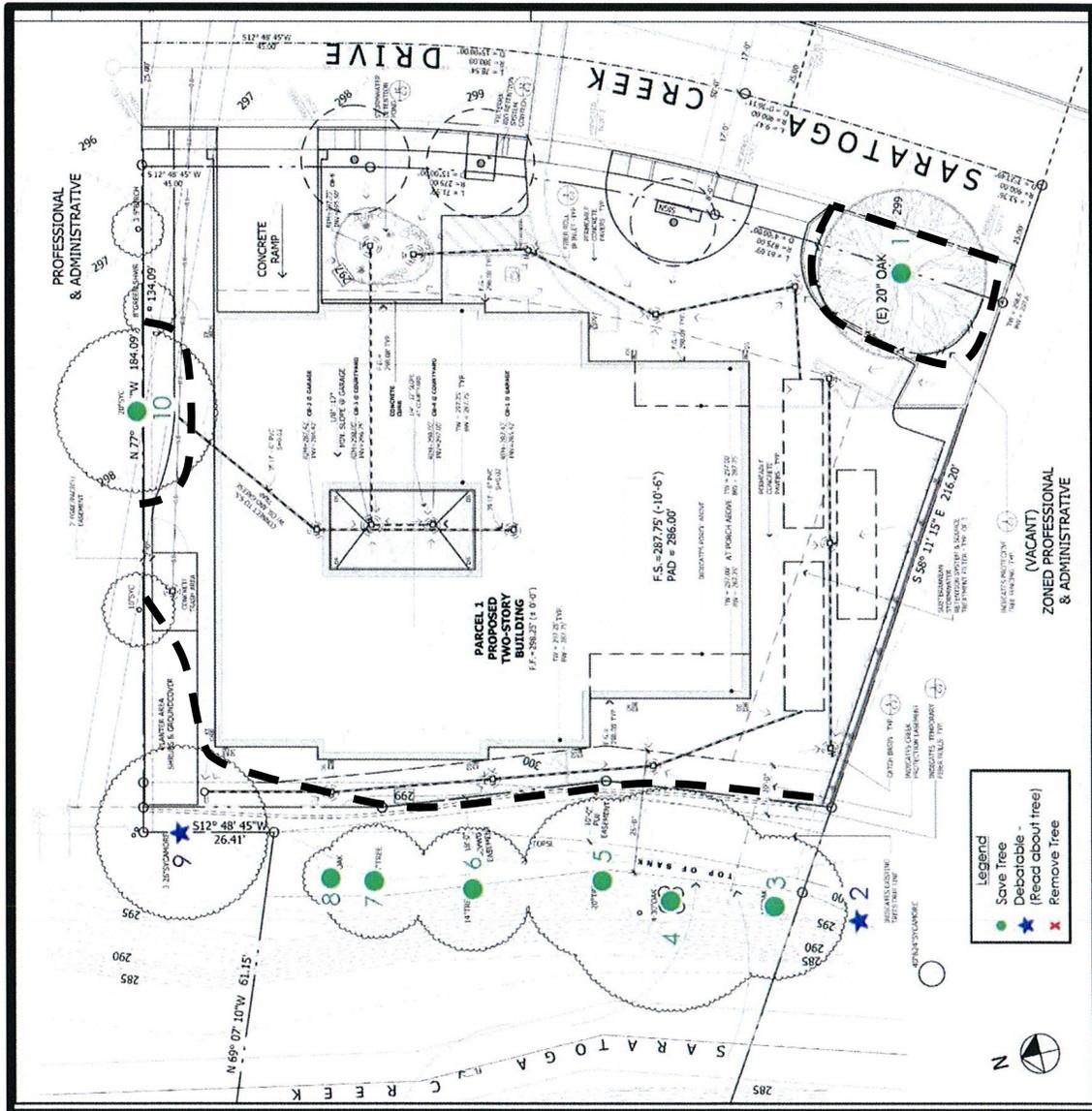


Deborah Ellis, MS

Consulting Arborist & Horticulturist

Service since 1984

# TREE MAP #2 - LOT 1



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# **APPENDIX C4**

*Arborist Report for Palm Villas Saratoga Project:  
April 14, 2020*



**4/14/2020**

Palm Villas Saratoga  
3333 S. Bascom Ave.  
Campbell, CA 95008

**Re: Proposed Palm Villas Project Saratoga Creek Drive: Sycamore #9**

Kate Bear, Saratoga City Arborist:

### **Assignment**

It was my assignment to review Sycamore Tree #9 (*Platanus racemose*), the development plans, and Guide 1 of the Guidelines and Standards for Land Use Near Streams from the Santa Clara Valley Water District (the “Guidelines”) and report my findings.

### **Summary**

I have reviewed the tree, the development plans, the Guidelines and can recommend the development proceed as planned and that the tree will continue to thrive, assuming the tree protection recommendations in this report are followed.

### **Discussion**

Tree #9 (*Platanus racemose*) has trunk three co-dominant trunks at the base. The trunk diameters were measured at 54” above grade. The trunk diameters are 20”, 21.5” and 27” (see images to right).



This tree has a disproportionate shape. The tallest point is 45’ tall, but the majority of the tree is closer to 30’ tall. The tree leans to the East heavily. It leans 45’ Est and only 10’ to the West.

Tree Health is Fair. Tree Structure is Fair – Poor due to the codominant main trunks, which are prone to failures. This tree has also torn large limbs in the past and now has large decay spots in the main trunks. These assessments are based upon the Table below:



<u>Rating</u>	<u>Health</u>	<u>Structure</u>
<b>Good</b>	excellent/vigorous	flawless
<b>Fair/good</b>	no significant health concerns	very stable
<b>Fair</b>	showing initial or temporary disease, pests or lack of vitality. measures should be taken to improve health and appearance.	routine maintenance needed such as pruning or end weight reduction as tree grows
<b>Fair/poor</b>	in decline, significant health issues	significant structural weakness(es), mitigation needed, mitigation may or may not preserve the tree
<b>Poor</b>	dead or near dead	hazard

The proposed foundation for the new construction is 21.6' from the outside of tree trunk for tree #9 (see attached diagram). This is an acceptable distance for development from this tree and does not pose a significant threat to the health or stability of the tree. The developer dug an exploratory trench, at the request of the City Arborist, Kate Bear, to demonstrate that no significant roots would be impacted on this compression side of the tree (see images to right – trench was dug a while ago and is somewhat obscured by new growth in these images). No roots were found in this exploratory trench at all.



Native Sycamore trees are not the most stable of trees. They tend to lean and grow long until



they break limbs. This tree is no exception (see images above). Due to the tree species, the severe lean and the fact the tree is phototropic leaning for the sun, it has lost large limbs and now there are significant decay spots in the main trunks. This compromises the structural stability of the tree in general. This tree is currently in need of corrective pruning (to ISA Standards) to help prevent future limb failures.

The Santa Clara County Valley Water District asked our team to review Guide 1 of the Guidelines and Standards for Land Use Near Streams from the Santa Clara Valley Water District (the “Guidelines”). This document States:

#### **PROTECTION OF EXISTING RIPARIAN VEGETATION**

**INTRODUCTION** This Design Guide is designed to provide more detail to G&S I.B on protection of native riparian plants. The G&S’s include several requirements related to the protection, removal and planting of riparian vegetation for new and major development. The sections that follow provide more detail on how to best implement these requirements. They also serve as helpful guidelines for single family home owners involved in landscaping and revegetation projects.

**THE IMPORTANCE OF RIPARIAN VEGETATION** Riparian vegetation plays a vital role in maintaining stream stability, providing valuable wildlife habitat, and moderating downstream flooding. In addition, the presence and/or absence of riparian areas is directly correlated to water quality as the riparian vegetation serves to filter pollutants from stormwater, such as oil and grease from roadways, fertilizer runoff from lawns, and excess sediments from upstream.

Due to the importance and relative lack of riparian vegetation in Santa Clara County, particularly in urban areas, one goal of any planning project is to avoid removal of any native riparian vegetation and to prevent the types of conditions that would threaten or degrade existing riparian habitat and/or contribute to soil loss critical to the continued health and regeneration of riparian trees. To this end, all development activities need to be outside this riparian corridor where at all possible. Any exceptions to this rule need to be justified and mitigated.

**VALUE OF ESTABLISHING RIPARIAN BUFFERS** The amount and condition of the riparian habitat has been significantly reduced in Santa Clara County over time, primarily due to channel encroachment and modification. This has led to incised channels, as well as a lowering of the water table, loss of riparian vegetation, decline in water quality and most beneficial uses, as well as increased risk of erosion, bank failure and flooding. To stop and reverse this trend, an additional buffer area should be established between the edge of the existing riparian zone and any development, where feasible. This buffer should be planted with native vegetation in order to better protect the riparian corridor and the watercourse. The goal is to eventually establish and increase the riparian buffer area all along the riparian corridor. The value of riparian buffers areas has been well documented, in addition to reducing flash runoff and improving water quality, they provide supplemental foraging resources and corridors for wildlife to access the streams and even increase streamside property values.

This Design Guide describes standard criteria for determining how far from existing riparian habitat to locate construction and development activities in order to help ensure its protection. The Design Guides that follow

provide more detail on the types of plants to use in landscaping and revegetation of areas, in or adjacent, to riparian areas. For more information on design of trails in specific, see Design Guide number 15.

## DESIGN GUIDE 1 GUIDELINES AND STANDARDS 1.B

### 4.4 USER MANUAL: GUIDELINES & STANDARDS FOR LAND USE NEAR STREAMS

**CALCULATING RECOMMENDED TREE PROTECTION ZONES** Calculation of the recommended distance between an existing riparian tree and closest construction, staff need to consider at least three variables: 1. The maturity of the tree 2. The trunk diameter 3. The sensitivity (or tolerance) of that particular species to nearby activities To calculate recommended minimum distance for each species, please use the species-specific formula shown on page 74 of 'Trees and Development, A Technical Guide to Preservation of Trees During Land Development' by Matheny and Clark. This book published in 1998 by the International Society of Arboriculture (<http://www.isaarbor.com/publications/publications.aspx>) integrates the three criteria into an optimal offset distance for development or trail construction, or the "Tree Protection Zone", (Chart to be inserted pending copyright permission.)

If excavation occurs inside the identified "Tree Protection Zone", roots will be severed, the tree's health will decline, the incidence of insect and diseases will increase and people may be endangered by eventual failure of the destabilized tree. Where there are other site constraints, anticipated encroachment within the recommended tree protection zone, an arborist should be consulted to determine the appropriate protection measures or alternative setbacks.

#### EXAMPLE TREE PROTECTION ZONES

**Western Cottonwood (*Populus fremontii*): Poor Tolerance** The Western Cottonwood has a poor tolerance to root disturbance. The tree protection zone for an overmature tree is 1.5' per inch of tree diameter or a 45 foot radius for a 30 inch diameter tree. Other trees with a poor tolerance include the black cottonwood and bigleaf maple.

**Western Sycamore (*Platanus racemosa*): Moderate Tolerance** A Western Sycamore has a moderate sensitivity to impacts around its roots. The tree protection zone for an overmature tree measured from its trunk is 1.25 feet per inch of trunk diameter. A 30" diameter mature Western Sycamore needs a tree protection zone with a 37.5' radius. Other species with a moderate tolerance include the valley oak, California bay and willows.

**Coast Live Oak (*Quercus agrifolia*): Good Tolerance** The Coast Live Oak has a good tolerance to disturbance. The species is sensitive to the addition of fill around its trunk and does not tolerate frequent summer watering. The tree protection zone for a mature tree is one foot per inch of trunk diameter. A 30 inch diameter tree needs a protection zone with a 30 foot radius. Other trees with a good tolerance include alders, box elders, and California buckeye.

The Trees and Development book that the Guide refers to is a 22 year old book. While it is a useful tool, it is *only one reference point*. The exploratory trench that was dug is even more revelatory in this case. And the trench showed no roots that would be negatively impacted by construction. Additionally, the Encroachment Diagram, provided by the Architect, is also relevant.

The Western Sycamores are “Moderately tolerant” of tolerant of development, according to Trees and Development. This book recognizes that it is only meant to be a Guideline – not a rule. The trunk diameters of Tree #9 are 20”, 21.5” and 27”.

The Calculation for Multi-Trunk trees is to add the trunks together and then take the square root of that number.

The equation then is  $20 + 20.5 + 27 = 68.5$  x the square root is 8.28’. According to Trees and Development, for a Mature Tree that is Moderately tolerant of development the radius tree protection zone is 8.28’. The proposed development is 21.6’ from the tree trunk of #9. The proposed development is more than twice as far as the recommendations from Trees and Development, according to this calculation. If we just took the largest trunk diameter as a measure the recommendation would be to stay 27’ from the trunk of tree. Again, development, especially in light of the lack of any roots in the exploratory trench, at 21.6’ from the tree seems acceptable on multiple levels.

Additionally, there is 22’ of land between Tree #9 and the edge of the creek, before it drops off (see image to right).



There is therefore a total undisturbed diameter area of 43.6’ around this tree.

It is my opinion that the proposed development will not negatively impact Tree #9 and should proceed with as planned with the following Tree Protection Measures:

**Protective** fencing is required to be provided during the construction period to protect trees to be preserved. This fencing must protect a sufficient portion of the root zone to be effective. Fencing is recommended to be located at a distance of 19’ in all directions from the tree.

The protective fencing must:

- a. Consist of chain link fencing and having a minimum height of 6 feet.
- b. Be mounted on steel posts driven approximately 2 feet into the soil.
- c. Fencing posts must be located a maximum of 10 feet on center.
- d. Protective fencing must be installed prior to the arrival of materials, vehicles, or equipment.
- e. Protective fencing must not be moved, even temporarily, and must remain in place until all construction is completed, unless approved by a certified arborist.
- f. Tree Protection Signage shall be mounted to all individual tree protection fences.

Based on the existing development and the condition and location of trees present on site, the following is recommended:

1. A Certified Arborist should supervise any excavation activities within the tree protection zone of trees to be retained.

2. Any roots exposed during construction activities that are larger than 1.5 inches in diameter should not be cut or damaged until the project Arborist has an opportunity to assess the impact that removing these roots could have on the trees.
3. The area under the drip line of trees should be thoroughly irrigated to a soil depth of 18" every 3-4 weeks during the dry months.
4. Mulch should cover all bare soils within the tree protection fencing. This material must be 6-8 inches in depth after spreading, which must be done by hand. Course wood chips are preferred because they are organic and degrade naturally over time.
5. Loose soil and mulch must not be allowed to slide down slope to cover the root zones or the root collars of protected trees.
6. There must be no grading, trenching, or surface scraping inside the driplines of protected trees, unless specifically approved by a Certified Arborist. For trenching, this means:
  - a. Trenches for any underground utilities (gas, electricity, water, phone, TV cable, etc.) must be located outside the driplines of protected trees, unless approved by a Certified Arborist. Alternative methods of installation may be suggested.
  - b. Landscape irrigation trenches must be located a minimum distance of 10 times the trunk diameter from the trunks of protected trees unless otherwise noted and approved by the Arborist.
7. Materials must not be stored, stockpiled, dumped, or buried inside the driplines of protected trees.
8. Excavated soil must not be piled or dumped, even temporarily, inside the driplines of protected trees.
9. Landscape materials (cobblestones, decorative bark, stones, fencing, etc.) must not be installed directly in contact with the bark of trees because of the risk of serious disease infection.
10. Landscape irrigation systems must be designed to avoid water striking the trunks of trees, especially oak trees.

I certify that the information contained in this report is correct to the best of my knowledge and that this report was prepared in good faith. Please call me if you have questions or if I can be of further assistance.

Respectfully,



Michael P. Young

# **APPENDIX C5**

*Bio Resources Assessment by  
Environmental Collaborative*



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# **BIOLOGICAL RESOURCE ASSESSMENT**

*for the*

**Palm Villas Project**

Saratoga, California

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*prepared for*

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9 May 2016

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## **BACKGROUND AND METHODS**

This assessment was prepared to address the potential impacts of the proposed Palm Villas Project in Saratoga, California. The project site consists of two parcels along the southern extension of Saratoga Creek Drive, along the east side of Saratoga Creek. The proposed project consists of the construction of two, two-story buildings with a common 22 stall parking lot located on a portion of Parcel 2. The building on Parcel 1 would be setback from the top of bank to Saratoga Creek by a minimum distance of 25 feet.

An Arborist Report (AR) was prepared for the site (Deborah Ellis, MS, 2016). The AR provides a review of trees regulated under the City of Saratoga Municipal Code (Section 15-50.050) as “protected trees” – a tree with a trunk diameter of 6 inches or greater for native tree species or 10 inches or greater for non-native species, measured 4.5 feet above the ground. A total of 14 protected trees with driplines that may be within five feet of proposed construction were identified in the AR, providing information on location, species and condition, and a valuation for use in the tree protection bond required under the Municipal Code.

Biological resources associated with the project site were identified through a review of available background information and conduct of field reconnaissance surveys. Available documentation was reviewed to provide information on general resources in the area, presence of sensitive natural communities, and the distribution and habitat requirements of special-status species which have been recorded from or are suspected to occur in the Saratoga vicinity, including a record search conducted by the California Natural Diversity Data Base (CNDDB). A field reconnaissance survey was conducted by James Martin, principal of Environmental Collaborative, on 11 March 2016. The survey served to determine the vegetation and wildlife resources, presence of any sensitive natural communities, potential for jurisdictional wetlands and waters, and suitability of the site to support populations of special-status species. The following provides a summary of the regulatory background, description of biological resources on the site, and an assessment of the significance of the potential impacts of project implementation.

## **REGULATORY FRAMEWORK**

In addition to the environmental protection provided by the California Environmental Quality Act (CEQA), other state and federal regulations have been enacted to provide for the protection and management of sensitive biological resources. State and federal agencies have a lead role in the protection of biological resources under their permit authority set forth in various statutes and regulations. The U.S. Fish and Wildlife Service (USFWS) is responsible for administering the Migratory Bird Treaty Act and the federal Endangered Species Act (ESA) for freshwater and terrestrial species, while the National Marine Fishery Service (NMFS) is responsible implementing the federal ESA for marine species and anadromous fish. The U.S. Army Corps of Engineers (Corps) has primary responsibility for protecting wetlands under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. At the state level, the California Department of Fish and Wildlife (CDFW) is responsible for administration of the California ESA, and for protection of streams, waterbodies, and riparian corridors through the Streambed Alteration Agreement process under Section 1600 of the California Fish and Game Code. Certification from the California Regional Water Quality Control Board (RWQCB)

is also required when a proposed activity may result in discharge into navigable waters, pursuant to Section 401 of the Clean Water Act and EPA 404(b)(1) Guidelines. And the also RWQCB regulates State waters protected under the Porter-Cologne Act that may not qualify as jurisdictional waters regulated by the Corps, such as hydrologically isolated seasonal wetlands.

## Special-Status Species and Sensitive Natural Communities

Special-status species<sup>1</sup> are plants and animals that are legally protected under the California and/or federal ESA<sup>2</sup> or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. Species with legal protection under the Endangered Species Acts often represent major constraints to development, particularly when they are wide ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take"<sup>3</sup> of these species.

The primary information source on the distribution of special-status species in California is the CNDDDB inventory, which is maintained by the Natural Heritage Division of the CDFW. Occurrence data is obtained from a variety of scientific, academic, and professional organizations, private consulting firms, and knowledgeable individuals, and entered into the inventory as expeditiously as possible. The presence of a population of species of concern in a particular region is an indication that an additional population

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1 Special-status species include:

- listed (rare, threatened, or endangered) and candidate species for listing by the CDFW.
- listed (threatened or endangered) and candidate species for listing by the USFWS.
- Species considered to be rare or endangered under the conditions of Section 15380 of the CEQA Guidelines, such as those identified on lists 1A, 1B, and 2 in the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Plants of California*.
- And possibly other species which are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included on list 3 in the CNPS *Inventory* or identified as animal "California Special Concern" species (CSC) by the CDFW, which have no legal protective status under the California Endangered Species Act but are of concern because of severe decline in breeding populations.

2 The federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal taxa. The California Endangered Species Act (CESA) of 1984 parallels the policies of FESA and pertains to native California species.

3 "Take" as defined by the FESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" a threatened or endangered species. "Harm" is further defined by the USFWS to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modification or degradation. The CDFW also considers the loss of listed species habitat as "take", although this policy lacks statutory authority and case law support under the CESA.

Two sections of FESA contain provisions which allow or permit "incidental take." Section 10(a) provides a method by which a state or private action which would result in "take" may be permitted. The applicant must provide the USFWS with an acceptable conservation plan and publish notification for a permit in the Federal Register. Section 7 pertains to a federal agency which proposes to conduct an action which may result in "take," requiring consultation with USFWS and possible issuance of a jeopardy decision. Under the CESA, "take" can be permitted under Section 2081 of the Fish and Game Code. The applicant must enter into a habitat management agreement with the CDFW, which defines the permitted activities and provides adequate mitigation.

may occur at another location within the region, if habitat conditions are suitable. However, the absence of an occurrence in a particular location does not necessarily mean that special-status species are absent from the area in question, only that no data has been entered into the CNDDDB inventory. Detailed field surveys are generally required to provide a conclusive determination on presence or absence of sensitive resources from a particular location, unless suitable habitat is determined to be absent.

In addition to species-oriented management, protecting habitat on an ecosystem-level is increasingly recognized as vital to the protection of natural diversity in the state. The CNDDDB also monitors the locations of natural communities that are considered rare or threatened, known as sensitive natural communities. The CNDDDB has compiled a list of sensitive natural communities that are given a high inventory priority for mapping and protection (CDFW, 2010). Although these natural communities have no legal protective status under the State or federal Endangered Species Acts, they are provided some level of protection under the CEQA Guidelines. A project would normally be considered to have a significant effect on the environment if it would substantially affect a sensitive natural community such as a riparian woodland, native grassland, or coastal salt marsh. Further loss of a sensitive natural community could also be interpreted as substantially diminishing habitat, depending on the relative abundance, quality and degree of past disturbance, and the anticipated impacts.

## **Wetlands**

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. Technical standards for delineating wetlands have been developed by the Corps and the USFWS, which generally define wetlands through consideration of three criteria: hydrology, soils, and vegetation.

The CDFW, Corps, and RWQCB have jurisdiction over modifications to stream channels, river banks, lakes, and other wetland features. Jurisdiction of the Corps is established through the provisions of Section 404 of the Clean Water Act, which prohibits the discharge of dredged or fill material into "waters" of the United States without a permit, including wetlands and unvegetated "other waters". All three of the identified technical criteria must be met for an area to be identified as a wetland under Corps jurisdiction, unless the area has been modified by human. Jurisdictional authority of the CDFW over wetland areas is established under Section 1601-1606 of the Fish and Game Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Fish and Game Code stipulates that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake" without notifying the Department, incorporating necessary mitigation, and obtaining a Streambed Alteration agreement. The RWQCB is responsible for upholding state water quality standards pursuant to Section 401 of the Clean Water Act and for regulating wetlands under the Porter-Cologne Act.

## Relevant Local Plans and Policies

The Open Space/Conservation Element of the City of Saratoga General Plan contains a number of policies and implementing actions that address biological resources. These include minimizing development that would encroach into important wildlife habitat (Policy OSC 11.1), preserving riparian habitat and creek corridors through the development and CEQA review process (Policy OSC 11.2), preserving mature vegetation (Policy OSC 11.5), using the design review and environmental review process to ensure new development is designed in a manner that minimizes disruption to important habitat (Implementation OSC.11.1), and conformance with the City's Tree Ordinance (Implementation OSC.11.b).

City Ordinance No 308 (Chapter 15-50 of the Municipal Code) pertains to the protection of certain species of trees with a trunk diameter in excess of a specified size, and requires a permit before removal is allowed. A "protected trees" is defined as one with a trunk diameter of 6 inches or greater for native tree species or 10 inches or greater for non-native species, measured 4.5 feet above the ground.

Chapter 15-46 of the City's Municipal Code pertains to creek protection setbacks, and defines the City's design. Setback distances are established from the identified top of bank, and the required setback is the minimum prescribed for the applicable zoning district.

## SETTING

### Vegetation

Native vegetation on the site has been largely eliminated during past agricultural practices, and routine disking for weed control and fire fuel reduction, with the exception of riparian habitat along the Saratoga Creek corridor and a few scattered native coast live oak (*Quercus agrifolia*) trees. Most of the site supports a cover of non-native grassland and ruderal (weedy) species. These include: wild oats (*Avena spp.*), filaree (*Erodium sp.*), wild mustard (*Brassica sp.*), and bromes (*Bromus spp.*).

The Saratoga Creek corridor continues to support native riparian woodland and scrub. Native coast live oaks, sycamores (*Platanus racemosa*), California bays (*Umbellularia californica*), and willows (*Salix lasiolepis*) forms the dominant overstory cover. California buckeye (*Aesculus californica*) and elderberry (*Sambucus cerulea*) are also present as smaller trees along the creek corridor. Understory vegetation is either absent or is generally limited to a few native species or highly invasive non-native species on the bank of the creek, such as periwinkle (*Vinca major*), English ivy (*Hedera helix*), and Himalaya blackberry (*Rubus discolor*). Native understory species include: poison oak (*Toxicodendron diversilobum*), wood rose (*Rosa gymnocarpa*), bee plant (*Scrophularia californica*), and California blackberry (*Rubus ursinus*). Emergent wetland vegetation is absent along the active channel bottom of the creek where it borders the site.

### Wildlife

With the exception of the Saratoga Creek corridor, wildlife habitat values on the site are highly limited due to the extent of impervious surfaces and routine disking which limits protective cover, and foraging and nesting opportunities. Several species of birds most

likely fly over or use the few trees on the site for occasional foraging or resting. No evidence of any nests were observed in the upland portion of the site during the field reconnaissance.

By contrast, the Saratoga Creek corridor provides high wildlife habitat values, but even these are compromised by the proximity of development along creek banks to the north and west. The mature riparian trees and cover on the banks provide foraging opportunities for a variety of wildlife, particularly bird species such as including jays, kinglets, flycatchers, nuthatches, woodpeckers, and others. Larger terrestrial species which may occasionally move along the creek bottom and banks include: raccoon, opossum, and black-tailed deer. An old nest cavity was observed in one of the coast live oak trees along the creek corridor, possibly a woodpecker nest, but no evidence of any bird nests were observed in the other trees and shrubs during the field reconnaissance. Regarding the aquatic habitat of the creek, no amphibians, fish, or amphibians of any type were observed along the entire reach during the field reconnaissance survey. However, the creek corridor most likely provides a movement corridor for a number of native fish, possibly western pond turtle, amphibians and other aquatic dependent species. .

### **Sensitive Natural Communities**

No occurrences of sensitive natural community types have been reported by the CNDDDB from the project site, and no native grasslands or other distinctive natural community types are present in upland areas. However, the Sycamore Creek corridor contains a sizable component of native overstory species, dominated by sycamores, coast live oak, willows and California bay. It continues to function as a high quality riparian corridor and should be considered sensitive natural community type for planning purposes. The remaining tree canopy provides important shade for the aquatic habitat along the creek corridor, among other functions.

### **Special-Status Species**

Records maintained by the CNDDDB and other information sources indicate that several special-status plant and animal species have been historically reported from or are suspected to occur in the Saratoga vicinity. As indicated in Figure 1, no known occurrences of special-status species have been reported from the project site or immediate vicinity. A specific occurrence of arcuate bush mallow (*Malacothamus arcuatus*) extends along Saratoga Sunnyvale Road, about a mile and a half southwest of the site. This species typically occurs in chaparral habitat, and is maintained on List 1B (rare or endangered in California and elsewhere) of the CNPS *Inventory*. Suitable habitat for this species is absent on the site and no individuals were observed during the field reconnaissance survey. Several general occurrences of other special-status plant species have been reported from the surrounding area, including: Loma Prieta hoita (*Hoita strobilina*), woodland woollythreads (*Monolopia gracilens*), and robust spineflower (*Chorizanthe robusta*), all of which have no formal State or federal-listings but are maintained on List 1B of the CNPS *Inventory*. Suitable habitat is absent for all special-status plant species on the site, which typically occur in chaparral and associated grasslands, and none were observed in the adjacent riparian scrub and woodland. Given the extent of past disturbance and absence of any special-status plant species during the field reconnaissance survey, none are expected to occur on the site and adjacent riparian woodlands.

A number of special-status animal species are known from the Peninsula and South Bay areas. Most of these are associated with coastal salt marsh habitat and adjacent uplands along the bay and other specific habitat types such as serpentine grasslands or oak woodlands not found on the project site. These include: salt-marsh harvest mouse (*Reithrodontomys raviventris*), California clapper rail (*Rallus longirostris obsoletus*), California black rail (*Laterallus jamaicensis cotuniculus*), California least tern (*Sterna antillarum browni*), western snowy plover (*Charadrius alexandrinus nivosus*), and saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*). Similarly, a number of invertebrate species known from the Peninsula and South Bay areas are not suspected to occur on the project site due to lack of larval host plant species or suitable habitat. These include: Myrtle's silverspot (*Speyeria zerene myrtleae*), Mission blue butterfly (*Icaricia icaroides missionensis*), bay checkerspot butterfly (*Euphydryas editha bayensis*), monarch butterfly (*Danaus plexippus*), Edgewood blind harvestman (*Calicina minor*), Richsecker's water scavenger beetle (*Hydrochara rickseckeri*), and several species of bumble bee.

Saratoga Creek historically provided dispersal habitat for two listed species; the federally-threatened California red-legged frog (*Rana aurora draytonii*) and the federally threatened steelhead - Central California Coast Evolutionarily Significant Unit (*Oncorhynchus mykiss*). And there is a remote possibility that western pond turtle (*Actinemys marmorata*), recognized as a California Special Concern (CSC) species by the CDFW, that this species continues to disperse along the creek corridor. There are no CNDDDB records for any occurrences for any of these species in the immediate project vicinity. An occurrence of California red-legged frog has been reported from the upper Saratoga Creek watershed, approximately 2.5 miles to the southwest of the project site. Information on each of these species is summarized below.

**Steelhead–Central California Coast ESU.** Steelhead (*Oncorhynchus mykiss*) is the anadromous form of rainbow trout, migrating from the ocean to freshwater streams to spawn. Juveniles spend one to three years in their natal streams before going to sea as smolts. The Central California Coast Evolutionarily Significant Unit (ESU) is federally listed as threatened and recognized as a CSC by the CDFW. Most steelhead return to freshwater streams after spending two to three years at sea. Important factors associated with preferred stream channel conditions include temperature, velocity, depth, gravel substrate, and water quality. Shaded banks with overhanging riparian vegetation (termed “shaded riverine aquatic cover” by the USFWS) are also beneficial to salmonids, providing foraging habitat and cover from predators. High water temperatures, low rates of streamflow, low levels of dissolved oxygen, low sediment input, and stream obstructions can be detrimental to steelhead populations.

Saratoga Creek once supported a run of steelhead, but fish observations over the past few decades are presumably from resident fish. Saratoga Creek is no longer believed to support a steelhead run due to a large barrier at the first entry point upstream of the confluence with San Tomas Aquino Creek (Leidy, 2003).

**California Red-Legged Frog.** California red-legged frog has been extirpated or nearly extirpated from 70 percent of its former range. Population declines of this species have been attributed to a variety of factors, with habitat loss and predation by non-native Aquatic predators (e.g., bullfrogs, crayfish, other non-native fishes) typically implicated as the primary factors. California red-legged frogs occur in and along freshwater

marshes, streams, ponds, and other semi-permanent water sources. Optimal habitat contains dense emergent or shoreline riparian vegetation closely associated with deep (i.e., greater than 2.3 feet), still, or slow moving water. Cattails, bulrushes, and willows provide the habitat structure that seems to be most suitable for California red-legged frogs. Although the species can occur in intermittent streams and ponds, they are unlikely to persist in streams in which all surface water disappears. Regardless of water depth, suitable breeding habitat must contain water during the entire development period for eggs and tadpoles.

As indicated in Figure 1, an occurrence of California red-legged frog has been reported from the upper Saratoga Creek watershed, approximately 2.5 miles southwest of the site. Although there is a remote possibility that an individual frog could be swept down or disperse downstream from this upper watershed location, the reach of Saratoga Creek on the project site is unsuitable as permanent habitat for this species. Suitable pool or pond habitat is absent for breeding and retreat functions, and the absence of emergent vegetation would leave any individual frogs vulnerable to predation by raccoon and other predators. Any individual frogs would presumably be taken given the lack of protective cover.

**Western Pond Turtle.** Western pond turtles are considered a CSC species by the CDFW. They occur in a wide variety of aquatic habitats, including ponds, lakes, marshes, rivers, streams, and canals that typically have a rocky or muddy bottom and contain stands of aquatic vegetation. The presence or absence of pond turtles at a given aquatic site is largely dependent on the availability of suitable basking sites and adjacent upland habitat for egg-laying (e.g., sandy banks or grassy open fields) and over-wintering. Nests are typically dug in dry substrate with a high clay or silt fraction since the female moistens the site where she will excavate the nest prior to egg-laying. Hatchlings require shallow water habitat with relatively dense submerged or short emergent vegetation in which to forage. The San Leandro Creek corridor may be used occasionally by turtles dispersing from more suitable habitat to the east of the Project Study Area

The reach of Saratoga Creek on the project site is unsuitable for permanent habitat for western pond turtle. Although individual turtles may occasionally disperse along the creek channel, there are no deep pools needed as essential retreat habitat for this species.

## **Wetlands**

A preliminary wetland assessment of the project site vicinity was conducted during the field reconnaissance survey. The Saratoga Creek channel on the site does not support any wetland vegetation, but would be considered jurisdictional unvegetated "other waters" by the Corps as a federally regulated waters below the Ordinary High Water Mark (OHWM) and would fall under the jurisdiction of the CDFW and RWQCB as a State waters within the bank and bed of the channel. However, because the jurisdictional waters of the creek below the OHWM will not be affected a Nationwide Authorization would not be required from the Corps and water quality certification would not be required by the RWQCB. The proposed 25-foot building setback and restriction of paving and other improvements from the top of bank most likely avoids the need for a Streambed Alteration Agreement from the CDFW. However, it may be prudent for the applicant to submit a Notification to the CDFW in accordance with their Streambed

Alteration Agreement Program given the proximity of proposed improvements to riparian vegetation and the top of bank.

## ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

### Significance Criteria

Criteria have been established in determining the significance of potential impacts on biological resources. The CEQA Guidelines identify potentially significant environmental effects on biological resources to include:

- a substantial adverse effect, either directly or through habitat modifications, on any special-status species;
- a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS.
- a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a creek preservation policy or ordinance.
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

### Initial Study Checklist Questions

a) *Have a substantial adverse impact on a candidate, sensitive or special-status species?* **Less-than-Significant Impact with Mitigation.**

Essential habitat for special-status species is generally absent from the site, and no adverse impacts on special-status species are anticipated. The extent of past development and on-going maintenance of the upland portion of the property precludes the occurrence of any special-status plant species or essential habitat for special-status animal species. No disturbance to the Saratoga Creek corridor is proposed as part of the project, which would avoid any potential direct or indirect impacts on western pond turtle, steelhead, or California red-legged frog in the remote instance that individuals could be dispersing along the creek corridor at some point in the future.

The mature trees and dense shrubs could be used for nesting by bird species. These nests would be protected under the Migratory Bird Treaty Act (MBTA) and State Fish and Game code when in active use. The MBTA prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the

Interior; this prohibition includes whole birds, parts of birds, and bird nests and eggs. Tree removal and site grubbing during the breeding season could result in the incidental loss of fertile eggs or nestlings or nest abandonment. This would be considered a potentially significant impact.

A standard requirement is either to initiate construction during the non-nesting season, which in Santa Clara County is typically from September 1 to January 31, or to conduct a nesting survey within 14 days prior to initial tree removal and grubbing to determine whether any active nests are present that must be protected until any young have fledged and are no longer dependent on the nest. Protection of the nests, if present, would require that construction setbacks be provided during the nesting and fledging period, with the setback depending on the type of bird species, degree to which the individuals have already acclimated to other ongoing disturbance, and other factors.

The following measure is recommended to mitigate potential adverse impacts on possible nesting birds to a *less-than-significant level*.

**Mitigation Measure BIO-1:** Tree removal and initial grubbing of the site shall be performed in compliance with the Migratory Bird Treaty Act and Sections 3503, 3503.5, 3511, 3513, 3515, and 4700 of the California Fish and Game Code. Preferably, this shall be accomplished by scheduling tree removal and initial grubbing outside of the bird nesting season (which occurs from February 1 to August 31) to avoid possible impacts on nesting birds if new nests are established in the future. Alternatively, if tree removal and initial grubbing cannot be scheduled during the non-nesting season (September 1 to January 31), a pre-construction nesting survey shall be conducted. The pre-construction nesting survey shall include the following:

- A qualified biologist (Biologist) shall conduct a pre-construction nesting bird (both passerine and raptor) survey within 14 days prior to tree removal and/or initial grubbing.
- If no nesting birds are observed, no further action is required and tree removal, initial grubbing and construction activities shall occur within 14 days of the survey to prevent take of individual birds that could begin nesting after the survey.
- Another nest survey shall be conducted if more than 14 days elapse between the initial nest search and the beginning of tree removal, initial grubbing and construction activities.
- If any active nests are encountered, the Biologist shall determine an appropriate disturbance-free buffer zone to be established around the nest location(s) until the young have fledged. Buffer zones vary depending on the species (i.e., typically 75 to 100 feet for passerines and 300 feet for raptors) and other factors such as ongoing disturbance in the vicinity of the nest location. If necessary, the dimensions of the buffer zone shall be determined in consultation with the California Department of Fish and Wildlife (CDFW).
- Orange construction fencing, flagging, or other marking system shall be installed to delineate the buffer zone around the nest location(s) within which no construction-related equipment or operations shall be permitted. Continued use of existing facilities such as surface parking and site maintenance may continue within this buffer zone.
- No restrictions on grading or construction activities outside the prescribed buffer zone are required once the zone has been identified and delineated in

the field and workers have been properly trained to avoid the buffer zone area.

- Construction activities shall be restricted from the buffer zone until the Biologist has determined that young birds have fledged and the buffer zone is no longer needed.
- A survey report of findings verifying that any young have fledged shall be submitted by the Biologist for review and approval by the City prior to initiation of any tree removal, initial grubbing or other construction activities within the buffer zone. Following approval by the District, tree removal, building demolition, and construction within the nest-buffer zone may proceed.

b) *Have a substantial adverse impact on any riparian habitat or other sensitive natural community?* **Less-than-Significant Impact with Mitigation.**

The proposed construction activities would be performed at the outer edge of the Saratoga Creek corridor, and could temporarily affect the associated riparian habitat if adequate controls are not implemented. Of greatest concern is the potential for moderate to severe damage to a mature California sycamore tree (Tree #9) as described in the AR. In the previous Site Plan by Metro Design Group (dated January 21, 2016), new pavement was proposed within five feet of the trunk to Tree #9, and a drainage pipe was to pass within seven feet of the trunk, which could have resulted in a moderate to severe effect on this tree as concluded in the AR. Trenching for the drainage pipe and grading for the new paving could damage or sever major roots of this cluster of trees, and could contribute to their longer term decline and eventual death. A minimum 12 foot setback for construction-related soil disturbance is recommended around Tree #9 in the AR, to reduce the potential severity of construction-related damage. This setback was incorporated into the revised Site Plan by Metro Design Group (dated April 21, 2016). With adequate controls on construction, and modifications to the project design recommended in the AR, the riparian habitat along the Saratoga Creek corridor would be retained and protected as part of the project.

The following measure is recommended to mitigate potential adverse impacts on the riparian habitat along the Saratoga Creek corridor to a *less-than-significant* level.

**Mitigation Measure BIO-2:** As recommended in the Arborist Report (Ellis, 2016) for the project, adequate controls should be implemented to avoid damage and loss of native trees along the Saratoga Creek corridor. This should include modifications to the project design to provide a minimum 12-foot setback from construction-related soil disturbance around the mature cluster of California sycamore trees (Tree #9) near the northwestern corner of the Parcel 1 Building.

c) *Have a substantial adverse impact on federally protected wetlands?* **Less-than-Significant Impact with Mitigation.**

No wetlands occur in the upland portions of the site proposed for development, and construction would generally be restricted away from the top of bank to Saratoga Creek. All improvements would be located above the OHWM of Saratoga Creek, and would therefore not be regulated by the Corps or RWQCB under the Clean Water Act. Similarly, most improvements are proposed outside the top of bank, and it is unlikely that State waters regulated by the CDFW or RWQCB would be directly affected. However,

because the proximity of proposed improvements to native vegetation near the top of bank, especially the cluster of mature California sycamore trees near the northwest corner of proposed Building 1, a Notification should be submitted to the CDFW in accordance with the Streambed Alteration Agreement Program.

There is a remote possibility that materials from the construction zone could inadvertently roll down the creek bank and enter the active channel of Saratoga Creek unless adequate avoidance measures are taken. This would require installation of an effective barrier to prevent excavated dirt and other debris from spilling down the slope during construction.

The following measures have been incorporated into the proposed project specifications, and serve to prevent any inadvertent disturbance to jurisdictional waters and reduce potential impacts to a *less-than-significant* level.

**Mitigation Measure BIO-3:** A Stormwater Pollution Prevention Plan shall be prepared addressing all water-quality, sedimentation, and erosion aspects of the proposed project. The Stormwater Pollution Prevention Plan shall be prepared by a qualified engineer utilizing Best Management Practices, and shall include installation of a durable silt fence at the downslope edge of the construction zone to prevent any materials from spilling down the creek bank into the active channel of Saratoga Creek. Any materials which accumulate on the barrier fencing shall be removed on a daily basis to ensure the structure is not overloaded and continues to function effectively.

d) *Interfere with movement of native fish or wildlife species or quality of native wildlife habitat?* **Less-than-Significant Impact.**

Proposed improvements would require removal of existing non-native grassland cover and several smaller trees, but should not interfere with any wildlife movement opportunities. Construction activities would be restricted outside the active creek channel, generally avoiding adverse impacts on sensitive riparian or aquatic habitat. Wildlife species associated with the riparian habitat would continue to utilize the Saratoga Creek corridor even during construction. And wildlife species common in suburban habitats would eventually utilize the landscaping and trees to be retained in the upland portions of the site, following completion of construction and establishment of landscape plantings. Potential impacts on wildlife movement opportunities would be *less-than-significant*.

**No mitigation is required.**

e) *Conflict with local policies or ordinances protecting biological resources?* **Less-than-Significant Impact.**

The project would not conflict with any goals and policies of the City of Saratoga regarding protection of biological and wetland resources, and no adverse impacts are anticipated. The project includes a minimum 25-foot setback from the top of bank to Saratoga Creek. The AR provides an assessment of the proposed project on protected trees on the site. The AR includes recommendations to ensure conformance with the City of Saratoga Tree Protection Requirements and calls for design changes around two trees (coast live oak #3 and California sycamore #9) to reduce the potential for

construction-related damage. Tree #3 has old pruning wounds and the canopy in the vicinity of the future Building 1 is so high it is difficult to determine whether additional limb removal may be required, although this appears unlikely. New pavement was proposed within five feet of the trunk to Tree #9, and a drainage pipe was to pass within seven feet of the trunk, which could result in a moderate to severe effect on this tree. A minimum 12 foot setback for construction-related soil disturbance is recommended around Tree #9 in the AR, to reduce the potential severity of construction-related damage, which was incorporated into the latest Site Plan (dated April 21, 2016) by Metro Design Group. Any protected to be removed to accommodate development or damaged beyond repair during construction would require replacement according to its appraised value, as called for under the City's Tree Protection Ordinance. Implementation of the recommendations made in the AR would serve to preserve the protected trees on the site, would ensure conformance with the relevant tree protection ordinance of the City, and potential impacts would be *less-than-significant*.

**No mitigation is required.**

f) *Conflict with an adopted Habitat Conservation Plan or Natural Community Conservation Plan?* **No Impact.**

The proposed project would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved conservation plan. No such conservation plans have been adopted encompassing the project vicinity, and *no impacts* are therefore anticipated.

**No mitigation is required.**

**APPENDIX A**  
**REFERENCES**

## REFERENCES

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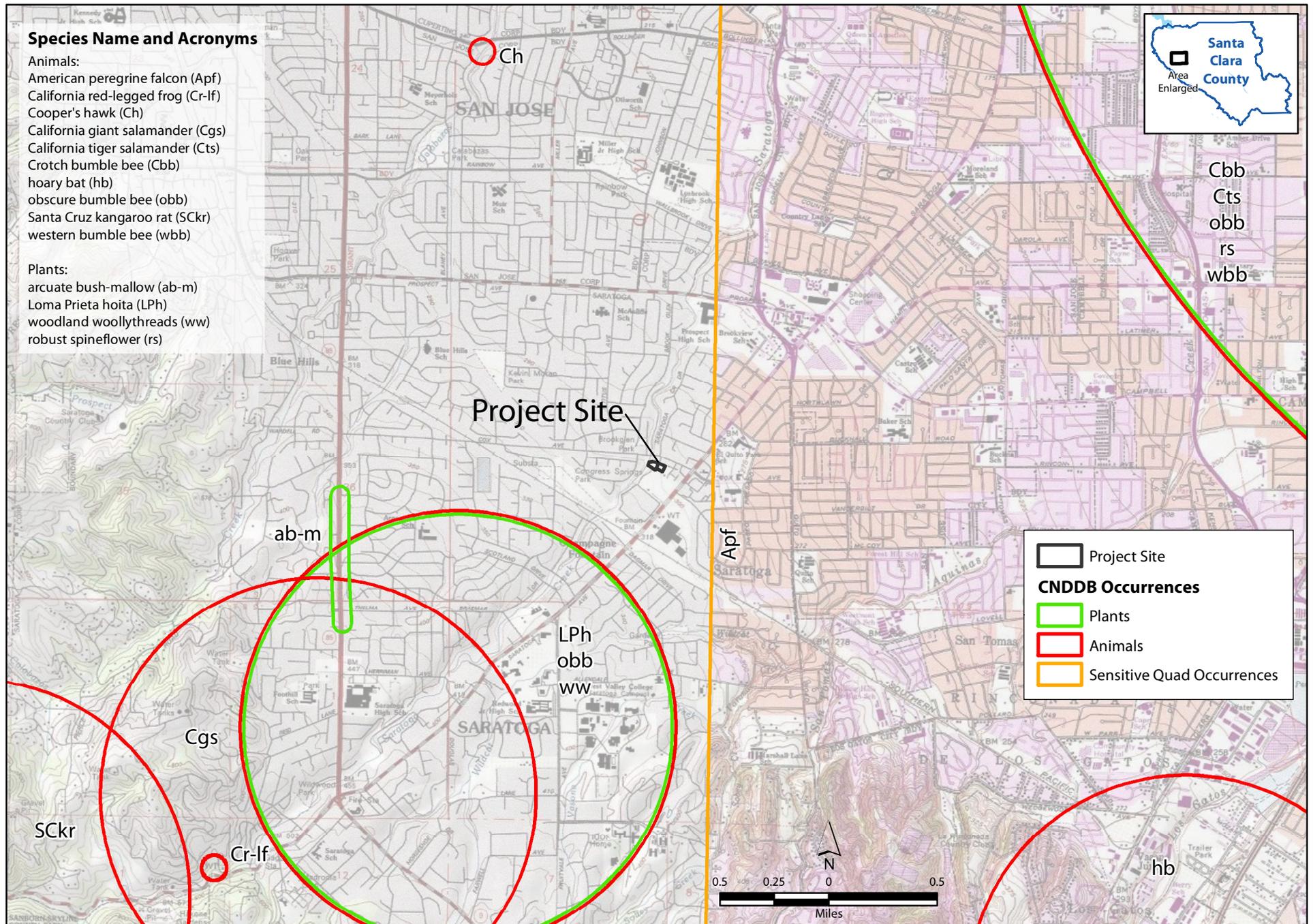
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**APPENDIX B**  
**PERSONS INVOLVED IN REPORT PREPARATION**

This report was prepared by ENVIRONMENTAL COLLABORATIVE under contract to Mr. Michael Sneider, Golden Age Properties Saratoga 1. Mr. James Martin, Principal of ENVIRONMENTAL COLLABORATIVE, conducted the field reconnaissance survey and habitat suitability analysis, and prepared the written report. Any questions regarding this report may be directed to Mr. Martin by telephoning (510) 654-4444.

# Figure 1. Special-Status Species



SOURCES: California Natural Diversity Database accessed on 2016-02-29; Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed. Map produced by www.digitalmappingsolutions.com on 03/01/2016.



**APPENDIX C6**  
*Biologist Qualifications*



**Laura Burris, B.S., Biology, Humboldt State University.** Laura Burris is a senior biologist/botanist with more than 13 years of experience in terrestrial biology. Ms. Burris specializes in botanical surveys, wetland delineations, and the ecological study of vegetation communities for application in habitat restoration, mitigation, and conservation. She is knowledgeable about the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) and their processes, and is skilled in managing and drafting environmental documents such as biological resource assessments, wetland delineation reports, arborist reports, habitat restoration plans, technical sections of NEPA/CEQA documents, and regulatory permit applications.

**Allie Sennett, M.S., Environmental Management, University of San Francisco.** Allie Sennett is a biologist over 8 years of experience providing biological resources consulting services throughout California. Ms. Sennett conducts general biological surveys, tree inventories, wetland delineations, rare plant surveys, and habitat assessments for special-status species. She prepares biological constraints memos, baseline biological studies, wetland delineation reports, biological assessments for Section 7 Endangered Species Act consultation, and other technical documents used in the CEQA/NEPA process. Ms. Sennett evaluates potential project impacts, proposes mitigation measures, prepares regulatory permit applications, and researches special-status species for public and private sector projects throughout California.

**Paul Keating, B.S., Biology, University of San Francisco.** Paul Keating is a wildlife biologist with over 6 years of experience conducting biological field studies throughout California. Mr. Keating is familiar with California's wildlife and associated vegetation communities on the ground as a function of his past experience with the California Department of Fish and Wildlife. He has extensive training and experience conducting surveys and sampling on a wide array of common or special-status species. Mr. Keating is experienced in geospatial analysis, including field data collection standards and geographical information systems, technical report writing, and permit applications. He also has prior experience as a city planner, responsible for preparing and presenting staff reports and sections of CEQA documents for development projects in the City of Elk Grove.

