Arborist Report

Prepared at the request of:

City of Albany Public Works
Margot Cunningham, Natural Areas Coordinator
540 Cleveland Avenue
Albany, CA 94710

ALBANY HILL EUCALYPTUS TREE SURVEY

DATE: July 23, 2021

Prepared by:

SBCA TREE CONSULTING
1534 Rose Street, Crockett, CA 94525
Phone: (510) 787-3075
Fax: (510) 787-3065
Website: www.sbcatree.com

Steve Batchelder, Consulting Arborist
WC ISA Certified Arborist #228
CUFC Certified Urban Forester #134
CA Contractor License #(C-27) 53367
E-mail: steve@sbcatree.com

Molly Batchelder, Consulting Arborist
WC ISA Certified Arborist #9613A
ISA Tree Risk Assessment Qualified
E-mail: molly@sbcatree.com

Table of Contents

Assignment: SBCA Tree Consulting was requested to assess the health and safety of Eucalyptus *trees on City property in Albany Hill Park. Trees surveyed are those having the potential to impact pathways, roads, and residential areas. Specific areas include City property along Taft, Jackson, the crest trail, and the trail between the ends of Taft and Jackson.*

Appendices

Background

History – Gun powder companies planted *Eucalyptus globulus* trees on the hill in the 1860's to buffer neighbors from explosions coming from their operations on the west side of the hill.[1]

Geology of Albany Hill – The hill is composed of graywacke[2], Novato Quarry Terrain Shale, and 8 to 30 inches of silt loam.

Recent History – Trees on Albany Hill Park have been noted for decline over the past years. Early investigation identified drought conditions as the likely cause of the thinning crowns due to leaf and branch dieback. The fungal pathogen *Pseudosydowia eucalypti* was cultured from leaves; general references about *Eucalyptus* fungal leaf diseases mention that they sometimes lead to twig death and that repeated defoliation can lead to tree death. Fire history is not known.

Past Rainfall – Average rainfall for Albany is 23.62 inches/year. Rainfall has been below average 3 out of the last 4 years.

Characteristics of *Eucalyptus globulus* – This species of *Eucalyptus* tree is native to Tasmania where it normally receives around 30 inches of yearly rainfall. Until now, the primary factors that have killed the species in California are cold temperatures and drought conditions.

Eucalyptus pests – Signs of the Eucalyptus Longhorned Borer *(Phoracantha semipunctata)* was found in some downed wood. However, there is no evidence that the pest is contributing to tree decline. The imported wasp *(Avetianella longoi)* that parasitizes ELB eggs maybe responsible for minimal activity.

Preliminary Investigation – A site meeting with Igor Lancan, Margot Cunningham, Susan Frankel, Eric Folmer, and SBCA Tree Consulting occurred on 5-5-21. Notes from this meeting at located in *Appendix 4.* It was determined that the low precipitation over the past years is a significant factor in tree decline. Soil moisture level was found to be extremely dry. Enhanced opportunistic pathogen activity is likely causing damage to already stressed trees.

Fungal Analysis – Scientists from the UC Berkeley Forest Pathology and Mycology Lab visited site on 5-19-21 to collect samples for laboratory analysis. Three trees were selected and cut for the sample collection. Results of analysis are not yet available.

Summary of Arborist Recommendations

It is our recommendation that all *Eucalyptus* trees in zones EGHT, EOJT, EGJT, and ETHT[3] be removed. Most trees located in these areas are not expected to return to good health, and trees with significant targets will continue to increase in associated risk[4] as internal decay advances. Allowing the few trees (which did not meet the removal criteria) to remain will expose these trees to increased wind forces, which increases failure potential.[5] Therefore, removal of all *Eucalyptus* trees is the most efficient course of action.

---

[1] https://tendancienthill.org/fascinating-facts-about-albany-hill/
[2] **Graywacke** – Sedimentary Franciscan sandstone complex
[3] Zones associated with Albany Hill Vegetation Management Plan
[4] "**Risk** is the combination of the likelihood of an event and the severity of the potential consequences. In the context of trees, risk combines the likelihood of a conflict or tree failure occurring and affecting a target with the severity of the associate consequences- personal injury, property damage, or disruption of activities.
[5] **Stand dynamics** – Stands of trees act together to resist wind forces. When trees are removed from a stand or grove, the wind forces on the remaining trees are increased. This can be a concern when trees, which are

A TRAQ Level 2 tree safety assessment was conducted for all trees for which a root, trunk or branch failure could potentially cause damage or injury along roadways or trails. Criteria used to determine individual tree removals was based on significant branch tip dieback, presence of internal decay, and root stability concerns. Three-hundred eighteen (318) trees out of the 390 *Eucalyptus* surveyed have been identified with defects that warrant removal. Retention of any of these trees requires a Level 3 Risk Assessment[6].

Poor tree health, caused by lack of soil moisture and opportunistic fungal attack, has resulted in reduced carbohydrate production. This impacts the level of new wood production. Reduced wood production is problematic when internal decay is present, which is a significant issue on the hill. Internal decay was found in all trees with fire scars and trees that developed from old stump sprouts. It was also noted in trees (by sounding the trunks with a mallet for hollowness) that did not have open cavities.

This north-east exposed slope could be returned to an oak woodland as it likely was in the days when the Lisjan (Ohlone) original people were stewards of the land.

In the Monarch Butterfly area ESHT, it is recommended that only designated trees be removed. Other trees can remain and be mulched and potentially irrigated. More droughty *Eucalyptus* species can be planted to preserve the butterfly habitat.

Action Summary

390 trees surveyed – All trees surveyed have a metal number tag attached as well as colored flagging tape to indicate the recommended action.

318 trees recommended for removal –All the trees recommended for removal are within target range of roads or pathways.

4 trees requiring immediate removal – Four trees are noted as High Priority Removals due to serious safety concerns.

39 trees requiring dead wood pruning – Dead wood is a significant safety concern, particularly in higher target areas.

8 trees requiring pruning to reduce branch end weight – These are overweighted or over extended stems above roadway or pathways.

21 trees requiring no action – These trees pose no significant safety concern at present and require no action.

Tree Condition Summary

Health – Photos contained in *Appendix 3* provide examples of the observed Live Crown Ratios[7] and health conditions.

currently considered low risk, receive increased wind exposure due to adjacent tree removal" (Dunster, Julian A. *Tree Risk Assessment Manual, Second Edition.* U.S.A.: International Society of Arboriculture, 2017. Print.).

[6] **Level 3 Risk Assessment** – Advanced assessments are performed to provide detailed information about specific tree parts, defects, targets, or site conditions. Specialized equipment, data collection and analysis, and/or expertise are usually required for advanced assessments (Dunster).

[7] **Live Crown Ratio** - The Live Crown Ratio is **the % of total tree height that supports live foliage**. For example: if foliated branches reached from the top of the tree all the way to the ground, that tree would have an LCR of 100%,

- 31 trees were found to be in Good health with Live Crown Ratios estimated to be at 50-100%.
- 84 trees are in Fair or Fair-Good health condition with Live Crown Ratios at 10-100%
- 68 trees are in F-P health with Live Crown Ratios estimated at 0-50%
- 196 trees are in Poor health with Live Crown Ratios at 0-10%
- 11 trees are dead with a 0% Live Crown Ratio

Survey Procedure

Potential target – Trees selected for inspection were those for which a structural failure could potentially impact people, vehicles, and/or structures in close proximity.

Visual inspection – Two arborists inspected each tree, looking at base and crown for cavities, signs of decay, dead wood, live crown ratio, and structural safety issues. Defects were recorded.

Trunk sounding – The lower 8 feet of the trunk was sounded with a mallet for signs of decay. There were a few trees with no signs of fire scars that appeared hollow when sounded.

DBH – The diameter of all trees was measured at 54-inches above soil grade and recorded.

Recommendation – Based upon inspection, trees were recommended for either: Removal, Pruning or No Action Needed. Pink/orange tape indicates removal; yellow tape is prune; blue tape was used when removals are recommended in the butterfly habitat zone. Trees without flagging tape were deemed to require no action.

Criteria used for tree removal recommendations – Trees recommended for removal can be retained only after more investigation is conducted in accordance with TRAQ[8] guidelines and the City assumes associated risk.

- Top dead – One-hundred ninety (190) trees were observed with dead tops. This indicates the root system is in decline and not able to support its crown and the tree has entered into strain[9]. Even if the dead top is pruned out, the tree is considered a future safety concern.

- Decay – One-hundred fifty (150) trees were observed to have internal decay. This was determined by sounding the trunk with a rubber mallet for hollowness and/or the presence of a decay cavity, including fire scars at the base. Fire scars develop when wood and leaf debris has been allowed to build-up at the base of the tree. This is generally on the uphill side of the trees. The fire kills the cambium and results in a dead area that is open to decay. One of the trees selected by UC scientists for sampling had a fire scar and after it was felled, significant hollowness was observed. See *Appendix 3* for photos.

---

if a tree had no living branches anywhere on the tree it would have an LCR of 0% (dead). In survey data, all trees were given a number: 1 is 0-10%, 2 is 10-50%, 3 is 50-100%

[8] TRAQ is Tree Tree Risk Assessment Qualified. Tree safety inspection conducted by qualified arborist in accordance with TRAQ guidelines.

[9] "Health is the ability to resist strain. Strain is a nonreversible condition resulting from excess stress. Stress is a reversible condition. The system begins to operate near the limits for which it was designed. The system starts to wobble. When wobble continues, a part or even the whole stem breaks. Stress goes to strain" (Shigo, Alex L. *Modern Arboriculture.* New Hampshire: Shigo and Trees, Associates, 1991. Print.)

Some trees without a fire scar were noted with significant swelling of the trunk. It is likely that the fire-scar may have been minimal on these trees and was able to close, but not before decay entered the structure.

- Root anchoring concern – Ninety-six (96) trees located on slopes above roads are recommended for removal. All these trees have a significant target value. When strong winds blow, the force is transferred to the roots that tend to loosen the bank soil, graywacke (sandstone) in this case, resulting in greater erosion of the bank.

- Stump sprouts – Sixty-nine (69) trees have developed as stump sprouts, or trees that have grown back from the stump after being cut down. Because the prior tree stump eventually rots, the new growth is not always well anchored.

Criteria for determining pruning needs

- Dead wood – Three-hundred six (306) trees were noted with dead wood. Thirty-nine (39) were assigned pruning to remove dead wood if there is a target and the tree is not otherwise recommended for removal.

- Heavy lateral branches – Eight (8) trees were noted with heavy lateral branches and branch end weight reduction could improve tree safety.

- Problematic branch attachment – Trees with defective stem attachments (included bark) were also noted for safety pruning.

Recommendations

Removal of the four trees noted as High Priority Removals – Removal of these trees should be the first action item.

Removal of all *Eucalyptus* trees east of the trail – This recommendation is the most practical course of action. The price for future *Eucalyptus* tree failures impacting targets is estimated to be much higher.

- **Zones EGHT and ETHT** – All of the trees between Taft and the ridge trail were included in the survey. Most have been recommended for removal. Many are located on the slope with root stability concerns. A greater number of past tree root failures were noted in this area.

- **Zones EGHT, EOJT and EGJT** – All trees with targets between Taft and Jackson were surveyed. The native oak trees are well represented in this area and will not pose the same safety concerns as do the *Eucalyptus.* Removal of the *Eucalyptus* trees will allow the oaks to thrive. A crane will be required to reduce damage to the oak trees.

- **Zone ESHT and EGHT, Trees on West Side of Trail –** Numerous trees on the west side of the trail have been recommended for removal. Some are in the area previously visited by Monarch Butterflies. Some of the trees in the butterfly habitat that have been recommended for removal could be retained if they are cleared by a TRAQ Level 3 safety assessment.

Retention of trees having no significant safety concern at present – Decisions regarding retention of trees having a significant "target" rating but not recommended for removal will be up to City. There are some concerns for trees that will be subject to increased wind exposure as a result of other trees being removed.

Stand dynamics – Stands of trees act together to resist wind forces. When trees are removed from a stand or grove, the wind forces on the remaining trees are increased. This can be a concern when trees, which are currently considered low risk, receive increased wind exposure due to adjacent tree removal.

Tree Removal Scenarios

There are several ways the tree removal can be carried out:

High Priority Tree Removals – The four trees noted as high priority should be removed as soon as is possible.

Surveyed trees along roads and trails – Large dead branches over pathways and roads are of concern. If these trees are not removed in the short term, pruning to reduce risk associated with branch failure is recommended.

Logs and chips to remain – Cut trees, chip brush and allow mulch and logs to remain on slope.

Harvest trees for pulp wood– There are contractors that may be able to harvest the logs. Brush would be chipped back on to the hillside.

Concluding Remarks

Level 2 risk inspection conducted – The safety inspection conducted included visual inspection of the tree and root crown and sounding of the trunk for internal hollowness. It did not entail invasive internal decay investigation or aerial inspection of the tree crowns. As such, all trees with a significant "target" that show signs of decay, trunk wounds, problematic stem attachments, stump sprouts or dead tops have been recommended for removal. Four trees have been noted for urgent action due to their safety condition.

Retention of trees recommended for removal – It is true that many of the trees recommended for removal may not have immediate safety concerns. Any desire to retain trees recommended for removal must include a more extensive tree risk assessment. It is recommended that such trees receive a TRAQ LEVEL 3 ASSESSMENT. **SBCA Tree Consulting will accept no liability for trees designated for removal if not removed.**

Tree health – Tree branch dieback and sparse foliage (low live crown ratio) are both indications of poor tree health. The results of investigation into the reasons for the thinning foliage are not yet available. However, trees having limited live foliage are suffering from minimal carbohydrate production. This impacts the ability of the tree to develop new wood to counter decay advancement and to thrive in the future.

Oak woodland – The north and east sides of the hill are currently populated by a significant amount of native Coast Live Oak *(Quercus agrifolia).* Coast Live Oak trees favor the north slope exposure and reduced wind exposure on the east side. This exposure provides more soil moisture and reduced leaf transpirational water loss due to wind. Coast Live Oak is known to be fire resistant and poses less of a safety concern from tree failure. Allowing the oak overstory to take hold will reduce light penetration that allows for fire ladder fuels growth below.

Management of understory shrubs – Removal of the *Eucalyptus* overstory will allow for additional sunlight and soil moisture for the trees and shrubs that remain. Having a Coast Live Oak overstory will provide the best fire suppression and reduce long term fire clearance needs. Understory shrubs, such as Toyon and Poison Oak, will require management to reduce fire ladder concerns.

- *Heteromeles arbutifolia* – Toyon is found over most of the hillside. Dead toyon is a concern for fire. Toyon can also harbor and spread sudden oak death (*Phytophthora rumorum*) to the oak trees.
- *Toxicodendron diversilobum* – Poison Oak is also present throughout. Some management of poison oak will likely be required along trails.

Management of eucalyptus stump sprouts – It is not recommended that herbicide be used due to the potential for translocation to trees designated for retention. It is recommended that the new growth be removed on a regular basis. Without new carbohydrate production, the tree will eventually die.

Replanting

- **Use of seedlings** – Seedling are most efficient and effective for replanting due to higher survival rate.
- **Seedling Protection** - Use of Tubex tree shelters adds protection for the trees and can promote faster growth.
- **Plant in late fall season** – The best time to plant trees is in the late fall season due to low transpirational requirements and sufficient time for root development before spring push.
- **Early irrigation** – If drought tolerant tree species are planted as seedings, in the fall with sufficient planting site preparation and adequate rain fall, minimal if any irrigation will be required.
- **Weed clearance and mulch** – Essential for trees to thrive.
- **Deer protection** – Deer are known to eat new leaves and damage young trees with their antlers. Protection is recommended.
- **Pruning needs** – In areas where clearances are not required, only defective branch attachments are pruned on the young trees.

End

Report submitted by:

Steve Batchelder, Consulting Arborist
ISA Certified Arborist WE 228A
CaUFC Certified Urban Forester #138
Calif. Contractor Lic. (C-27) 533675

Molly Batchelder, Consulting Arborist
WC ISA Certified Arborist #9613A
Tree Risk Assessment Qualified (TRAQ)

COLUMN HEADING DESCRIPTIONS

Tag# - Indicates the number tag attached to tree
Area - City of Albany designated area
DBH - Diameter measured in inches at 4.5 feet above soil grade, unless otherwise indicated
Health -Tree Health: E is Excellent, G is Good, F is Fair, P is Poor, D is Dead or Dying
Live Crown Ratio - 1 is 0-10%, 2 is 10-50%, 3 is 50-100%
Top Dead - 1 is Yes: Recommend removal of all trees
Dead wood - Dead wood observed in tree, 1 is Yes
Decay - Internal decay suspected or signs observed: Fire scar, Hollowness,
Root anchoring concerns - Trees located on rocky slope; tres observed with other root stability issues - Recommend removal of all tre
Stump sprout - Previously cut trees that have sprouted back- Recommend removal of all trees
Target - Target should the tree experience failure
Suitability for Retention - Based on Tree Condition: G is Good, F is Fair, P is Poor
Action - Recommended action
Notes - See below

ABBREVIATIONS AND DEFINITIONS

Notes

Embedded Bark (EB) - AKA Included Bark, this is a structural defect where bark is included between the branch attachment so that the wood cannot join. S propensity for failure.

Codominant (CD) - A situation where a tree has two or more stems which are of equal diameter and relative amounts of leaf area. Trees with codominant are inherently weaker than stems, which are of unequal diameter and size.

Codominant w/ Embedded Bark (CDEB) - When bark is embedded between codominant stems, failure potential is very high and pruning to mitigate the de

Dead Wood (DW) - Interior dead branches noted in tree.

End Weight Reduction (EWR) - Reduction of end branch end weight recommended to reduce potential for limb failure.

Internal Decay (ID) - Noted by sounding with a mallet or visible cavities/large pruning wounds.

Multi (Multi) - Multiple trunks/stems emanate from below breast height (4.5' above soil grade).

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
1	EGHT	32.5	F-P	2		1				Road	F-P	DW removal
2	EGHT	39	P	2		1	Fire scar			Road	P	DW removal

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
3	EGHT	36, 9, 12	P	1	1	1				None	P	Remove
4	EGHT	9	P	1	1	1				Trail	P	Remove
5	EGHT	25	P-D	1	1	1	Fire scar			Trail, Road	P	Remove
6	EGHT	27	P-D	1	1	1	Fire scar, Trunk decay			Trail, Road	P	Remove
7	EGHT	22	P-D	1	1	1	Fire scar			Trail, Road	P	Remove
8	EGHT	30	P	1	1	1	Fire scar			Trail, Road	P	Remove
9	EGHT	32	P	1	1	1	Fire scar			Trail, Road	P	Remove
10	EGHT	35	P	1.5	1	1				Trail, Road	P	
11	EGHT	36	P	1		1				Trail, Road	P	Consider removal
12	EGHT	15	D	0	1	1				Trail	P	High priority removal
13	EGHT	32	P	1	1	1				Trail, Road	P	Remove
14	EGHT	19	P	1	1	1				Road	P	Remove
15	EGHT	35.5	P	2		1				Road	F-P	DW removal
16	EGHT	29.5	P	2						Road	F-P	
17	EGHT	22	P-D	1	1	1				Road	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
18	EGHT	22	P-D	1	1	1	Fire scar			Road	P	Remove
19	EGHT	39	P	1	1	1				Road	P	Remove
20	EGHT	28	P-D	1	1	1				Road	P	Remove
21	EGHT	35	P	1.5		1	Fire scar			Road	P	Remove
22	EGHT	25	P-D	1	1	1	Fire scar			Road	P	Remove
23	EGHT	35	F-P	2		1				Road	P	
24	EGHT	37	P	2		1				Road	P	DW removal over road
25	EGHT	45	P	2	1	1	Fire scar			Road	P	Remove
26	EGJT	36	P	2		1	Fire scar			Road	P	Remove
27	EGJT	28	P	2		1				Road	P	DW removal over road
28	EGJT	36	P	1	1	1	Fire scar			Road	P	Remove
29	EGJT	38	F-P	2		1				Road	F	DW removal over road
30	EGJT	28	F-P	2		1				Road	F-P	DW removal over road
31	EGJT	18, 17, 9	F	2		1				Road	F	Minor dw removal over road
32	EGJT	17, 35	F-P	2		1				Road	F-P	DW removal over road
33	EGJT	42	F-P	2		1	Fire scar			Road	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
34	EGJT	54, 22	P	1		1	Fire scar			Road	P	Remove
35	EGJT	17	P	1	1	1				Road	P	Remove
36	EGJT	18, 12, 11	F	3		1				None	G	
37	EGJT	70	F	2		1				Road	F	DW removal over road
38	EGJT	13	F	2						Road	F	
39	EGJT	63	P	2	1	1				Road	P	Remove
40	EGJT	18, 7	F-P	2		1				Road	F-P	DW removal over road
41	EGJT	27	F	3		1				Road	F	DW removal over road
42	EGJT	25, 18	F	3		1				Road	F	DW removal over road
43	EGJT	22	P	2	1	1				Road	P	Remove
44	EGJT	20, 13	F	3						Road, Residence	F	
45	EGJT	48	G	3		1				Residence	G	
46	EGJT	30	G	3		1				Road	G	DW removal over road
47	EGJT	23, 15	F	3	1	1				Road, Residence	G	DW removal over road
48	ETHT	27, 27	F-G	3				1		Road, Residence	P	Remove
49	ETHT	9, 13, 14, 19	F-G	2.5				1		Road, Residence	P	Remove
50	ETHT	7, 7, 6, 6, 5, 5	G	3				1	1	Road, Residence	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
51	ETHT	12, 35, 20	G	3				1		Road, Residence	P	Remove
52	ETHT	Multi	G	3				1	1	Road	P	Remove
53	ETHT	Multi	F	2				1	1		P	Remove
54	ETHT	Multi	G	3				1	1	Road	P	Remove
55	ETHT	Multi	G	3				1	1	Road	P	Remove
56	ETHT	Multi	G	3				1	1	Road	P	Remove
57	ETHT	10, 6	G	3				1		Road	P	Remove
58	ETHT	10.5	G	3				1		Road, Residence	P	Remove
59	ETHT	16	G	3		1		1		Road, Residence	P	Remove
60	ETHT	6.5	P	1	1	1		1		Road	P	Remove
61	EGHT	12, 9	F-P	2	1	1		1		Road, Residence	P	Remove
62	EGHT	12	F-P	2				1		Road, Residence	P	Remove
63	ETHT	12, 10, 11, 13, 11	F	2				1		Road, Residence	P	Remove
64	ETHT	9, 7, 6, 6	F	2	1			1	1	Residence	P	Remove
65	ETHT	9, 8, 6	F	2				1	1	Road	P	Remove
66	ETHT	9	F	2				1		Road	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
67	ETHT	20, 10, 7	F-G	3				1		Road, Residence	P	Remove
68	ETHT	18, 11, 10	F-G	3				1		Road, Residence	P	Remove
69	ETHT	15	F-G	2				1		Road	P	Remove
70	ETHT	16, 27	F-P	2		1		1		Road, Residence	P	
71	ETHT	11, 11	F-P	2	1	1		1		Road	P	
72	ETHT	9, 7, 6	F	2				1		Road	P	Remove
73	ETHT	18	F-P	2		1		1		Road	P	Remove
74	ETHT	10, 19	F	2		1		1		Road	P	Remove
75	ETHT	20	F-P	2		1		1		Road	P	Remove
76	ETHT	29	F	2		1		1		Road	P	Remove
77	ETHT	35	F-P	1	1	1		1		Road	P	Remove
78	EGHT	33	F	2		1		1		Road	P	Remove
79	EGHT	18	F-P	1.5		1		1		Road	P	Remove
80	EGHT	15	F-P	1.5		1		1		Road	P	Remove
81	EGHT	14	F	2				1		Road	P	Remove
82	EGHT	19	F	2		1		1		Road	P	Remove
83	EGHT	25	F-P	2		1				Road, trail	F-P	Dw removal

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
84	EGHT	35	F-P	2		1				Road, trail	F-P	Dw removal
85	EGHT	34	F-P	1		1				Road, trail	F-P	Dw removal
86	EGHT	12, 16	F-P	2		1			1	Road, trail	P	Remove
87	EGHT	18, 19, 11, 12, 37	F-P	2		1		1	1	Road	P	Remove
88	ETHT	12	P	1	1	1		1		Road	P	Remove
89	ETHT	25	P	1	1	1	Hollow			Road	P	Remove
90	ETHT	40, 11	P	1	1	1	Hollow	1		Road	P	High priority removal
91	ETHT	30	P	1	1	1		1		Road	P	Remove
92	ETHT	10, 7, 6, 9, 8	P	1	1	1		1	1	Road	P	Remove
93	ETHT	7, 8, 11	P	1	1	1		1	1	Road	P	Remove
94	ETHT	8, 22, 10, 10	P	1	1	1		1	1	Road	P	Remove
95	ETHT	8, 9, 20, 13, 6	F	2			Hollow	1	1	Road	P	Remove
96	ETHT	11	F	2				1		Road	P	Remove
97	ETHT	9, 6	P	1	1	1		1		Road	P	Remove
98	ETHT	15, 7, 10, 6, 6	P	1	1	1		1	1	Road	P	Remove
99	ETHT	24	P	1	1	1	Fire scar	1		Road	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
100	ETHT	30	P	1	1	1	Fire scar	1		Road	P	Remove
101	ETHT	35.5	P	1	1	1	Fire scar	1		Road	P	Remove
102	ETHT	26.5	P	1	1	1		1		Road	P	Remove
103	ETHT	23.5	P	1	1	1		1		Road	P	Remove
104	ETHT	10	F-P	2			Fire scar	1		Road	P	Remove
105	ETHT	19	P	1	1	1	Fire scar	1		Road	P	Remove
106	ETHT	32	P	1	1	1				Road	P	Remove
107	ETHT	18, 5	P	1	1	1	Hollow, Fire scar			Road	P	Remove
108	ETHT	9	P	1				1		Road	P	Remove
109	ETHT	25	P	1	1	1		1		Road	P	Remove
110	ETHT	33	P	1.5		1				Road	P	Remove
111	ETHT	20	P	1	1	1				Road	P	Remove
112	ETHT	25	D	0	1	1	Fire scar	1		Road	P	High priority removal
113	ETHT	16.5	P	1	1	1		1		Road	P	Remove
114	ETHT	21	P	1	1	1	Fire scar	1		Road	P	Remove
115	ETHT	28	P	1	1	1		1		Road	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
116	ETHT	24	P	1	1	1		1		Road	P	Remove
117	ETHT	22	P	1	1	1		1		Road	P	Remove
118	ETHT	18, 6	P	1	1	1		1		Road	P	Remove
119	ETHT	29, 27	P	1	1	1				Road	P	Remove
120	ETHT	22.5	P	1	1	1				Road	P	Remove
121	ETHT	13, 13, 15.5, 20, 12	F-G	3			Trunk, fire scar	1	1	Road	P	Remove
122	ETHT	15, 36	P	1	1	1	Fire scar			Road	P	Remove
123	ETHT	25	F	2		1		1		Road	P	Remove
124	EGHT	29, 6, 8	F	2			Fire scar	1		Road	P	Remove
125	ETHT	40	F-P	2		1		1		Road	P	Remove
126	ETHT	21, 38, 9	F-G	2		1	Fire scar	1		Road	P	Remove
127	ETHT	12	P	1	1	1				Road	P	Remove
128	EGHT	15.5, 18	F-P	2			Trunk		1	Path	P	Remove
129	EGHT	17	F	2			Trunk			Path	P	Remove
130	EGHT	17.5, 10, 14	F-P	1			Trunk		1	Path	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
131	EGHT	14, 12, 18.5	F-P	2			Trunk		1	Path	P	Remove
132	EGHT	16	F-P	2		1	Trunk			Path	P	Remove
133	EGHT	16	P	1	1	1				Path	P	Remove
134	EGHT	23, 13.5, 19	P	1		1	Hollow		1	Path	P	Remove
135	EGHT	11	P	1	1	1	Hollow			Path	P	Remove
136	EGHT	23	P	1	1	1	Hollow			Path	P	Remove
137	EGHT	17	P	1	1	1				Path	P	Remove
138	EGHT	15, 8.5	F-P	1	1	1	Trunk		1	Path	P	Remove
139	EGHT	8.5, 5	P	1	1	1	Trunk		1		P	Remove
140	EGHT	10, 11	P	1	1	1	Trunk		1	Path	P	Remove
141	EGHT	11	P	1	1	1	Trunk		1	Path	P	Remove
142	EGHT	18.5, 6.5, 16	P	1	1	1				Path	P	Remove
143	EGHT	15, 15, 8	P	1	1	1	Trunk		1	Path	P	Remove
144	EGHT	24	P	1	1	1				Path	P	Remove
145	EGHT	24, 25	P	1	1	1	Trunk			Path	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
146	EGHT	32, 16	F-P	2			Trunk		1	Path	P	Remove
147	EGHT	16, 12, 8.5	P	1		1			1	Path	P	Remove
148	EGHT	23	P	1	1	1				Path	P	Remove
149	EGHT	34.5	P	2			Fire scar			Road	P	Consider removal
150	EGHT	16	P	1	1	1			1	Path	P	Remove
151	EGHT	22, 22	F	2		1	Fire scar		1	Path	P	Remove
152	EGHT	26	P	2	1	1				Road	P	Remove
153	EGHT	9.5, 13.5, 12	F-P	2		1			1	Path	P	Remove
154	EGHT	42	P	2	1	1				Path	P	Remove
155	EGHT	39	F-P	2		1				Path	F	Dw removal
156	EGHT	22	F	2		1	Fire scar			Path	P	Remove
157	EGHT	33	F	2		1				Path	F	Dw removal
158	EGHT	25	P	1	1	1				Path, Road	P	Remove
159	EGHT	20	P	1	1	1				Path, Road	P	Remove
160	EGHT	25	P	1	1	1	Hollow, Fire scar			Road, Path	P	Remove
161	EGHT	27	P	1	1	1	Fire scar			Path	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
162	EGHT	25	F	2			Hollow			Path	P	Remove
163	EGHT	21	P	1	1	1	Fire scar			Path	P	Remove
164	EGHT	26	F-P	2		1				Path, Road	F	Dw removal
165	EGHT	33	P	1	1	1	Fire scar			Road	P	Remove
166	EGHT	23	F-P	2		1				Path	F-P	Dw removal
167	EGHT	26, 15	F-P	2		1				Path	F-P	Dw removal
168	EGHT	25	P	1	1	1				Path, Road	P	Remove
169	EGHT	29	P	1	1	1				Path, Road	P	Remove
170	EGHT	20.5	D	0	1	1	Trunk				P	Remove
171	EGHT	20	F-P	2		1					F-P	Dw removal
172	EGHT	52	P	1	1	1				Path	P	Remove
173	EGHT	33, 13, 5	F	2		1					F-P	Dw removal
174	EGHT	20, 21	F-P	2			Trunk			Path	P	Remove
175	EGHT	45	F	2						Path	F	Dw removal
176	EGHT	26	P	1	1	1	Trunk			Path	P	Remove
177	ETHT	36, 21	F	2		1				Path	F	Dw removal

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
178	ETHT	37	F	2		1				Path	F	Dw removal
179	ETHT	24	F-P	2	1	1	Fire scar			Path	P	Remove
180	ETHT	52	F	2		1	Fire scar			Path	F	Dw removal
181	ETHT	32	D	0	1					Path	P	Remove
182	ETHT	27	D	0	1					Path	P	Remove
183	ETHT	23	D	0	1					Path	P	Remove
184	ETHT	25, 8	F-P	2	1	1				Path	F	Dw removal
185	ETHT	34	F	2		1	Trunk, Base			Path	P	Remove
186	ETHT	9, 13	F	2							F-P	
187	ETHT	12.5	F-P	1	1						F-P	
188	ETHT	32	P	1	1	1	Hollow			Path	P	Remove
189	ETHT	41	P	1	1					Path	P	Remove
190	ETHT	23	P	2	1	1				Path, Road	P	Remove
191	ETHT	25	D	0	1	1				Road	P	Remove
192	ETHT	37	P	1	1	1				Path	P	Remove
193	ETHT	37	P	1	1	1				Road	P	Remove
194	ETHT	27.5	P	1	1	1				Road	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
195	ETHT	35, 22	P	1	1	1	Fire scar			Road	P	Remove
196	ETHT	42	P	1	1	1		1		Road	P	Remove
197	ETHT	20	F	2						Road	F	
198	EGHT	14	F-P	2			Trunk			Path	P	Remove
199	EGHT	15, 28	F-P	2			Trunk, Hollow			Path	P	Remove
200	ESHT	11, 12.5	F	2					1	Path	P	Remove
201	ESHT	27.5	F-P	2		1	Trunk hollow, Firescar			Path	P	Remove
202	ESHT	8, 15, 8.5	F	2		1			1	Path	P	Remove
203	ESHT	28	F	2		1	Firescar			Path	P	Remove
204	ESHT	33	P	1		1	Firescar			Path	P	Remove
205	ESHT	31	P	1		1	Firescar			Path	P	Remove
206	ESHT	10, 8	P	1		1			1		P	Remove
207	ESHT	7.5, 15, 11	P	1		1			1	Path	P	Remove
208	ESHT	11.5, 28	P	1	1	1	Firescar			Path	P	Remove
209	ESHT	7, 19.5, 23, 23.5	P	1		1			1	Path	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
210	ESHT	10	F-P	1		1			1	Path	P	Remove
211	ESHT	41	P	1	1	1	Firescar			Path	P	Remove
212	ESHT	22, 11.5, 15, 14.5, 10	P	1	1	1	Trunk		1	Path	P	Remove
213	ESHT	21, 11, 22	F-P	2		1	Trunk		1	Path	P	Remove
214	ESHT	23.5, 22, 10, 15	F	2		1				Path	P	Remove
215	ESHT	14, 17	F	2		1				Path	F-P	Ewr over path
216	ESHT	17.5, 12, 10.5	F-P	1		1	Trunk		1	Path	P	Remove
217	ESHT	10, 19, 12	F-P	2		1	Trunk		1	Path	P	Remove
218	ESHT	15.5, 17, 20	F-P	2		1	Trunk		1	Path	P	Remove
219	ESHT	13	F-P	2		1	Trunk		1	Path	P	Remove
220	ESHT	17, 25	F-P	2		1	Trunk		1	Path	P	Remove
221	ESHT	8, 7.5	F-P	2						Path	P	Remove
222	ESHT	17, 22.5	P	1		1	Trunk			Path	P	Remove
223	ESHT	21, 19, 8	P	1	1	1	Fire scar			Path	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
224	ESHT	16, 21	F	2		1	Trunk		1	Path	P	Remove
225	ESHT	40	F-P	2		1				Path	F-P	Ewr over path
226	ESHT	5, 17.5, 10, 15.5	P	1		1			1	Path	P	Remove
227	ESHT	24	P	1	1	1	Fire scar				P	High priority removal
228	ESHT	36	P	1	1	1	Fire scar			Path	P	Remove
229	ESHT	21, 13	P	1	1	1	Fire scar		1	Path	P	Remove
230	ESHT	12, 16, 16, 7.5	P	1	1	1			1	Path	P	Remove
231	ESHT	14.5, 13.5, 5, 10, 20	F-P	2		1				Path	P	Ewr over path
232	ESHT	51	F	2		1			1	Path	P	Remove
233	ESHT	30	P	2	1	1			1	Path	P	Remove
234	EGHT	20, 7, 12, 8	F-P	2		1	Firescar		1	Path	P	Remove
235	EGHT	23	F	2		1	Fire scar		1	Path	P	Remove
236	EGHT	35	F-P	2	1	1	Fire scar			Path	P	Remove
237	EGHT	22	D	0	1	1					P	Remove
238	EGHT	8, 11, 23	P	1		1	Firescar		1	Path	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
239	EGHT	8.5, 12.5, 12	P	1	1	1	Hollow		1	Slope	P	Remove
240	EGHT	16, 18	P	1	1	1	Fire scar			Slope	P	Remove
241	EGHT	39	F-P	2		1				Slope, Path	P	Ewr over path
242	EGHT	47	P	2	1	1	Fire scar			Slope, Path	P	Remove
243	ESHT	8, 7	P	1	1	1	Fire scar		1	Slope	P	Remove
244	ESHT	39	F-P	2	1	1	Fire scar			Slope	P	Remove
245	ESHT	29, 6.5	F-P	2	1					Slope	F-P	
246	ESHT	50	P	1	1	1				Slope	P	Remove
247	ESHT	33	P	1	1	1				Path	P	Remove
248	ESHT	30	P	1	1	1				Path	P	Remove
249	ESHT	42, 13, 11.5	F-P	2						Path	F-P	Ewr over path
250	EGHT	27, 27, 29	P	2	1	1				Path	P	Remove
251	EGHT	18, 36	P	1	1	1				Path	P	Remove
252	Private	27	P	1	1	1				Path	P	Remove
253	Private	32	P	1	1	1				Path	P	Remove
254	Private	29, 31,	P	1	1	1				Path	P	Ewr over path

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
255	Private	29	P	1	1	1				Path	P	Ewr over path
256	Private	20	P	1	1	1				Path	P	Remove
257	Private	22	P	1	1	1				Path	P	Remove
258	Private	48	F-P	2		1	Firescar			Path	P	Remove
259	Private	28	P	1		1				Path	P	Remove
260	Private	44	F-P	2		1				Path	F-P	Dw removal
261	EGHT	19	D	0	1	1	Fire scar			Path	P	Remove
262	EGHT	29	P	1	1	1	Fire scar			Path	P	Remove
263	EGHT	31	P	1	1	1	Fire scar			Path	P	Remove
264	EGHT	22	P	1	1	1	Fire scar			Path	P	Remove
265	EGHT	26	P	1	1	1	Fire scar			Path	P	Remove
266	EGHT	25	P	1	1	1	Fire scar			Path	P	Remove
267	EGHT	29	P	1	1	1	Fire scar			Path	P	Remove
268	EGHT	26	P	1	1	1				Path	P	Remove
269	EGHT	33	P	1	1	1				Path	P	Remove
270	EGHT	36	P	1	1	1				Path	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
271	EGHT	33	P	1	1	1				Path	P	Remove
272	EGHT	30	P	1	1	1	Fire scar			Path	P	Remove
273	EGHT	30	P	1	1	1	Fire scar			Path	P	Remove
274	EGHT	24	P	1	1	1	Fire scar			Path	P	Remove
275	EGHT	31	P	1	1	1	Fire scar			Path	P	Remove
276	EGHT	23	P	1		1	Fire scar			Path	P	Remove
277	EGHT	13	D	0	1	1	Fire scar			Path	P	Remove
278	EGHT	41	F-P	2		1	Fire scar			Path	P	Remove
279	EGHT	25	P	1	1	1				Path	P	Remove
280	EGHT	33	F-G	3		1				Path	G	Dw removal
281	EGHT	37	F-G	2		1				Path	G	Dw removal
282	EGHT	35	P	1	1	1				Path	P	Remove
283	EGHT	32	P	1	1	1				Path	P	Remove
284	EGHT	20	P	1	1	1	Fire scar			Path	P	Remove
285	EGHT	22	P	1	1	1	Fire scar			Path	P	Remove
286	EGHT	28	P	1	1	1	Fire scar			Path	P	Remove
287	EGHT	22	P	1	1	1	Fire scar			Path	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
288	EGHT	18	P	1	1	1	Fire scar			Path	P	Remove
289	EGHT	30	P	1	1	1				Path	P	Remove
290	EGHT	25	P	1	1	1				Path	P	Remove
291	EGHT	25	P	1	1	1				Path	P	Remove
292	EGHT	44	F	2		1	Fire scar			Path	P	Remove
293	EGHT	23	P	1	1	1	Fire scar			Path	P	Remove
294	EGHT	25	P	1	1	1	Fire scar			Path	P	Remove
295	EGHT	27	P	1	1	1	Fire scar			Path	P	Remove
296	EGHT	18	P	1	1	1	Fire scar			Path	P	Remove
297	EGHT	53	F-P	2		1	Fire scar			Path	P	Remove
298	EGHT	20	P	1	1	1	Fire scar			Path	P	Remove
299	EGHT	21	P	1	1	1	Fire scar			Path	P	Remove
300	EGHT	32	P	1	1	1				Path	P	Remove
301	EGHT	22	P	1	1	1				Path	P	Remove
302	EGHT	15	P	1	1	1				Path	P	Remove
303	EGHT	21	P	1	1	1	Fire scar			Path	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
304	EGHT	22.5	P	1	1	1	Fire scar			Path	P	Remove
305	EGHT	17	P	1	1	1	Fire scar			Path	P	Remove
306	EGHT	20	P	1	1	1	Fire scar			Path	P	Remove
307	EGHT	28	P	1	1	1	Hollow			Path	P	Remove
308	EGHT	29	P	1	1	1	Fire scar			Path	P	Remove
309	EGHT	22	P	1		1				Path	P	Remove
310	EGHT	22	P	1	1	1	Fire scar			Path	P	Remove
311	EGHT	27	D	0	1	1	Fire scar			Path	P	Remove
312	EGHT	25	P	1	1	1				Path	P	Remove
313	EGHT	35	P	1	1	1	Fire scar			Path	P	Remove
314	EGHT	23	P	1	1	1	Fire scar			Path	P	Remove
315	EGHT	21	P	1	1	1	Fire scar			Path	P	Remove
316	EGHT	30	P	1	1	1	Fire scar			Path	P	Remove
317	EGHT	26	P	2	1	1	Hollow			Path	P	Remove
318	EGHT	34	P	1	1	1				Path	P	Remove
319	EGHT	21	P	1	1	1	Fire scar			Path	P	Remove
320	EGHT	40	F-P	2		1				Slope	F	Dw removal

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
321	EGHT	27	F-P	2		1				Slope	P	Dw removal
322	EGHT	40	F-P	2		1				Slope	P	Dw removal
323	EGHT	18	P	1	1	1				Slope	P	Remove
324	EGHT	24	P	1	1	1				Path	P	Remove
325	EGHT	17	P	1	1	1				Slope	P	Remove
326	EGHT	21	P	1	1	1				Path	P	Remove
327	EGHT	24	P	1	1	1	Fire scar			Path	P	Remove
328	EGHT	24	P	1	1	1	Hollow			Path	P	Remove
329	EGHT	11.5, 23	F	2		1				Path	F	
330	EGHT	20	F	2						Path	F	
331	EGHT	17	F-P	1						Path	F	
332	EGHT	1, 23, 14	F	2						Path	F	
333	EGHT	11	P	1	1	1	Hollow, Fire scar				P	Remove
334	EGHT	40	F-P	1		1				Path	F	Dw removal
335	EGHT	9	P	1	1	1					P	Remove
336	EGHT	33, 15.5, 12	F			1				Road	F	Ewr over road

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
337	EOJT	18	F	2		1		1		Road	P	Remove
338	EOJT	37	F	2		1		1		Road	P	Remove
339	EOJT	10	F	2							P	Remove
340	EOJT	28	F	2		1		1		Road	P	Remove
341	EOJT	22	F	2		1		1		Road	P	Remove
342	EOJT	10.5, 19	F	2		1		1		Road	P	Remove
343	EOJT	8	P	1				1		Road	P	Remove
344	EOJT	40	F	2		1				Road	F	Dw removal
345	EOJT	19, 10	P	1	1	1					P	Remove
346	EOJT	36, 23	F	1		1	Fire scar			Road	P	Remove
347	EOJT	21	P	1	1	1				Road	P	Remove
348	EOJT	21	F	2		1	Fire scar			-	F	Remove
349	EOJT	31, 30, 14	F	2		1				Road	F	
350	EOJT	14, 5	F	2			Hollow, internal decay				F	Remove
351	EOJT	24	F-P	1		1	Fire scar, internal decay			Road	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
352	EOJT	27, 36	F	2		1				Road	F	Dw removal
353	EGJT	26	F	2		1				Road	F	
354	EGJT	35, 7, 25	F	2		1				Road	F	
355	EGJT	25	F	2		1	Fire scar			Road	P	Remove
356	EGJT	20	F	2		1	Fire scar, Hollow			Road	P	Remove
357	EGJT	53, 12, 30	F	2		1	Fire scar			Road	P	Remove
358	EGJT	34	F	2		1	Fire scar			Road	P	Remove
359	EGJT	18, 12	F	2		1	Fire scar, hollow			Road	P	Remove
360	EGJT	36	F	2		1	Hollow	1		Road	P	Remove
361	EGJT	9	F	2					1	Road	P	Remove
362	EGJT	8.5	F	2					1	Road	P	Remove
363	EGJT	12	F	2						-	P	Remove
364	EGJT	10	P	1						Road	P	
365	EGJT	42, 11	G	3			Hollow, internal decay			Road	P	Remove
366	EGJT	23, 10, 25	F	2			Fire scar hollow			Road	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
367	EGJT	12.5, 8.5, 12, 11, 11, 9	P	1	1	1			1	Road	P	Remove
368	EGJT	33, 20, 21, 20, 6	G	3		1	Internal decay	1		Road	P	Remove
369	EGJT	11, 24.5, 26, 17	G	3				1		Road, residence	P	Remove
370	EGJT	21	G	3		1		1		Road, residence	P	Remove
371	EGJT	10, 6, 13	G	3		1		1		Road, residence	P	Remove
372	EGJT	24.5	G	3				1		Road, residence	P	Remove
373	EGJT	8	G	3				1		Road, residence	P	Remove
374	EGJT	30	G	3				1		Road, residence	P	Remove
375	EGJT	7	G	3				1		Road	P	Remove
376	EGHT	8	G	3				1		Road	P	Remove
377	EGJT	18, 26, 15	G	3				1	1	Road, residence	P	Remove
378	EGHT	27	G	3				1		Road, residence	P	Remove
379	EGHT	13	G	3				1		Road, residence	P	Remove
380	EGHT	9, 10	G	3			Hollow	1	1	Road, residence	P	Remove
381	EGHT	22	G	3				1		Road, residence	P	Remove

Tag #	Area	DBH	Health	Live Crown Ratio	Top Dead	Dead wood	Decay	Root Anchoring Concern	Stump Sprout	Target	Suitability for Retention	Action Rec.
382	EGHT	12.5, 23	G	3				1		Road, residence	P	Remove
383	EGHT	5, 8, 22	F-G	3				1		Road, residence	P	Remove
384	EGHT	21	G	3				1		Road, residence	P	Remove
385	EGHT	18	G	3				1		Road, residence	P	Remove
386	EOJT	23	G	3				1		Road, residence	P	Remove
387	EOJT	31	G	3			Internal decay	1		Road, residence	P	Remove
388	EOJT	18	F	2				1		Road, residence	P	Remove
389	EGHT	21, 16	P	1					1	Path	P	Remove
390	EGHT	16, 17	P	1					1	Path	P	Remove
					190	306		96	61			

es

Such defects have a higher

primary scaffolding stems

efect is recommended

Notes
Lean

Notes
Oak tree adjacent
CDEB
Hanger over trail, dead
Prunung wounds
Large branch failure

Notes
DW w no target
Significant fire scar! Hollow at base
Significant dead wood over road
Significant dead wood over road
Three stems
Large branch failure

Notes
Dw over road
DW w no target
CDEB
CDEB
Remove small failed tree adjacent
Double stem, minor dw w no target
Minor dw w no target
CDEB, Remove small eucs adjacent
Multi
Future maintenance concerns

Notes
Remove small euc adjacent

Notes
Remove small eucs adjacent
Nice toyon adjacent
Double leader
Lean over road
Terrible structure

Notes
Significant decay

Notes
Terminal breakout
Lean over road
2 tree failures by roots adjacent
Destroyed by adjacent tree failures
Large branch taken out by adjacent tree failures
Swollen at base: ID?, Stand dynamics
Mostly dead

Notes
Lean over road
Cdeb w advancing internal crack
Roots exposed on slope side, extensive ID, previously marked for removal
Previously marked for removal
Previously marked for removal
Large decayed pruning wound, cdeb w internal decay
1/2 tree gone, large decayed pruning wound
Significant decay

Notes
1 stem decayed and gone, stand dynamics concerns when adjacent trees are removed
Hollow when sounded
1 stem decayed and gone
1 stem decayed and gone
Internal decay
Cdeb

Notes
Significant decay from old removals
Minor fire scar, top is starting to die
Lean over path, dw
Minor fire scar

Notes
Swelling at base indicating id
Concerns for stand dynamics when adjacent trees removed
Top starting to die
Top starting to die
Dead, leaning into 172
Cdeb
Large wound column running up tree
Major breakout, minor pruning

Notes
Minor fire scar
Minor fire scar, but not hollow
Dead
Dead
Dead
Top starting to die
Extensive trunk decay
Cd, no target
Cd, no target, top starting to die
Lean, sheer crack in trunk
Dead

Notes
Top starting to die
Lean, recent limb removal
Large trunk wound
Previous breakout
Lean

Notes
Cdeb x 2, problematic eb stem opening up, large pruning wound
Eb
Leaning into #223

Notes
Large Firescar, Lean towards path, high priority removal
Dead, lean away from path

Notes
Lean over bench, previous breakout
Lean away from slope, top beginning to dieback
Top beginning to dieback

Notes
Lean, Tree directly behind w large firescar
Lean, top just dying back
Almost dead
Lean

Notes
Lean
Large Firescar
Large Firescar, see thru tree base

Notes
Lean, large Firescar
Large branch removal, significant decay, lean
Lean
Almost dead
Cdeb w snub rib, minor fire scar
Lean over path

Notes
Terminal breakout
Internal decay
Stand dynamic consideration
Dead
Lean
Very large fire scar
Very large fire scar
Lean over path

Notes
Terminal breakout
Slight lean

Notes
Remove before it gets large
Lean over road
Lean over road, slope starting to slide
Cdeb
Protection factor
Cdeb
Intertwined in oak

Notes
Recommend removal due to target
Cd
Remove adjacent stump sprouts
Lean over road
Lean
Take out when small
Not healthy, recommend removal
Edge of slope, roots exposed
Eb

Notes
All app read to be stump sprouts, remove when small, one tree has a lean
Remove all small trees adjacent due to future root anchoring concerns
Cdeb
Lean
Lean
Lean,
Bank is sliding
Bank is sliding
Bank is sliding

Notes
Bank is sliding
Bank is sliding
Bank is sliding

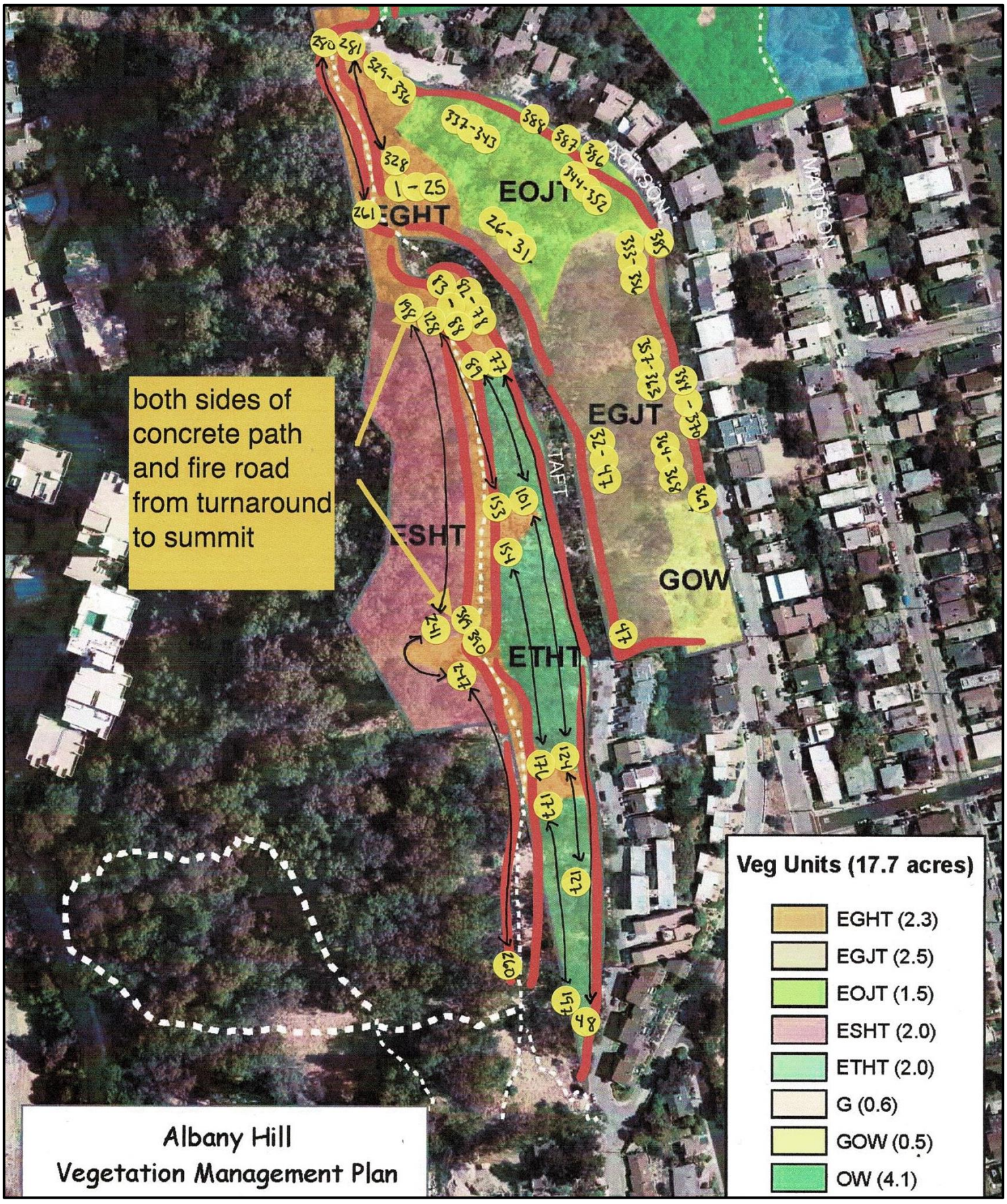
both sides of concrete path and fire road from turnaround to summit
EGHT
EOJT
EGJT
ESHT
ETHT
GOW
TAFT
JACKSON
MADISON
Albany Hill
Vegetation Management Plan
Veg Units (17.7 acres)
EGHT (2.3)
EGJT (2.5)
EOJT (1.5)
ESHT (2.0)
ETHT (2.0)
G (0.6)
GOW (0.5)
OW (4.1)

Photo 1. *Photo above shows the tops of the Eucalyptus located in the EGHT area at the northwestern end of the park. Trees in this area were observed to be in the worst condition, with significant fire scars, dead tops, and live crown ratios less than 10%.*

Photo 2. *Photo left shows the condition of trees in the ETHT area, between the trail and Taft. Trees have very little leaf cover to support their system due to the drought and fungal leaf infection(s).*

Photo 3. *Photo left shows tree #17 in the middle, with a health condition rated as Poor-Dead. The top is noticeably dead.*

Photo 4. *Photo right shows dead tree #181. Trees located at the top of the hill are in worse condition than those at the bottom, likely due to less moisture availability.*

Photo 5. *Photo left shows a very healthy Eucalyptus located along Jackson St. Trees in this area get less sun and wind (which means less evapotranspiration) and more water due to their location on the north side of the hill.*

Photo 6. *Another tree along Jackson appearing in Good health. Unfortunately, these trees are located on a slope and there are concerns related to root stabilization. Removal is recommended for all such trees.*

Photo 7. *Photo above shows a previously removed tree that was destabilized due to the graywacke sandstone giving way underneath*.

Photos 8 and 9. *Photos below show two trees that previously failed by roots on the slope on the upper side of Taft.*

Photo 10. *Photo above shows another downed tree on the slope above Taft.*

Photo 11. *Photo right shows a tree in Poor health condition at the edge of the slope. There is a higher risk associated with this tree due to the road and residences below.*

Photos 12 and 13. *Photos on this page show examples of how roots can work to loosen sandstone by forcing themselves between cracks and expanding. Windforces also create root movement which loosens soil. Trees do not work to stabilize slopes. In fact, it is just the opposite.*

Photo 14. *Photo above shows another example above of slope destabilization under trees.*

Photo 15. *Photo left shows the base of tree #359. This tree was previously cut down, and the stub sprouts emanating from the cut trunk were allowed to grow large again. As the old trunk decays, the stability of the tree will become an issue.*

Photo 16. *Photo left shows the fire scar at the base of tree #100.*

Photo 17. *Photo right shows the large fire scar on tree #242.*

Photo 18. *Photo above shows the hollowness discovered when one of the trees was felled for sample collection.*

Photo 19. *Photo left shows the fire scar at the base of above tree. This raised concerns regarding all trees with fire scars and potential for significant hollowness. All trees with fire scars are recommended for removal. If there is a desire to retain such a tree, a Level 3 Risk Assessment must be performed.*

Photo 20. *Photo left shows tree #249 in the ESHT area. This tree was given a "2" for Live Crown Ratio, meaning it has 10-50% of the total foliage a healthy tree of its size would have. The tree was recommended for pruning to remove dead wood over the path. If there is a desire to retain this tree, mulching and supplemental irrigation is recommended.*

Photo 21. *Photo right shows a grouping of trees where retention is possible (if there are no fire scars) due to Live Crown Ratio being a "2" and branch tips still alive. These trees are also located in the Butterfly habitat.*

Photo 22. *Photo left shows a grouping of trees in the Butterfly area. All the growth on these trees is juvenile, meaning trees lost all their foliage due to disease and drought had to use carbohydrate storage to produce new leaves. Once carbohydrates are expended, trees often die.*

Photo 23. *Photo right shows the juvenile leaves of a Eucalyptus globulus. These appear more bluish than mature leaves, and are positioned opposite on the stem. Mature leaves are alternate.*

Photo 24. Photo above shows *fire scars on all trees located in the EGHT area at the northwestern end of the park along the trail connecting Taft and Jackson.*

End Photo Appendix

Albany Hill Eucalyptus Notes, 5/5/21

Attendees – Igor Lancan, Margot Cunningham, Susan Frankel, Eric Folmer, Steve Batchelder, Molly Batchelder

Investigation and relevant points

The *E. globulus* is from a region that gets more rainfall that we do. Was appropriate species when planted, but not anymore. Even with our fog drip, water balance does not work out.

Albany Hill vegetation plan calls for gradual removal of the Eucalyptus trees on the hill but the monarchs complicated things. There is no pressing reason for removal of any eucalyptus trees in this area unless there are serious safety concerns.

Soil moisture readings:

3% at two feet in area in northern section, worst dieback on hill

2% at 8" in monarch area

Potassium iodine tests showed very little starch reserves in core sample taken from northern section and branches taken from monarch area.

Fluorometer reading from juvenile leaf read .665, which is below what is considered healthy. (.75-.85 is best)

Other Cities Eucalyptus issues

San Mateo *globulus* are getting hit by the Longhorned Borer.

UCSF Arborist Morgan has similar issues with Mt. Sutro trees. Although they appear in worse condition than Albany Hill. Lessons:

Do not engage in EIR process

Have community meetings

Management

What are the management goals? Need to be clear.

Consider values-based approach. More community buy in when more people feel their wishes are being heard.

All trees must be treated as individuals. All trees receive a metal number tag and are assessed individually.

Best to have different management zones. For example:

High Risk Trees – Identify trees with high target values and remove trees with medium-high risk. Prioritize roads and trails.

Eucalyptus Zone – A zone that will remain Eucalyptus for monarchs/historic purposes. Remove the worse. Preserve the best. Younger suppressed trees are better suited for retention than older suppressed trees. Mulch is necessary to mitigate soil moisture loss. Supplemental irrigation will be required, not to make trees grow but to get them through drought years. Replacement species must be

drought tolerant. Plant seedlings. There are 700 different Euc species, and about 200 that have made it to CA. Lots to choose from. For example, Sidney Blue Gum *(Eucalyptus saligna)* is an option. Santa Barbara Nursery has Eucs for sale.

California native zone – This is potentially the northern area where the oak understory is. Eucalyptus look the worst in this area, and monarchs do not congregate here.

Consider all the new drought tolerant oak species in our trade: *Quercus tomentella, Quercus rugosa, Quercus engelmannii, Quercus oblongifolia.* Potentially better suited than our Coast Live Oak. Oaks are great for habitat. Devil Mountain Clements can grow our seedlings! We just tell them what we want. We can make good decisions as we move together into this new era.

Next Steps

Gather as much scientific data as possible:

Susan will spearhead water relations examinations.

Return to Albany Hill on the 19th to cut trees for the Garbelotto Lab for disease analysis. Examine inside of trees for cracking.

Select 5 locations where we can track tree decline from photos. Always take photo from same location as same time of day once a month. Is there a pattern of decline?

Take photos of poor, fair and good representative trees.

Begin to tag and assess trees in high target value areas.