

September 15, 2020

Resurrection Greek Orthodox Church  
20104 Center Street  
Castro Valley CA 94546  
Attn: George Psefteas

Re.: Tree management  
Site: Dublin Canyon Rd., north of Laurel Creek Dr.  
City of Pleasanton File No.: P20-0549

Mr. Psefteas;

I am writing in response to a request from your representative, Guy Houston, for an update to my previous information on trees at this site, in order to comply with the requirements of the City of Pleasanton<sup>1</sup>. Specifically, to comply with comments relative to an arborist report cited in a letter from the City entitled "Subject: P20-0549 Preliminary Review Application", Jennifer Hagen, Associate Planner, dated June 24, 2020.

Mr. Houston provided me revised site and grading plans, and we<sup>2</sup> inspected the trees on August 27, 2020. This was the most recent of several inspections and resulting reports, beginning in 2015, for Guy Houston. The tree data from 2015 is outdated as a revised tree appraisal methodology is in practice<sup>3</sup> and required by the City of Pleasanton. The site use and plans have also been significantly revised. This report incorporates all updated data, evaluations and appraisal values.

Nine trees not previously included due to their small size, have grown to larger than the minimum 6" diameter (DBH)<sup>A</sup>, and some, which were grouped together in 2015, are individually listed in this report. These trees were assigned new tag numbers (nos. 1-9). Many original numbered tags are engulfed by tree trunk growth, so all trees tagged in 2015 were re-tagged duplicating the original numbers.

We tagged, measured (diameter & height)<sup>B</sup>, identified as to genus-species, evaluated, GPS-located<sup>C</sup> and photographed all trees within or adjacent to the immediate construction zone. The intent of my inspections, data collection, document reviews and this report is to assist with your tree protection planning during construction and with your compliance with the requirements of the City of Pleasanton<sup>1</sup>.

**SUMMARY:** I identified 28 trees as being located within the construction zone. Ten additional trees are outside the construction zone in the Riparian Corridor. Of these 38 trees, 22 are Heritage trees as defined by the City of Pleasanton<sup>1</sup> and thus require permitting and specific protection measures. I identified 30 trees to remove, due to either existing condition or conflict with construction, or both. Twenty-five trees are in direct conflict with construction plans. Eight trees, all Heritage Trees<sup>1</sup>, can be retained via implementation of the protective measures described in this report and as required by the City of Pleasanton<sup>1</sup>.

I developed appraisal values for the subject trees employing methods developed by the Council of Tree and Landscape Appraisers (CTLA) and described in the publication, Council of Tree and Landscape Appraisers, 2019, *Guide for Plant Appraisal*, Tenth Edition, Second Printing, International Society of Arboriculture. I selected the Cost Approach, Reproduction Method, Trunk Formula Technique as appropriate for the trees of this project. The total value for the 28 trees appraised is \$138,300.00, which is an average value of \$4,939.00. The remaining 10 trees (nos. A-J) were judged to be of no landscape amenity value and are outside the construction zone. However, they may well be worth retaining as wildlife habitat within the Riparian Corridor.

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<sup>1</sup> City of Pleasanton Municipal Code, Title 17 Planning and Related Matters, Chapter 17.16 Tree Preservation.

<sup>2</sup> Assistant Arborist: I was assisted in the field work by Katie J. Krebs, Consulting Arborist; ISA Certified Arborist no. WE-8731A, ISA Tree Risk Assessment Qualified. K. Krebs is an independent Consulting Arborist under contract with, and not an employee of, Dryad, LLC.

<sup>3</sup> Council of Tree and Landscape Appraisers, 2019, *Guide for Plant Appraisal*, Tenth Edition, Second Printing, International Society of Arboriculture. Appraisal calculation details are on file in the office of Dryad, LLC.

**TREE INVENTORY, DATA & EVALUATIONS SUMMARIES:**

Description	Quantity	Tree nos./comments
Trees (addressed in report)	38	All tree >= 6" diameter on site
Heritage Trees	22	941, 942, 945, 947, 950, 951, 952, 953, 955, 957, 959, 960, A-J
Other trees (not Heritage)	16	943, 944, 946, 948, 949, 956, 958, 1-9
Trees to retain (code 1)	1	955
Heritage Trees to be retained	1	955
Trees to be retained for wildlife habitat only	7	A-E, G, J
Trees to remove (codes 2, 4 & 5)	30	Heritage and non-Heritage
Trees to remove due to existing condition (code 4)	6	957, F, H, I, 2, 6
Heritage trees to remove	14	941, 942, 945, 947, 950, 951, 952, 953, 957, 959, 960, F, H, I
Trees to remove due to conflict with construction only (code 5)	16	Pathway, access road, structure
Total trees appraised	28	Excludes trees nos. A-J
Total value of appraised trees	\$138,300	Excludes trees nos. A-J
Average value of appraised trees	\$4,939	28 trees

Rating Code <sup>4</sup>	Description	Quantity	Tree nos.
1	Preserve, condition warrants long-term preservation.	1	955
2	Preservable, but not worthy of extensive effort or design accommodation.	8	956, 959, 960, 4, 5, 7, 8, 9 (recommended for removal)
3	Current condition warrants removal, but preserve as habitat if viable.	7	A-E, G, J
4	Remove due to existing condition.	6	957, F, H, I, 2, 6
5	Remove due to conflict with construction only.	16	941, 942, 943, 944, 945, 046, 947, 948, 949, 950, 951, 952, 953, 958, 1, 3

Genus-species breakdown	Quantity
CA coast live oak ( <i>Quercus agrifolia</i> )	30
CA bay laurel ( <i>Umbellularia californica</i> )	7
Valley oak ( <i>Quercus lobata</i> )	1

Abbreviations (data table comments)	Definition
AAA	Acute-angle attachment of trunks and/or major limbs <sup>D</sup>
DBH	Diameter at Breast Height (4.5 feet or 54 inches above grade) <sup>A</sup>
CD	Codominant trunks or primary limbs <sup>E</sup>
L	Lean (significant, => 10°)
RC	Excess soil over root crown <sup>F</sup>
UL	Utility lines overhead



<sup>4</sup> Codes (management/rating): The Management Codes applied in this report were defined by Torrey Young, Dryad, LLC, specifically for use relative to this project and are not intended to reflect or relate to any other rating/coding systems that may be in use in the profession.

**TREE INVENTORY, DATA & EVALUATIONS:**

No.	Genus-species	Trunk diameter (inches)						Canopy <sup>6</sup> (ft.)				Height (ft.)	Heritage status <sup>1</sup>	Rating code <sup>5</sup>	Site plans		Value <sup>3</sup>	Comments
		DBH1	DBH2	DBH3	DBH4	Total (2 largest)	Appraisal diameter <sup>6</sup>	N	E	S	W				Retain	Remove		
941	CA coast live oak ( <i>Quercus agrifolia</i> )	11.0	10.0			21.0	10.5	10	8	9	8	21	Yes	5		X	\$3,500	UL, RC, CD/AAA; conflicts with proposed pathway.
942	CA coast live oak ( <i>Quercus agrifolia</i> )	12.0	10.5	8.5		22.5	21.5	17	15	16	10	29	Yes	5		X	\$4,800	UL, RC, CD/AAA; conflicts with proposed pathway.
943	CA coast live oak ( <i>Quercus agrifolia</i> )	13.0				13.0	13.0	15	4	18	17	30	No	5		X	\$3,800	UL, RC, CD/AAA; conflicts with proposed pathway.
944	CA coast live oak ( <i>Quercus agrifolia</i> )	10.0				10.0	10.0	19	15	6	11	32	No	5		X	\$3,500	UL, RC, CD/AAA, L; conflicts with proposed pathway.
945	CA coast live oak ( <i>Quercus agrifolia</i> )	23.0	14.5			37.5	26.5	27	24	20	22	28	Yes	5		X	\$5,300	UL, RC, AAA, L; conflicts with proposed pathway.
946	CA coast live oak ( <i>Quercus agrifolia</i> )	15.0				15.0	15.0	15	19	17	6	32	No	5		X	\$6,000	RC, AAA, conflicts with proposed structure
947	CA coast live oak ( <i>Quercus agrifolia</i> )	14.5	13.5	13.0		28.0	21.0	27	26	23	19	30	Yes	5		X	\$5,200	RC, AAA, conflicts with proposed structure
948	CA coast live oak ( <i>Quercus agrifolia</i> )	12.0				12.0	12.0	10	11	11	9	23	No	5		X	\$3,700	RC, AAA, conflicts with proposed pathway
949	CA coast live oak ( <i>Quercus agrifolia</i> )	8.5				8.5	9.0	11	9	14	8	20	No	5		X	\$3,300	UL, RC, L, trunk curvature w/poor taper; conflicts with proposed pathway
950	CA coast live oak ( <i>Quercus agrifolia</i> )	20.0				20.0	20.0	26	19	20	15	26	Yes	5		X	\$4,500	UL, AAA, RC; conflicts with proposed access road
951	CA coast live oak ( <i>Quercus agrifolia</i> )	12.0	9.5	9.5		21.5	17.0	19	3	18	24	25	Yes	5		X	\$6,000	UL, AAA, RC; conflicts with proposed access road
952	CA coast live oak ( <i>Quercus agrifolia</i> )	18.0	13.5	8.5		31.5	23.5	19	20	22	17	32	Yes	5		X	\$10,700	RC; conflicts with proposed access road
953	CA coast live oak ( <i>Quercus agrifolia</i> )	16.5	15.5	15.5		32.0	24.5	19	25	23	19	29	Yes	5		X	\$10,200	AAA, RC; conflicts with proposed access road
955	CA coast live oak ( <i>Quercus agrifolia</i> )	43.0				43.0	43.0	20	37	47	36	72	Yes	1	X		\$22,600	L (severe, to south), RC (significant), lion-tail pruning, stunted growth (no increase in diameter)
956	CA coast live oak ( <i>Quercus agrifolia</i> )	9.5				9.5	10.0	17	2	3	13	24	No	2		X	\$3,600	L, AAA, RC
957	CA coast live oak ( <i>Quercus agrifolia</i> )	23.0				23.0	23.0	23	10	25	19	35	Yes	4		X	\$4,100	AAA, RC, major failure of codominant stem reduced canopy by about 40%

<sup>5</sup> Rating codes: The Rating Codes applied in this report were defined by Torrey Young, Dryad, LLC, specifically for use relative to this project and are not intended to reflect or relate to any other rating/coding systems that may be in use in the profession.

<sup>6</sup> Appraisal diameters are the diameters used to calculate appraisal values. In the case of multiple stems, measurements were adjusted to reflect appropriately overall tree size.

No.	Genus-species	Trunk diameter (inches)						Canopy <sup>6</sup> (ft.)				Height (ft.)	Heritage status <sup>1</sup>	Rating code <sup>5</sup>	Site plans		Value <sup>3</sup>	Comments
		DBH1	DBH2	DBH3	DBH4	Total (2 largest)	Appraisal diameter <sup>6</sup>	N	E	S	W				Retain	Remove		
958	Valley oak ( <i>Quercus lobata</i> )	14.0				14.0	14.0	10	14	16	11	26	No	5		X	\$3,700	UL, L, RC, topped for UL clearance; conflicts with proposed pathway
959	CA coast live oak ( <i>Quercus agrifolia</i> )	24.0	21.0	18.0	10.5	45.0	18.0	25	28	31	32	30	Yes	2		X	\$3,900	UL, AAA, RC; repeatedly topped for UL clearance, weak structure; conflicts with proposed pathway
960	CA coast live oak ( <i>Quercus agrifolia</i> )	33.0	14.0	13.0		47.0	20.0	26	23	33	21	31	Yes	2		X	\$3,700	UL, AAA, RC; major failure of codominant stem; weak structure, repeatedly topped for UL clearance, conflicts with proposed pathway
A	CA bay laurel ( <i>Umbellularia californica</i> )	34.0				34.0	34.0	---	---	---	---	---	Yes	3	X		N/A	
B	CA coast live oak ( <i>Quercus agrifolia</i> )	30.0				30.0	30.0	---	---	---	---	---	Yes	3	X		N/A	L
C	CA bay laurel ( <i>Umbellularia californica</i> )	20.0				20.0	20.0	---	---	---	---	---	Yes	3	X		N/A	L
D	CA bay laurel ( <i>Umbellularia californica</i> )	60.0				60.0	60.0	---	---	---	---	---	Yes	3	X		N/A	Decayed and declining
E	CA bay laurel ( <i>Umbellularia californica</i> )	40.0	30.0	24.0	20.0	70.0	29.0	---	---	---	---	---	Yes	3	X		N/A	Decayed and declining
F	CA bay laurel ( <i>Umbellularia californica</i> )	20.0				20.0	20.0	---	---	---	---	---	Yes	4		X	N/A	L (severe)
G	CA bay laurel ( <i>Umbellularia californica</i> )	30.0				30.0	30.0	---	---	---	---	---	Yes	3	X		N/A	L
H	CA coast live oak ( <i>Quercus agrifolia</i> )	30.0				30.0	30.0	---	---	---	---	---	Yes	4		X	N/A	Dead
I	CA coast live oak ( <i>Quercus agrifolia</i> )	36.0				36.0	36.0	---	---	---	---	---	Yes	4		X	N/A	Declining; major limb removed (50% of canopy)
J	CA bay laurel ( <i>Umbellularia californica</i> )	36.0				36.0	36.0	---	---	---	---	---	Yes	3	X		N/A	Seriously eroded beneath rootball.
1	CA coast live oak ( <i>Quercus agrifolia</i> )	5.5	4.0			9.5	5.0	8	8	3	9	20	No	5		X	\$3,200	AAA, RC, chlorotic, topped; conflicts with proposed pathway
2	CA coast live oak ( <i>Quercus agrifolia</i> )	7.0	4.5			11.5	6.0	5	6	4	5	7	No	4		X	\$0	AAA, RC, chlorotic, topped to 4' stumps; conflicts with proposed pathway
3	CA coast live oak ( <i>Quercus agrifolia</i> )	8.0				8.0	8.0	9	9	10	8	25	No	5		X	\$3,400	RC; conflicts with proposed pathway
4	CA coast live oak ( <i>Quercus agrifolia</i> )	6.5	6.0			12.5	6.5	11	12	2	12	24	No	2		X	\$3,200	AAA, RC; conflicts with proposed pathway
5	CA coast live oak ( <i>Quercus agrifolia</i> )	6.0				6.0	6.0	5	6	7	2	19	No	2		X	\$3,200	AAA, RC; conflicts with proposed pathway
6	CA coast live oak ( <i>Quercus agrifolia</i> )	11.0				11.0	11.0	0	0	18	15	27	No	4		X	\$3,200	RC; L (severe), conflicts with proposed pathway

No.	Genus-species	Trunk diameter (inches)						Canopy <sup>6</sup> (ft.)				Height (ft.)	Heritage status <sup>1</sup>	Rating code <sup>5</sup>	Site plans		Value <sup>3</sup>	Comments
		DBH1	DBH2	DBH3	DBH4	Total (2 largest)	Appraisal diameter <sup>6</sup>	N	E	S	W				Retain	Remove		
7	CA coast live oak ( <i>Quercus agrifolia</i> )	6.5				6.5	6.5	5	4	9	7	22	No	2		X	\$3,200	AAA, RC; conflicts with proposed pathway
8	CA coast live oak ( <i>Quercus agrifolia</i> )	11.0				11.0	11.0	9	3	22	16	24	No	2		X	\$3,300	RC; L, conflicts with proposed pathway
9	CA coast live oak ( <i>Quercus agrifolia</i> )	8.5	8.5			17.0	10.5	13	10	15	14	18	No	2		X	\$3,500	AAA, RC; conflicts with proposed pathway



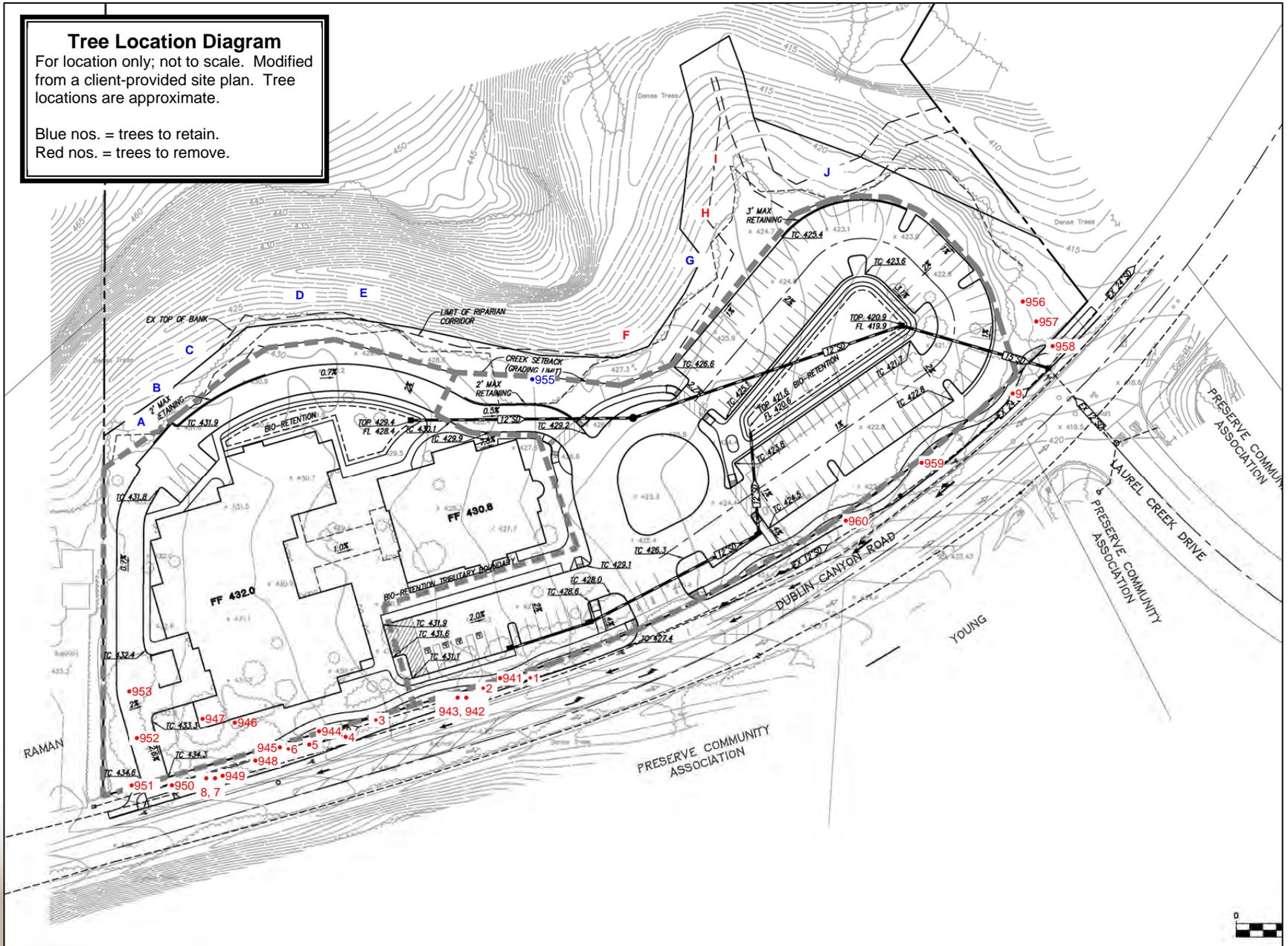


PARLAY 2.0: Welcome, Torrey Your subscription is active.

### Tree Location Diagram

Southwest corner, enlarged to show closely spaced trees.. Modified from a Google earth® aerial image.

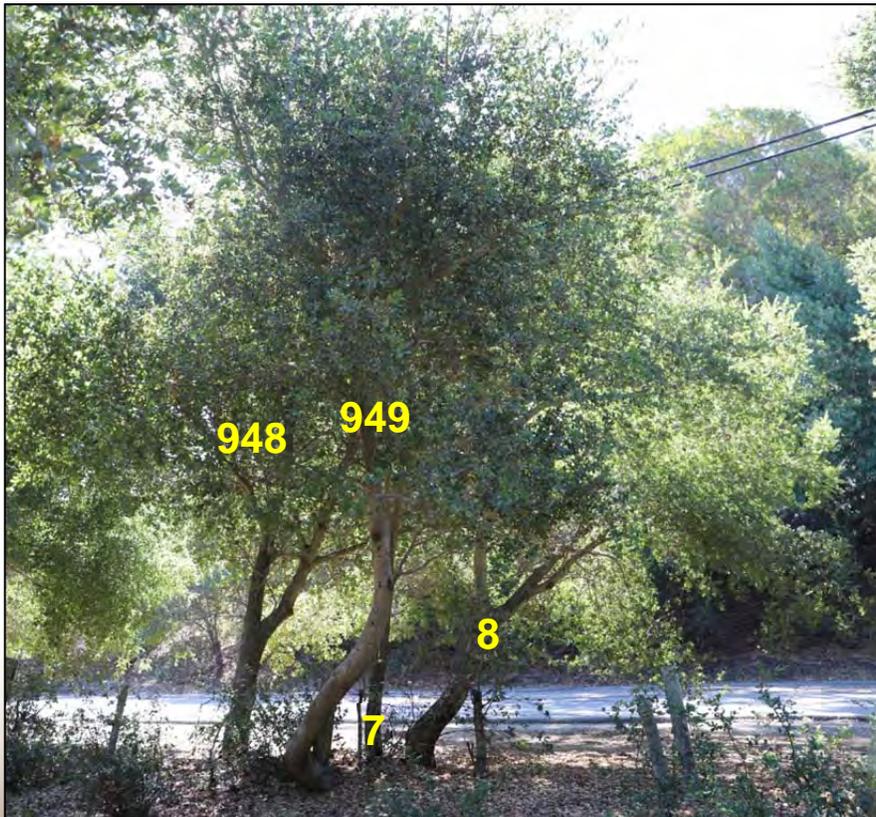




**TREE IMAGES – EXAMPLES<sup>7</sup>:**



**Tree no. 3:** Code 5 (conflict with construction only). This small tree is a viable candidate for preservation, except that it is in conflict with the proposed pathway.



**Trees nos. 948 & 949:** Both are code 5 (conflict with construction).

**Trees nos. 7 & 8:** Both are code 2 (poor condition), but are also in conflict with the proposed pathway. These trees all exhibit poor architecture.

<sup>7</sup> All trees listed were photographed at the time of inspection and all images are on file at the office of Dryad, LLC. The images included in this report are intended as examples.

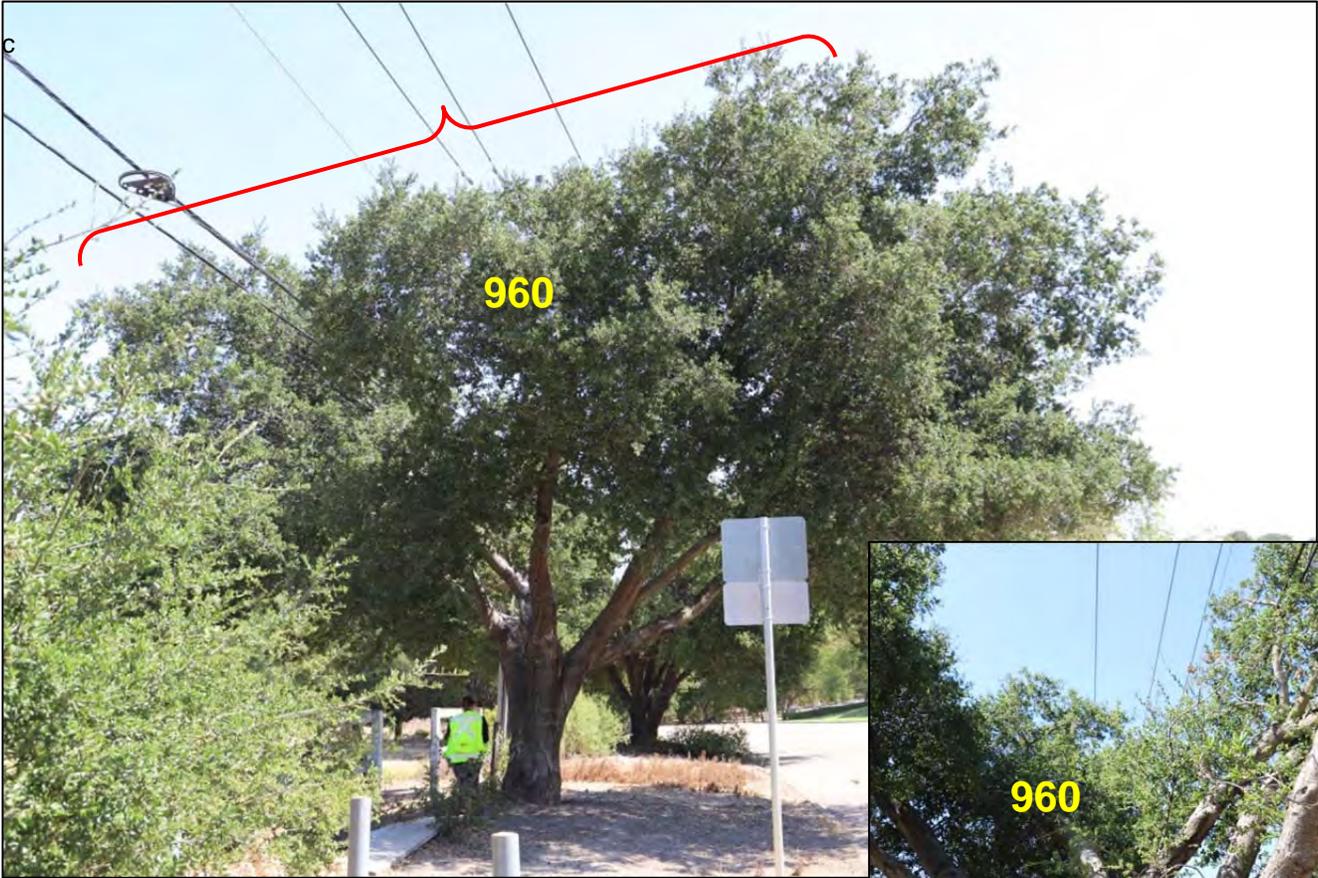


**Tree no.955:** Code 1 (Retain)  
Although aesthetically desirable, this tree leans severely to the south (towards development) and is very stunted (stressed) with significant excess soil over the root collar. Excavation and inspection of the root collar is recommended to determine condition before deciding to retain. If sound, to deter root disease and decay.

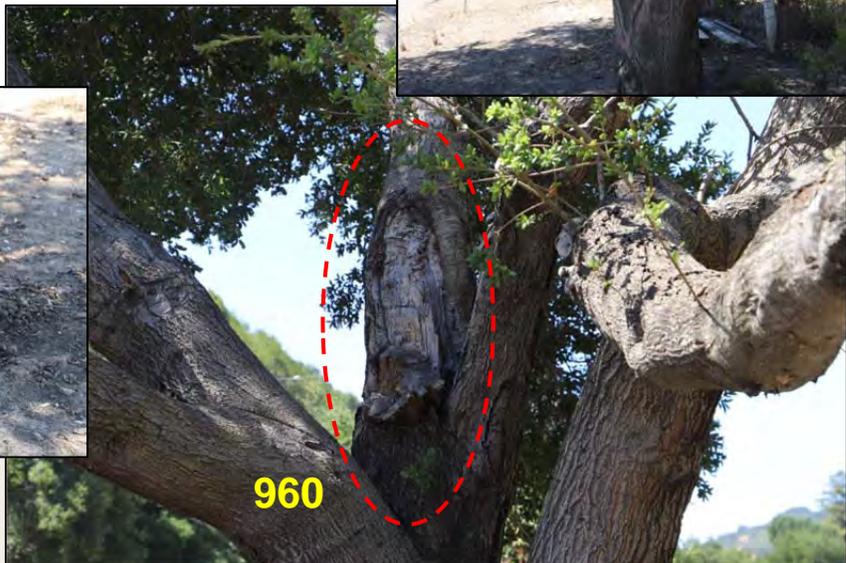




**Tree no. 957:** Code 4 (remove due to condition) – Major failure resulted in loss of ~40% of canopy. Codominant stems with weak attachment.



**Tree no. 960:** Code 2 (poor condition) – Major failure, repeated topping for utility lines, multiple stems with weak attachments, large basal wound, excess soil over root collar.





Typical examples of excess soil over root collars, exhibited by virtually every tree in this report.



## DISCUSSION:

**General comments:** Virtually all 28 trees within the construction zone have excess soil over the root collars. Any trees to be retained should have root collars excavated and inspected before deciding to preserve the tree. Doing so is not construction related but can be critical to discovering or preventing serious root decay disease.

- **Trees nos. 941-945, 948, 949, 958-960, 1-9:**

**Comments:** This group of 19 trees are to the south, bordering Dublin Canyon Rd. These trees were specifically called out as of critical importance in the City of Pleasanton's letter entitled "Subject: P20-0549 Preliminary Review Application", from Jennifer Hagen, Associate Planner, dated June 24, 2020. Trees nos. 950 & 951 also border Dublin Canyon Blvd., but are not included here as they are in direct conflict with the access road.

I understand the overhead utility lines are planned for undergrounding (G. Houston), but many of these trees have been topped for clearance, some repeatedly and severely. Others exhibit inherent and irreparable structural weaknesses and prior failures of major parts (nos. 957, 960). For these reasons and in consideration of proximity to future development and activity, I judged 7 of these 19 trees as poor candidates for preservation based upon their condition. Eight of this group could be retained based upon their condition, but their proximity to the adjacent pathway renders that ill advised. Where the trees are not immediately in the line of the pathway, it falls immediately next to trunks, which will result in significant root loss and hardscape displacement in the future. Two trees (nos. 2 & 957) are of such poor condition that removal is recommended regardless of construction impacts.

**Recommendations:** It is my opinion that the project and the community would be better served by replacing all 19 trees with new trees, located for maximum growing space, which can thrive for decades. In the absence of overhead utility lines and allowing for sufficient growing space, replacing with CA coast live oaks (*Quercus agrifolia*) is reasonable.

- **Trees nos. 946, 947, 950-953:**

**Comments:** This group of six larger trees is located in direct conflict with construction, including the western access road and the structure (FF432.0).

**Recommendations:** Remove all six trees.

- **Tree no. 955:**

**Comments:** This large CA live oak originates in the Riparian Corridor, but its severe lean places most of its canopy within the Limit of Grading. A visual inspection suggests this tree is worth preservation. However, there is significant excess fill soil over the south side of the root collar that could be covering significant root disease and decay. The tree is also significantly stunted, with no measurable increase in trunk diameter and poor twig growth<sup>H</sup> over the last 5 years.

**Recommendations:**

1. Perform a root collar excavation and inspection before a decision to preserve this tree.
2. If the root collar is sound, extend the protective fencing to the south as far from the trunk as possible (at least at the dripline).

- **Tree nos. A-F, J:**

**Comments:** Although their condition warrants removal, I recommend some or all of these seven trees be considered for preservation in view of their value for wildlife habitat and creek bank erosion mitigation. These seven trees are not tagged, not appraised and not re-inspected, but are labeled on the tree location diagrams. Their condition and disposition is not relevant to construction activities.

**Recommendations:** I recommend some or all of these seven trees be considered for preservation in view of their value for wildlife habitat and creek bank erosion mitigation.

**Riparian Corridor (trees nos. A-J and 955):** Although not within the grading limit, protection from construction activities is appropriate.

**Recommendations:** Install protective fencing at least along the Limit of the Riparian Corridor or closer to the Limit of Grading. Install erosion control to prevent accumulation of soil or debris around trees.



**TREE PROTECTION REQUIREMENTS OF THE CITY OF PLEASANTON:** Excerpted from the City of Pleasanton Municipal Code, Title 17 Planning and Related Matters, Chapter 17.16 Tree Preservation (Revised: July, 2012):

“17.16.070 Protection of existing trees.

All persons shall comply with the following precautions:

- A. Prior to the commencement of construction, install a sturdy fence at the dripline of any tree which will be affected by the construction and prohibit any storage of construction materials or other materials inside the fence. The dripline shall not be altered in any way that increases the encroachment of the construction.
- B. Prohibit excavation, grading, drainage and leveling within the dripline of the tree unless approved by the director.
- C. Prohibit disposal or depositing of oil, gasoline, chemicals or other harmful materials within the dripline or in drainage channels, swales or areas that may lead to the dripline.
- D. Prohibit the attachment of wires, signs and ropes to any heritage tree.
- E. Design utility services and irrigation lines to be located outside of the dripline when feasible.
- F. Retain the services of a certified or consulting arborist for periodic monitoring of the project site and the health of those trees to be preserved. The certified or consulting arborist shall be present whenever activities occur that pose a potential threat to the health of the trees to be preserved.
- G. The director shall be notified of any damage that occurs to a tree during construction so that proper treatment may be administered. (Ord. 1737 § 1, 1998)”

**TREE PRESERVATION RECOMMENDATIONS:**

1. I recommend that the guidelines in the most current revisions of the following publications be followed as closely as possible, within the limitations of the requirements of the City of Pleasanton<sup>1</sup>.
  - A. American National Standards Institute, *Tree, Shrub and Woody Plant Management Standard Practices, Management of Trees & Shrubs During Site Planning, Site Development and Construction*, American National Standards Institute (ANSI A300 - Part 5) (most current revision).
  - B. Kelby Fite and E. Thomas Smiley, Best Management Practices, *Managing Trees During Construction*, International Society of Arboriculture (most current revision).
  - C. Matheny, Nelda P.; Clark, James R.; 1998. *Trees and Development*, International Society of Arboriculture.
2. Where excavation, grade changes or other encroachment will occur within the dripline areas<sup>1</sup> of the trees, call for arborist inspection and supervision and follow the recommendations below and the General Construction Site Tree Preservation Guidelines (TPG, pg. 16) as closely as possible.

**Trees to be removed:**

1. Remove to grade only, when possible and when within the dripline areas of trees to be retained.
2. Stump grinding within the dripline area of adjacent trees to be retained should not exceed 4-6” below grade and only include the primary body of the stump (i.e., do not chase surface roots).
3. If surface root removal is required within the dripline areas of trees to be retained, remove only by hand.

**Trees to be retained:**

1. Riparian Corridor: Install continuous protective fencing (refer to the TPG, pg.16 ) at the entire north and east perimeter of the site, as far south from the limit of the Riparian Corridor as possible, but at last no closer to trees than the dripline perimeter.
2. Mulch: Install organic mulch, preferably tree service brush chips, throughout the area behind protective fencing (refer to TPG, pg. 16).
3. All trees to be retained:
  - A. Irrigation:
    - i. Before implementing root pruning or excavation, irrigate the dripline areas of all trees to be retained to wet the soil to near field capacity to a depth of approximately 18 inches.
    - ii. For any trees root pruned, maintain the soil moisture at near field capacity within the dripline areas or beyond.
    - iii. Continue irrigation to maintain soil moisture (as above) throughout the duration of construction, or until sufficient rainfall occurs.
  - B. Root pruning (for excavation):
    - i. Pre-trench and root prune as described in the TPG (pg. 16).

- ii. As it is not possible to determine from which trees the roots originate, handle all encountered roots by following the TPG as closely as possible.
- iii. Limited, miscellaneous excavation (outside of the primary trench):
  - a. When roots are encountered over 1" in diameter, prune cleanly and cover with an absorbent material and keep the material and adjacent soil moist until backfilled (refer to TPG).
- C. Install protective fencing, surrounding each/all trees to be retained, as described below and in the TPG.
  - i. Fencing shall be 6' chain-link with posts embedded directly into the soil.
  - ii. Trees with overlapping canopies can be grouped for fencing purposes.
- D. Mulch: Install organic mulch to a settled depth of 4-6 inches within the protective fencing and throughout the dripline areas surrounding all trees to be retained wherever excavation will not occur.
- E. Tree Protection Zone (TPZ; fenced area):
  - i. Do not allow vehicles, equipment, pedestrian traffic, building materials, debris storage, or disposal of phytotoxic materials inside of the fenced-off areas (TPZ).



## **GENERAL CONSTRUCTION SITE TREE PRESERVATION GUIDELINES<sup>8</sup>** (Not site or entity-specific)

1. **Tree Protection Zone<sup>J</sup>:**
  - a. The Tree Protection Zone (TPZ) should consist of the largest possible area surrounding trees to be preserved that can remain undisturbed. Ideally, an area of 1.5 times the longest dripline radius (measured from the trunk). Alternatively, follow the TPZ guidelines as described in the most recent version of current industry standards and best management practices publications<sup>K</sup>. The TPZ can be continuous for trees with overlapping driplines.
  - b. Surround the TPZ with protective fencing.
    - i. Fencing should consist of chain link, at least 6 feet in height, surrounding the perimeter of the TPZ designated distance or beyond.
    - ii. Anchor fence posts into the soil (i.e., do not use portable footings).
    - iii. Protective fencing should remain in place until all grading and construction is complete.
  - c. Do not allow vehicles, equipment, pedestrian traffic, building materials, debris storage, or disposal of phytotoxic<sup>L</sup> materials inside of the fenced-off areas (TPZ).
2. **Mulching<sup>M</sup> and irrigation:**
  - a. Soil moisture:
    - i. Determine the status of soil moisture to a depth of 18-24" below grade within the dripline of all (each) trees to be preserved, via tensiometer, granular matrix sensor or manual soil probing.
    - ii. Irrigate as/if necessary, via slow-application (drip) irrigation, to achieve approximately field capacity<sup>N</sup> to a depth of 12-18".
  - b. Mulch: Cover exposed soil within all TPZ's with an organic mulch to a settled depth of no less than 3-4 inches.
3. **Excavation, root pruning & repair:**
  - a. Excavation and root pruning should be performed by a Tree Worker currently certified by the International Society of Arboriculture (ISA). Excavation and root pruning should be directly supervised by an arborist currently credentialed as at least one of the following:
    - i. Certified Arborist by the ISA,
    - ii. Board Certified Master Arborist by the ISA,
    - iii. Registered Consulting Arborist by the American Society of Consulting Arborists (ASCA).
  - b. Determine and mark (marking paint and stakes) the outside edge (towards trees) of required excavation, and adjacent to/surrounding any excavations within an area 1.5 times the dripline radius of trees to be preserved (or as large an area as feasible).

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- c. Excavate a trench approximately 6-12" beyond the area to be disturbed (towards tree), or where roots have been damaged, to a depth of at least 18", by hand excavation<sup>O</sup> or with specialized hydraulic<sup>P</sup> or pneumatic<sup>Q</sup> equipment.
  - i. Wherever possible, relocate excavations or tunnel beneath encountered roots >1" in diameter.
  - ii. Cut encountered roots cleanly with hand pruners or power saw. Avoid tearing, dislodging of bark (or epidermis) or otherwise disturbing that portion of the root(s) to remain.
  - iii. Immediately backfill with soil to cover, and moisten.
  - iv. If backfilling cannot be completed immediately, cover exposed roots with several layers of untreated burlap (or other similar absorbent material) or sand, mulch, or soil and keep moist until permanent backfilling can be completed.
- c. Future excavations within the TPZ:
  - i. If possible, relocate any future excavations (irrigation, landscape features, etc.) outside the TPZ and perimeter of previously pruned roots.
  - ii. If encroachment is required within the TPZ, endeavor to avoid pruning roots by tunneling beneath.
  - iii. If relocation or tunneling is not possible, handle any required root pruning as previously described.
4. **Tree care and maintenance work:** (pruning, cabling/bracing<sup>R</sup>, root pruning, etc.)
  - a. All tree care or maintenance work:
    - i. All tree care work should be performed by a Tree Worker currently certified by the International Society of Arboriculture (ISA) or a current ISA Certified Arborist.
    - ii. All tree care work should be directly supervised by an arborist currently credentialed as at least one of the following:
      - (1) Certified Arborist by the ISA,
      - (2) Board Certified Master Arborist by the ISA,
      - (3) Registered Consulting Arborist by the American Society of Consulting Arborists (ASCA).
  - b. All tree care or maintenance work should be performed in accordance with current industry standards<sup>S</sup>.
  - c. Tree pruning:
    - i. Avoid pruning that removes green foliage or live wood immediately before, during or within 2-3 years after construction.
    - ii. Prune to remove large deadwood only, or the minimum required for clearance purposes, in accordance with current pruning standards<sup>T</sup>.
5. **Post-construction:**
  - a. Avoid pruning that removes live foliage for several years after construction. Perform only that pruning that is necessary for clearance purposes.
  - b. Arrange for periodic (biannual) inspection of the condition of the trees by a competent Consulting Arborist, and treatment of damaging conditions (insects, diseases, nutrient deficiencies, soil moisture, etc.), as they occur, or as deemed appropriate by the consultant for effective management.

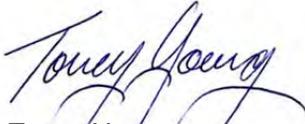
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September 15, 2020  
Torrey Young, Dryad, LLC  
19053-20078 Resurrection Greek Orthodox Church  
Site: Dublin Canyon Rd., north of Laurel Creek Dr.  
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Please feel free to contact me for further discussion or services.

Respectfully,



Torrey Young  
Registered Consulting Arborist®

ASCA Registered Consulting Arborist, no. 282  
ISA Board Certified Master Arborist, no. WE-0131BM  
CUFC Certified Urban Forester, no. 121  
ISA Tree Risk Assessment Qualified  
ASCA Tree & Plant Appraisal Qualified  
CA P.C. Qualified License, no. 104772  
CA Contractors License no. 363372 (C-27 & D-49; inactive)



## ENDNOTES:

- <sup>A</sup> Diameter: DSH - Diameter at Standard Height or DBH – Diameter at Breast Height, or approximately 4.5 feet (54 inches) above grade. These references are synonymous and commonly used as a point of reference in determining tree size and as the basis for a myriad of calculations. Diameter measurement location may vary depending upon tree structural character, jurisdictional codes or project guidelines, etc. In some cases, diameters may be estimated due to inaccessibility or other limitations.
- <sup>B</sup> Height, distance and/or diameter measurements: Diameters were measured via calculating diameter tape measurement of circumference. Height and distance (canopy) measurements were taken with a laser rangefinder/hypsometer (TruPulse 360R or OptiLogic LH400). If measured, the reported height was averaged from several sets of measurements. Where tree trunks or views were obstructed or inaccessible, either or both heights and diameters may have been estimated.
- <sup>C</sup> GPS data: GPS (Global Positioning System) data was collected with a Garmin 64 or 64st GPS device, described by the manufacturers as accurate to within 9 meters. Accuracy may vary because of weather, canopy cover, etc. This data is intended only to assist with tree location and is not intended to be of survey precision.
- <sup>D</sup> Acute-angle attachments (crotches): Branch/limb, limb/trunk, or codominant trunks originating at acute angles from each other. Bark often remains between such attachment, preventing the development of a branch-bark ridge (branch collar) or grafting of the parts. The inherent weakness of such attachments increases with time, through the pressure of opposing growth and increasing weight of wood and foliage, frequently resulting in failure.
- <sup>E</sup> Codominant: Refers to branch, limbs or trunks of similar size and height or length competing for the same space and/or role within the tree's architecture; frequently originating at acute angles from each other, with bark remaining (included) between the components (in the crotch). Such attachments are inherently weak and worsen with time through the pressure of opposing growth and the increasing weight of wood and foliage, frequently resulting in the failure of one or both (all).
- <sup>F</sup> Root collar (Trunk flare, root flare, root crown): One of several accepted terms describing the junction of trunk and buttress roots at the original soil grade. Synonymous terms: root crown, root collar, root flare, trunk flare.
- <sup>G</sup> Canopy: One of several accepted terms describing that area of a tree which includes limbs, branches, foliage, and to a lesser degree, upper stems (synonymous with 'foliage crown').
- <sup>H</sup> Twig growth: The length of annual growth of a twig (smallest branch), measured between the twig tip and the last bud scar; also may include measuring previous years' growth by measuring between bud scars; often used as a generalized measure of tree vigor based upon expectations for the species, and also as a rough guide to schedule of impacts or events affecting vigor.
- <sup>I</sup> Dripline area: The soil area surrounding the tree trunk whose outer perimeter is defined by the unaltered length of the outermost branch tips.
- <sup>J</sup> Tree Protection Zone: (TPZ) a delineated area of the rooting zone of a tree or group of trees to be protected from encroachment by construction activities. Such activities may include excavation or grading, vehicle, equipment and pedestrian traffic; storage of vehicles, building materials, soil or debris; or disposal of phytotoxic materials.
- <sup>K</sup> American National Standards Institute, 2012. *Standard Practices for Tree Care Operations - Management of Trees and Shrubs During Site Planning, Site Development and Construction* (ANSI A300, Part 5, current revision); International Society of Arboriculture, *Best Management Practices, Managing Trees During Site Planning, Site Development and Construction* (current revision).
- <sup>L</sup> Phytotoxic: (phytotoxin) any substance or material capable of killing plant cells, parts, plants in their entirety.
- <sup>M</sup> Mulch: Organic materials (e.g., brush chips, fir bark) spread upon the soil for a variety of benefits: aesthetics, retains soil moisture, moderates soil temperatures, improves soil structure and increases fertility, protects against compaction, suppresses weeds, etc. (Note: Elsewhere, definition may include non-organic materials.)
- <sup>N</sup> Field capacity: The maximum volume of moisture a soil can hold after drainage has occurred. An expression of the water-holding capacity and moisture status of soils.
- <sup>O</sup> Hand excavation: Manual soil excavation via the use of hand tools only. Use of hand tools for initial excavation should be avoided. Hand tools shall not be used in a manner that results in breakage of roots, bark penetration or separation of bark from roots. Hand tool use should be limited to small tools (e.g., spade, trowel) for minor excavations or in restricted spaces. Picks, mattocks, digging bars or similar implements requiring striking the earth shall not be used for excavation. Hand shovels may be used for minor excavations, or where access is limited for vacuum equipment, or hydraulic slurry cannot be flushed out of the excavation. Such usage shall not result in breakage of roots, bark penetration or separation of bark from roots.
- <sup>P</sup> Hydraulic excavation: Soil excavation performed using pressurized, focused water via 1) pressure washer, portable fire pump, or similar equipment or 2) hydraulic truck-mounted equipment (Hydra-vac). Equipment should be used at the minimum pressure required to remove the soil from around roots and out of the resulting excavation void, without causing breakage of roots, bark penetration or separation of bark from roots.
- <sup>Q</sup> Pneumatic excavation: Soil excavation performed via supersonic compressed air excavation with a tool called an air spade. This tool removes soil from roots (or pipes, wires, etc.) with little or no damage to the roots (or utilities). Soil is separated and blown away via highly focused, supersonic velocity compressed air, which separates the soil particles without penetrating roots.
- <sup>R</sup> Cabling & Bracing: The installation of hardware in and/or about trees for the purpose of providing supplemental support of weak, defective or otherwise suspect limbs and/or stems; supporting of newly planted trees; bracing cracks; propping trees or limbs, or otherwise providing support. The installation of cables, bolts and other hardware in trees is intended to reduce the potential for failure (breakage/uprooting). Such bracing does not permanently remedy structural weaknesses, and is not a guarantee against failure. The trees and hardware must be inspected periodically for hardware deterioration, adequacy and changes in the tree's and site condition.
- <sup>S</sup> Current industry standards: The most current and applicable publications of 1) *Best Management Practices*, International Society of Arboriculture; 2) American National Standards Institute, A300 and Z133 (all parts).

<sup>T</sup> Pruning standards: The following standards were developed by a consensus of representatives from various industry professional organizations; ♦ American National Standards Institute, *Standard Practices for Tree, Shrub and other Woody Plant Maintenance (Pruning)*, American National Standards Institute (ANSI A300 Part 1-current revision) ♦ International Society of Arboriculture, *Best Management Practices, Tree Pruning*, International Society of Arboriculture (current revision) ♦

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