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## 1.0 INTRODUCTION

On January 15, 2020, WRA, Inc. (WRA) conducted an arborist survey at the site of a proposed multi-family residential housing project (Project) located at 825 Drake Avenue (APN: 052-112-03), in Sausalito, unincorporated Marin County (County), California (Study Area). The survey was conducted by ISA-Certified Arborist Gavin Albertoli (ISA #WE-12027A). The purpose of the survey was to identify and document the presence of “Protected Trees” and “Heritage Trees” as defined by Chapter 22.27, “Native Tree Preservation and Protection” of the Marin County Municipal Code (Tree Ordinance) within the Study Area.

GPS locations for all protected or heritage trees surveyed within the Study Area and information regarding the species, size in diameter at breast height (DBH; as measured 4.5 feet above grade), estimated crown radius, estimated height, health, condition, and structure ratings were collected and are included in this report. A table with all relevant information pertaining to surveyed trees is provided in Appendix A. A tree survey location map is provided in Appendix B. Representative photographs are provided in Appendix C.

### 1.1 Study Area Description

The Study Area is composed of one approximately 1.01-acre improved parcel located at 825 Drake Avenue, approximately 0.2 air mile west of US Highway 101. The Study Area consists of mostly developed areas including a paved parking lot, paved walkways, a semi-permanent church structure, a storage shed, and surrounding landscaped areas. Planted native and non-native landscape trees border the majority of the Study Area. Existing access to the Study Area is via a paved driveway that is located in the southern portion of the Study Area adjacent to Drake Avenue.

### 1.2 Regulatory Background

#### Marin County Tree Ordinance

Marin County recognizes the value and beneficial functions that trees provide the residents of the County. Chapter 22.27, “Native Tree Protection and Preservation” of the County’s Municipal Code (Tree Ordinance) regulates the protection of certain trees on improved and unimproved properties in non-agricultural unincorporated areas of the County. The Tree Ordinance protects both “protected trees” and “heritage trees” as defined below.

- Protected trees are defined as native oaks (*Quercus* spp.), willows (*Salix* spp.), Sargent cypress (*Hesperocyparis sargentii* [*Cupressus* s.]), and madrone (*Arbutus menziesii*) with a minimum diameter at breast height (DBH; measured 4.5 feet above grade) of 6 inches, and most other native tree species, including Douglas fir (*Pseudotsuga menziesii*) and California bay (*Umbellularia californica*) with a minimum DBH of 10 inches.
- Heritage trees are defined as native oaks, willows, Sargent cypress, and madrone with a minimum DBH of 18 inches, and most other native tree species including California bay with a minimum DBH of 30 inches.

A tree removal permit through the County’s Community Development Agency Planning Division is required anytime two or more protected trees are being removed from a developed lot in a 12-month period; the tree being removed qualifies as a heritage tree; a protected tree or heritage tree is located in a stream conservation area or a wetland conservation area, or a protected tree is being removed from a vacant lot. Exemptions not requiring a permit include the removal of any protected or heritage tree that meets at least one of the following criteria for removal:

- The general health of the tree is so poor due to disease, damage, or age that efforts to ensure its long-term health and survival are unlikely to be successful;
- The tree is infected by a pathogen or attacked by insects that threaten surrounding trees as determined by an arborist report or other qualified professional;
- The tree is a potential public health and safety hazard due to the risk of its falling and its structural instability cannot be remedied.
- The tree is a public nuisance by causing damage to improvements, such as building foundations, retaining walls, roadways/driveway's, patios, sidewalks and decks, or interfering with the operation, repair, or maintenance of public utilities;
- The tree has been identified by a Fire Inspector as a fire hazard;
- The tree was planted for a commercial tree enterprise, such as Christmas tree farms or orchards;
- Prohibiting the removal of the tree will conflict with CC&R's which existed at the time this chapter was adopted;
- The tree is located on land which is zoned for agriculture and that is being used for commercial agricultural purposes;
- The tree removal is by a public agency to provide for the routine management and maintenance of public land or to construct a fuel break;
- The tree removal is on a developed lot and: (1) does not exceed two protected trees within a one-year timeframe, (2) does not entail the removal of any heritage trees, and (3) does not entail the removal of any protected or heritage trees within a stream conservation area or a wetland conservation area.

Tree replacement may be required as a condition of approval of the tree removal permit. Establishment and maintenance replacement trees at a minimum ratio of two new, appropriately sized and installed trees for each tree removed. In the event that tree planting on the site is not feasible or appropriate, the Director may require in lieu of planting on the specific property, the payment of money in the amount of \$500.00 per replacement tree to be deposited into the Tree Preservation Fund managed by the Marin County Parks and Open Space Department for planting, maintenance, and management of trees and other vegetation.

## **2.0 METHODS**

On January 15, 2020 the Study Area was traversed on foot to inventory all trees located within the Study Area. WRA's ISA-Certified Arborists surveyed the area and recorded relevant tree information for each surveyed tree.

### **2.1 Tree Inventory**

Locations of surveyed trees within the Study Area were recorded using a handheld GPS unit with sub-meter accuracy. Each surveyed tree was given an aluminum tree tag with a unique identification number. DBH was calculated for surveyed trees by measuring the trunk diameter at 4.5 ft. above grade. DBH for trees that split into multiple trunks at or just below 4.5 feet were measured at the narrowest point beneath the split. DBH for multi-stem trees that split into multiple trunks at or near ground level were calculated by measuring each individual trunk and calculating the sum total of trunk diameters. In cases where multi-trunk trees had more than five main trunks, only the five largest trunks were measured. In cases where an irregular buttress or bulge occurred at 4.5 feet above ground measurements were taken above or below the irregular feature in order

to best represent the size of the tree. A complete list of all surveyed trees is provided in Appendix A.

## 2.2 Tree Assessment

General notes on the condition of trees were taken, including health, structure, and overall condition. Assessment of the health, structure, and overall condition of each tree was conducted according to the narratives listed in Table 1.

Table 1. Rating Narratives for Tree Assessment

<b>Health</b>	
Good	Tree is free from symptoms of disease and stress.
Fair	Tree shows some symptoms of disease or stress including twig and small branch dieback, evidence of fungal / parasitic infection, thinning of crown, or poor leaf color.
Poor	Tree shows symptoms of severe decline.
<b>Structure</b>	
Good	Tree is free from major structural defects.
Fair	Tree shows some structural defects in branches but overall structure is stable.
Poor	Tree shows structural failure of a major branch or co-dominant trunk.
<b>General Condition</b>	
Good	Tree shows condition of foliage, bark, and overall structure characteristic of the species and lacking obvious defect, or disease.
Fair	Tree shows condition of foliage, bark, and overall structure characteristic of the species with some evidence of stress, defect, or disease.
Poor	Tree shows condition of foliage, bark, and overall structure uncharacteristic of the species with obvious evidence of stress, defect, or disease.

## 2.3 Tree Impact Assessment

Potential impacts to all trees located within the Study Area were analyzed in GIS. The most recent project footprint was overlaid with tree survey data to determine which trees will potentially be impacted by removal (Appendix B). Any tree within or directly adjacent to the Project footprint was considered to be a potential removal impact. Potential tree impacts requiring a permit from the County include removal of any protected tree or heritage tree. The results of the impacts analysis are provided below and shown in Appendix A.

## 3.0 RESULTS

### 3.1 Tree Inventory

A total of 27 trees were identified within the Study Area. Tree species surveyed within the Study Area include coast redwood (*Sequoia sempervirens*), Monterey cypress (*Hesperocyparis*

*macrocarpa*), Monterey pine (*Pinus radiata*), blue gum (*Eucalyptus globulus*), silver wattle (*Acacia dealbata*), and blackwood acacia (*Acacia melanoxylon*). Only one of the trees surveyed is considered a heritage tree with the remaining 26 trees having no protection status per the Tree Ordinance.

The single heritage tree (Tree #930) within the Study Area is a 53-inch DBH, single trunk, coast redwood. The heritage tree is located in the southern portion of the Study Area approximately 30 feet north of Drake Avenue. A complete list of all trees surveyed is presented in Appendix A. The GPS locations of surveyed trees are shown in Appendix B.

### 3.2 Tree Assessment

The overall condition, health, and structure of trees inventoried during this assessment ranged from poor to good, with most trees ranking fair in all three categories. Twenty-two (22) of the trees surveyed within the Study Area ranked fair in general condition with most trees displaying little to no signs of maladies or decline in vigor. Eighty-five (85) percent of the trees ranked fair in health with 15 percent ranking good, further indicating the large quantity of visibly healthy trees surveyed within the Study Area. The majority of the trees surveyed ranked fair in structure, but four of the trees surveyed ranked poor mostly due to having poor growth forms. Trees that received a poor structure rating had excessive, uncorrected leans or other structural defects. Table 2 below summarizes the assessment results for all trees surveyed.

Table 2. Tree Assessment Results Summary

Criteria Assessed/Rating	Condition	Health	Structure
Good	5 (19%)	4 (15%)	2 (7%)
Fair	22 (81%)	23 (85%)	21 (78%)
Poor	0 (0%)	0 (0%)	4 (15%)

### 3.3 Tree Impact Assessment

Seven (7) trees have been identified as potentially needing to be removed to accommodate the proposed Project. One (1) of the trees identified for potential removal is considered a heritage tree per the Tree Ordinance. The remaining six trees identified for potential removal are not considered protected or heritage trees.

Potential permit, mitigation, and tree protection requirements as required by the Tree Ordinance are provided below.

## 4.0 SUMMARY AND RECOMMENDATIONS

A tree removal permit is required anytime two or more protected trees are being removed from a developed lot in a 12-month period, any tree being removed qualifies as a heritage tree, a protected tree or heritage tree is located in a stream conservation area or a wetland conservation area, or a protected tree is being removed from a vacant lot. Application requirements, public notification procedure, permit review, conditions of approval, and potential mitigation for removals

are defined by Section 22.27 of the County's Municipal Code. The County's Community Development Agency Director may attach reasonable conditions to the approval of a permit that could include one or more of the following conditions:

- Establishment and maintenance of replacement trees in conformance with the countywide plan policies, the County's landscaping objectives, the single-family residential guidelines, and/or the vegetation management requirements of the Marin County Fire Department or local fire protection district, as applicable.
- Replacement of trees at a ratio of up to three new appropriately sized and installed trees for each tree designated to be removed.
- For large properties, a management plan which designates areas of the property for preservation of stands of trees or saplings and replacement plantings as required.
- Removal of invasive exotic species.
- Posting of a bond to cover the cost of an inspection to ensure success of measures described above.

As described above, the Project will potentially remove seven trees including one heritage tree. Only the removal of the single heritage tree will require a permit from the County's Community Development Agency Planning Division. Replacement tree plantings or payment of in-lieu fees may be required as a condition of approval.

In order to avoid and minimize damage to existing trees which are not proposed for direct impact by project activities, the following measures should be implemented during construction:

- All construction activity (grading, filling, paving, landscaping etc.) shall respect the root protection zone (RPZ) around all trees within the vicinity of the project area that are to be preserved. The RPZ should be a distance of 1.0 times the dripline radius measured from the trunk of the tree. Exception to this standard could be considered on a case-by-case basis, provided that it is demonstrated that an encroachment into the RPZ will not affect the root system or the health of the tree, and is authorized by an ISA-Certified Arborist or comparable specialist.
- Temporary protective fencing shall be installed around the dripline of existing trees prior to commencement of any construction activity conducted within 25' of the tree canopy. The fence shall be clearly marked to prevent inadvertent encroachment by heavy machinery.
- Drainage will not be allowed to pond around the base of any tree.
- An ISA-Certified Arborist or tree specialist shall be retained to perform any necessary pruning of trees during construction activity.
- Should any utility lines encroach within the tree protection zone, a single, shared utility conduit shall be used where possible to avoid negative impact to trees.
- Roots exposed, as a result of construction activities shall be covered with wet burlap to avoid desiccation, and should be buried as soon as practicable.
- Construction materials or heavy equipment shall not be stored within the root protection zone of preserved trees.
- Only an ISA-Certified Arborist or comparable specialist will make specific recommendations as to where any existing trees can safely tolerate some level of fill within the drip line.
- Trenching within RPZ shall be done under the field supervision of an ISA-Certified Arborist and shall be hand dug as much as possible in addition to using auger or drill.

- Construction materials shall be properly stored away from existing trees to avoid spillage or damage to trees.

## 5.0 REFERENCES

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.). 2012. The Jepson Manual: Vascular Plants of California, second edition. University of California Press, Berkeley, California.

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APPENDIX A

TREE SURVEY TABLE

APPENDIX B  
TREE SURVEY MAP

APPENDIX C  
REPRESENTATIVE PHOTOGRAPHS