



October 6, 2010

City of South Pasadena
ATTN: Marcelino Aguilar
825 Mission Street
South Pasadena, CA 91030

RE: 545 W. Adelyn Drive- Wilson Reservoir

Mr. Aguilar,

Pursuant to the request of the city this report has been prepared in order to address the twenty trees located on the property of the Wilson Reservoir located at 545 W. Adelyn Drive in the city of San Gabriel as well as a private tree located at 541 W. Adelyn Drive. The purpose of the report is to identify which trees will be removed due to site reconfigurations and to offer mitigation measures to ensure the survival of the remaining trees. The site was visited on September 30, 2010 and all comments that follow are based on observations made while on the site as well as discussions with Mr. Bernard Pyska (URS Corporation, Water Resources Engineering Manager).

For ease of information presentation, simplified tree data is presented in a spreadsheet format, and can be found on page 6. Each tree identified for retention on the site will be further addressed within the body of the report.

OBSERVATIONS: The entire reservoir site is being rebuilt due mostly to age related issues, the plan details call for the removal of seven trees near the front of the property. These include 5 Victorian Box trees and 2 Oriental Arborvitaes. The remaining trees consist of the 6 Bald Cypress trees along the driveway entrance, and 3 Coast Live Oaks, 1 Avocado, 1 Pecan, 1 Siberian Elm, and 1 Edible Loquat located around the perimeter of the existing reservoir (see attached aerial photograph for positions, page 7).

Due to the location of the site, any municipal code governing tree preservation within the city of San Gabriel would be relevant to this project. Upon overview, it appears that only trees classified as "Class I" trees have specific restrictions with regards to trimming and/or removal on private property. Of the twenty-one trees evaluated for this project, only the oak trees fall into this category. The following text is taken directly from the City Of San Gabriel Municipal Code:

LANDMARK or HISTORICALLY SIGNIFICANT: Any Class I tree or stand of trees (except palm trees) that meet one of the following criteria:

- (1) A tree or stand of trees which have taken on an aura of historical value by virtue of age or location.
- (2) A tree which has a trunk with a 40-inch circumference (12.75-inch diameter) if located in the front yard or 60 inches in circumference (19-inch diameter) if located in the rear and side yards.



MATURE. Any Class I tree (except a palm or fruit tree) located in the front yard which exceeds 19 inches in circumference (6-inch diameter) or, if located in a side yard and rear yard, one which exceeds 30 inches in circumference (9.5-inch diameter) measured four feet above natural grade.

95.22 PERMIT REQUIRED FOR TRIMMING CERTAIN TREES.

(A) *No person shall cut, trim, prune, transplant, destroy or remove more than one-third (33%) of the live foliage of any mature Class I tree located anywhere on private property in the Single-Family Residential Zones of the city without first obtaining a permit from the city.*

(B) *No person shall cut, trim, prune, transplant or destroy more than one-third (33%) of the live foliage or remove any tree of "historical/landmark" significance located in any of the Single-Family Residential Zones of the city anywhere on private property without first obtaining a permit from the city.*

(C) *No person shall reduce the height of any protected mature tree by more than one-fourth (25%) over two years without first obtaining a permit from the city.*

95.23 EXEMPTIONS.

(C) *Trees that must be removed or trimmed by order of any public agency or public utility having jurisdiction are exempted from the permit requirement.*

(D) *Normal and routine trimming or pruning which does not result in damage or death to a tree or does not result in the loss of more than one-third (33%) of the live foliage and limbs of any mature tree is allowed without a permit. Removal of deadwood is allowed without a permit.*

DISCUSSION: The project detail calls for the removal of seven trees within the property boundary: 5 Victorian Box trees located in the dirt planting area at the front of the property, and 2 Oriental Arborvitae trees located just inside the fence area. All the Victorian box trees show signs of dieback and decline, with several having significant amounts of decay present (see Figures 1-3). The arborvitaes are relatively healthy, however a new operations building is planned for the area where they are now growing and their removal is needed to facilitate the new construction. Neither of these trees is listed as a Class I tree, and they may therefore be removed without special permit.

There is one private tree (located in the rear yard area of 541 Adelyn Drive) which could impact the project in that it is considered hazardous due to the presence of a large amount of decay. This tree has visible fruiting bodies (conks) for at least two types of decay fungi: Sulfur fungus (*Laetiporus sulphureus*) and *Ganoderma sp.* These types of fungi cause heart, trunk and butt rots which have obviously spread throughout the entire tree (see Figures 6-9). The new "Metering Facility" is planned to be built directly under the canopy of this tree. If any portion of the tree should fail, this building could be damaged and anyone in the immediate area could be severely injured. Due to the clear hazard associated with this tree, the owner would be well advised to seriously consider its removal.

TREE #14: Of the remaining trees, there are three oak trees which will require special consideration with regards to the reconstruction project. The first oak, identified as Tree # 14, is



located at the rear of the reservoir near the northwest corner (see Figure 10). This tree is very healthy with great looking foliage, structure, and high vigor. The existing concrete footing is 10 feet from the trunk base and this will be replaced with temporary shoring during the construction process. After completion of the excavation and reconstruction, the final footing will actually be an additional five feet from the tree (see Figure 11).

Due to the available growth space currently present there is expected to be limited root development within the planned exaction area. However, even if there are roots present, a tree of this size has a vast and far reaching root system which will see little long term impact due to this project. In order to help minimize the expected short term impacts, it is recommended that a temporary protective fence be installed which encompasses as much of the dripline as possible. This area should be kept clear of any and all construction equipment and debris including excess soil. The area within the protective fencing should be appropriately mulched with leaf litter and or wood chips.

TREE #15: This is an Edible Loquat located directly behind the reservoir. This tree is already struggling as evidenced by the dieback throughout its canopy and very poor vigor (see Figure 12). As reconstruction of the reservoir is not expected to impact this tree, no specific recommendations are given. However, more than likely this tree will continue its downward spiral and may die regardless of what happens adjacent to it. Management may wish to consider replacement of this tree with a new specimen of acceptable species for the area somewhere else on the site.

TREE #16: Located on the eastside of the reservoir, towards the back is Tree #16, a Siberian Elm with low to moderate vigor. The canopy of this tree is full of dead twigs and branches, and it is clearly in a state of decline (see Figure 13). However, the planned construction will occur well away from this tree and should not contribute to its continued poor health. It is recommended that the tree be pruned in order to remove the dead material and help encourage new, healthy foliar development.

TREE #17: The second oak on the site is identified as Tree # 17 and it is also located on the eastside of the reservoir. Currently the concrete footing sits approximately 6 feet from the trunk base and this is where the temporary shoring will be installed (see Figure 14). There is already canopy wide twig dieback, indicating moderate to low vigor (see Figure 15). This tree is leaning slightly out over the reservoir, which means that most of the large supportive roots will be present on the back side of the tree. Any trenching along the concrete edge will encounter a few feeder roots, but the majority of the root system is most likely located in the landscaped area surrounding the tree. Due to the direction of growth, pruning should be done which appropriately raises the canopy to accommodate construction equipment. As with the other trees, protective fencing should also be installed around this oak to ensure as much of the root system as possible is left undisturbed.

TREE #18: This next tree is a Pecan and it is located on the eastside of the reservoir as well, on the downward portion of the slope area (see Figure 16). There is some twig dieback in the



canopy, but otherwise the tree looks really good, with moderate vigor. The base of the tree is 15 feet from the concrete footing and no adverse impacts are expected from the reconstruction project. The only specific recommendations offered here are to prune out the dead twigs, and be sure that soil does not accumulate around the trunk base.

TREE #19: The last oak on the site, this tree has a trunk diameter of 17 inches and is located 12 feet away from the current concrete footing (see Figure 17). This tree has only moderate to low vigor with canopy wide thinning and dieback. The majority of the canopy is distributed over the dirt planting area with limited leaf litter accumulation. Due to the canopy placement, the “dripline” can easily be protected by installing appropriate fencing. It is recommended that an organic mulch layer be placed within the protected area and that all dead material be pruned out. As with all the trees being retained on this project site, this oak should be monitored for any change in health.

TREE #20: This last tree is a double stemmed Avocado of which one of the stems leans heavily over the roof of the reservoir (see Figure 18). The tree itself is very health with high vigor and good crop production. The only real issue is whether a portion of the tree will need to be removed. Due to the lean, it may be necessary to remove the secondary stem in order to accommodate construction equipment. This can be done, if absolutely necessary, without affecting the overall health of the main stem, as these two are not dependant on each other for any resources.

CONCLUSIONS: In order to help ensure that all trees designated for retention on the site have sufficient opportunity to grow and thrive, the following general requirements should be accommodated to the greatest extent possible alongside those offered in the discussion section above:

- Identify a protection zone for each tree to be retained (providing adequate space around protected trees from the beginning of the project to its conclusion). A minimum five-foot radius should be maintained, but the larger the tree the greater this distance should be.
- Install temporary fencing around the protection zone. No construction activity should be allowed within this area, including storage, dumping of excess material, soil, etc.
- Maintain a minimum distance of 10 feet from trunk bases for any excavation or a distance equal to 3 ½ times the trunk diameter-whichever is greatest.
- Restrict stripping of topsoil around retained trees.
- Before any grading, appropriately root prune tree(s) at edge of any excavation to required depth.
- Maintain the natural grade around the tree at all times.
- Avoid open trenching in the root area if at all possible. However, if necessary, this activity should be restricted to only one side of the tree, and at an appropriate distance.



- Install temporary shoring where open trenching is necessary, being careful to disturb as few roots as possible.
- Consider minimum height requirements of construction equipment and appropriately prune any necessary branches.
- Provide supplemental irrigation in similar volumes and seasonal distribution as would normally occur at the site.
- Wood chips generated during the clearing of onsite vegetation should be used as mulch under retained trees. This will help reduce loss of soil moisture, protect against compaction, and moderate soil temperatures. (Keep mulch from accumulating directly adjacent to the trunk base).
- Trees should be monitored during and after construction on a regular basis. Watch for signs of stress; such as small twig and branch dieback, leaf discoloration and loss, and general decline in tree health and/or vigor.

This report has been prepared according to information available at the time of the original inspections and does not take into account any changes that may have occurred since that time. It is the belief of this arborist that if the above detailed recommendations are followed, this will act to ensure the survival of the desired trees.

Should you have any questions or require additional information, please feel free to contact me at (714) 412-7813.

Respectfully,


Rebecca Mejia

ISA Certified Arborist # WE-2355A

West Coast Arborists Inc.

Wilson Reservoir-Tree Data

TREE #	COMMON NAME	DBH	HGT	COMMENTS:	Photo #
1	Victorian Box	13.3	30	Tree to be removed. Declining canopy.	1-3
2	Victorian Box	7.8	25	Tree to be removed. Declining canopy.	1-3
3	Victorian Box	13.0	20	Tree to be removed. Declining canopy, poor vigor.	1-3
4	Victorian Box	12.8	20	Tree to be removed. Declining canopy, poor vigor, leaning.	1-3
5	Victorian Box	11.0	12	Tree to be removed. Broken and decayed main stem, poor vigor	1-3
6	Oriental Arborvitae	13.9	30	Tree to be removed. Good vigor.	5
7	Oriental Arborvitae	12.3	30	Tree to be removed. Good vigor.	5
8	Bald Cypress	11	45	Tree to be retained. High vigor, new new foliage and fruit production.	4
9	Bald Cypress	9.4	40	Tree to be retained. High vigor, new new foliage and fruit production.	4
10	Bald Cypress	8	40	Tree to be retained. High vigor, new new foliage and fruit production.	4
11	Bald Cypress	10.0	40	Tree to be retained. High vigor, new new foliage and fruit production.	4
12	Bald Cypress	11	50	Tree to be retained. High vigor, new new foliage and fruit production.	4
13	Bald Cypress	14	35	Tree to be retained. High vigor, new new foliage and fruit production.	4
14	Coast Live Oak	33	30	Tree to be retained. Mature, healthy tree with high vigor.	10 & 11
15	Edible Loquat	5	12	Declining, but not impacted by the project.	12
16	Siberian Elm	12.2	20	Tree to be retained, some canopy dieback, low-moderate vigor.	13
17	Coast Live Oak	21	30	Tree to be retained, slight lean, some canopy dieback, moderate vigor	14 & 15
18	Pecan	12.3	30	Tree to be retained, some canopy dieback, moderate vigor.	16
19	Coast Live Oak	17	35	Tree to be retained, some canopy dieback, moderate-low vigor.	17
20	Avocado	23.3	35	Tree to be retained, high vigor. One stem leans heavily over the reservoir and may need to be removed in order to accomodate construction equipment.	18
Private	Carob	56	45	Huge trunk wound, visible conks in the basal cavity, along main stem and on several lateral limbs. This tree is hazardous and could fall at any time and cause injury to persons and property.	6-9



Inventory Map



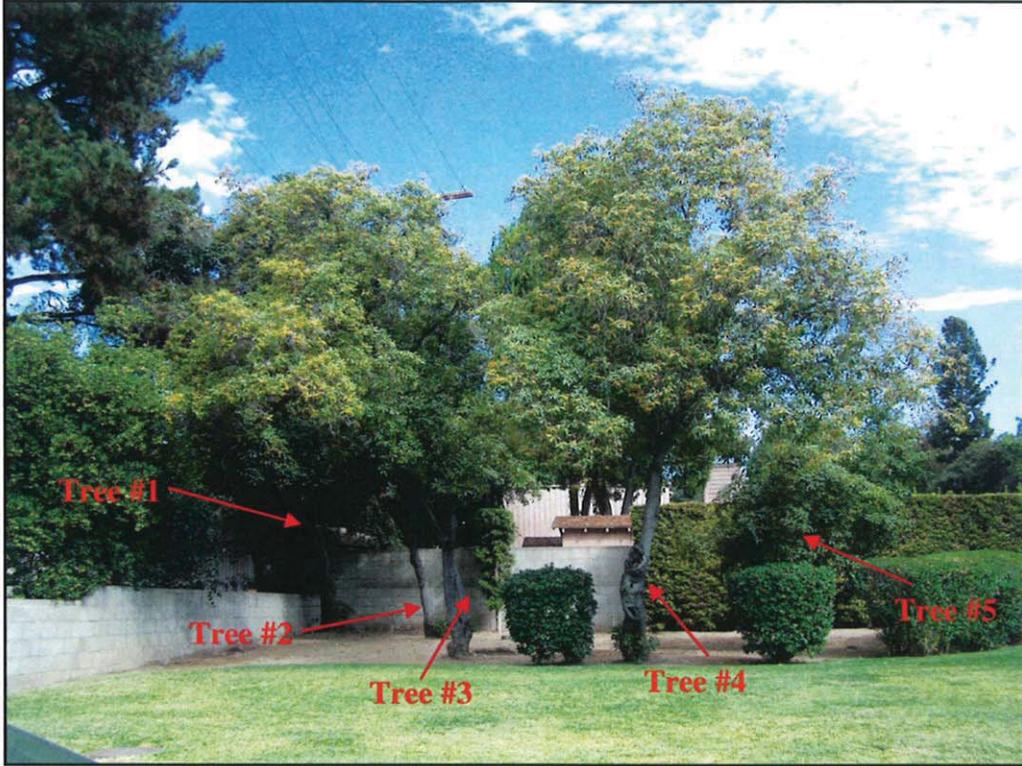
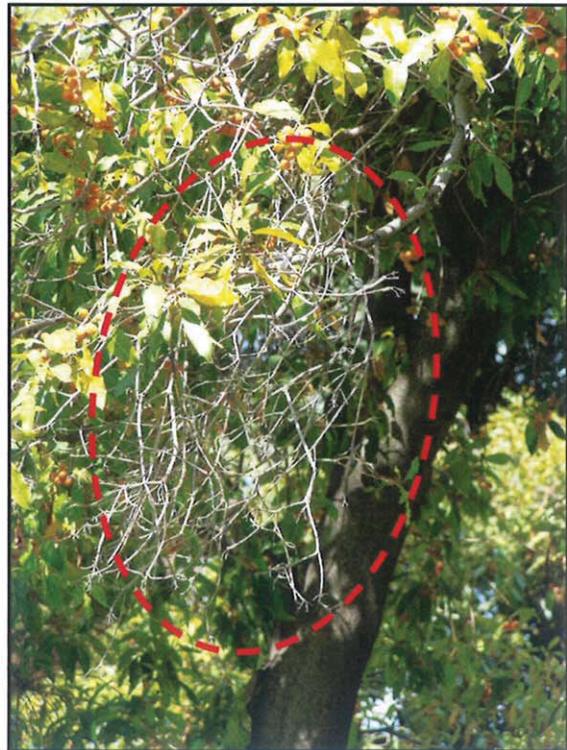


Figure 1. Showing the five Victorian Box trees planned for removal, All of these trees are of low vigor with various levels of decay as well as canopy wide dieback.



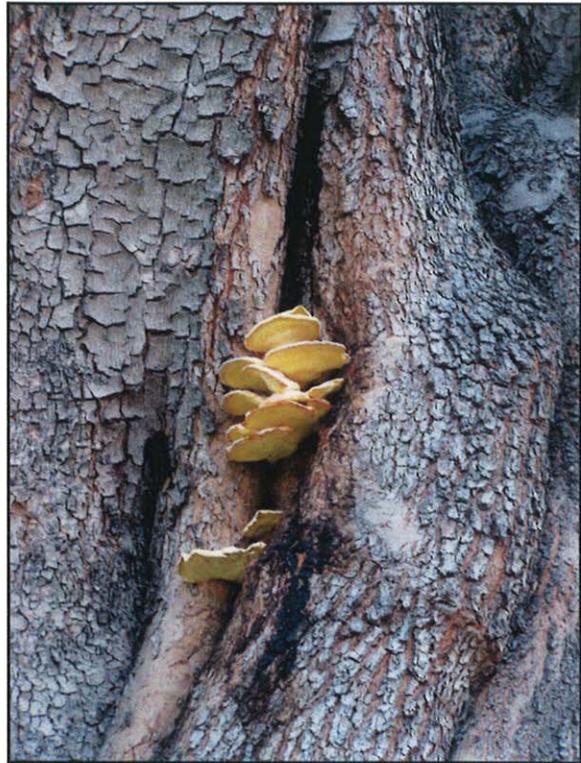
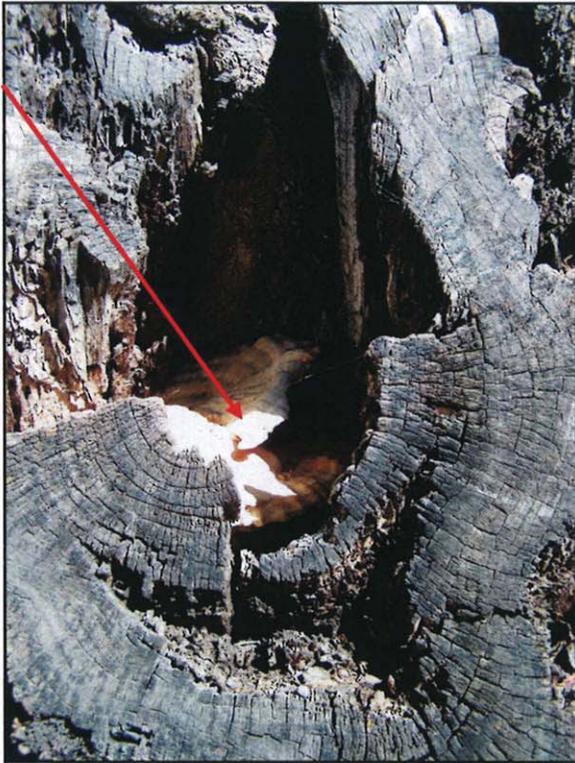
Figures 2. & 3. Showing examples of the decay and canopy decline found on all of the Victorian Box trees.



Figure 4. Showing the row of six Bald cypress trees which are to be retained on the site. The driveway will be moved and the growth space enlarged. All of these trees are healthy with good vigor and should continue to thrive on the site.



Figure 5. Showing the two Oriental Arborvitae trees which are planned for removal. The new operations building is designed to be built in this location.



Figures 6-9. Showing the various fungal growths found on the private carob tree directly adjacent to the driveway entrance. At least two types of decay are confirmed, both Sulfur Fungus and Ganoderma. These are heart rot fungi which have extensively attack and progressed throughout all parts of this tree. Because of this, the tree is a hazard to anyone or anything in the fall path of any part of the tree.

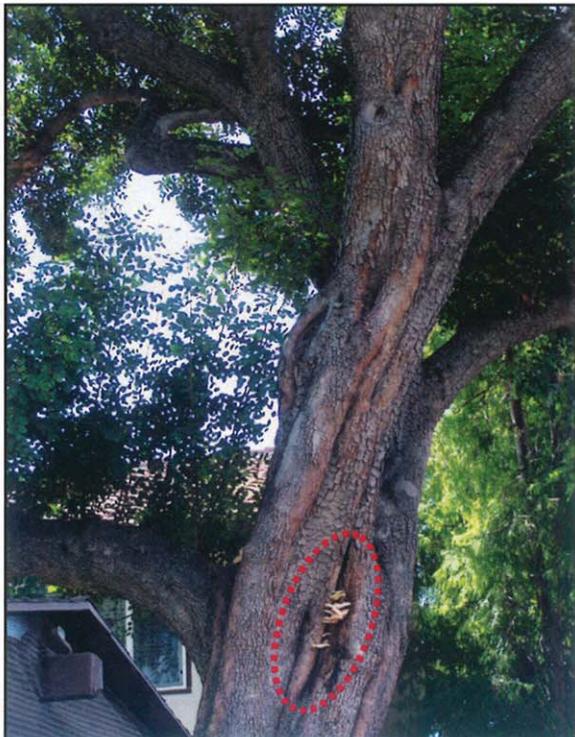




Figure 10. Showing Tree # 14, a 33 inch diameter Coast Live Oak located near the rear of the reservoir. This tree is very healthy with great structure and high vigor.

Figure 11. Temporary shoring will be 10 feet from the trunk base very near where the existing concrete is. After which, the new footing will actually be an additional five feet away from its current placement which will increase the space the tree has to grow.





Figure 12 (at left).
Showing Tree #15, the Edible Loquat located at the rear of the reservoir. Although difficult to see in this photograph, the canopy of this tree is in decline with dead and or dying foliage throughout. The size and location of this tree lessens any potential construction impacts.

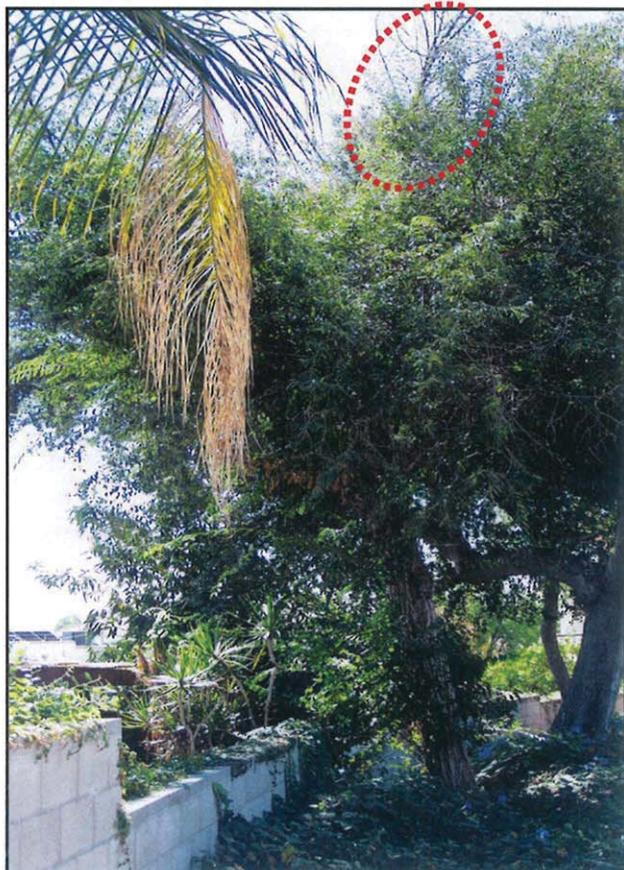


Figure 13 (at right).
Showing Tree #16, a Siberian Elm located at the rear, east side of the reservoir. The canopy of this tree is also in a state of decline with dead twigs and branches throughout. This tree is located at a good distance from the current concrete footing and construction impacts are expected to be minimal.

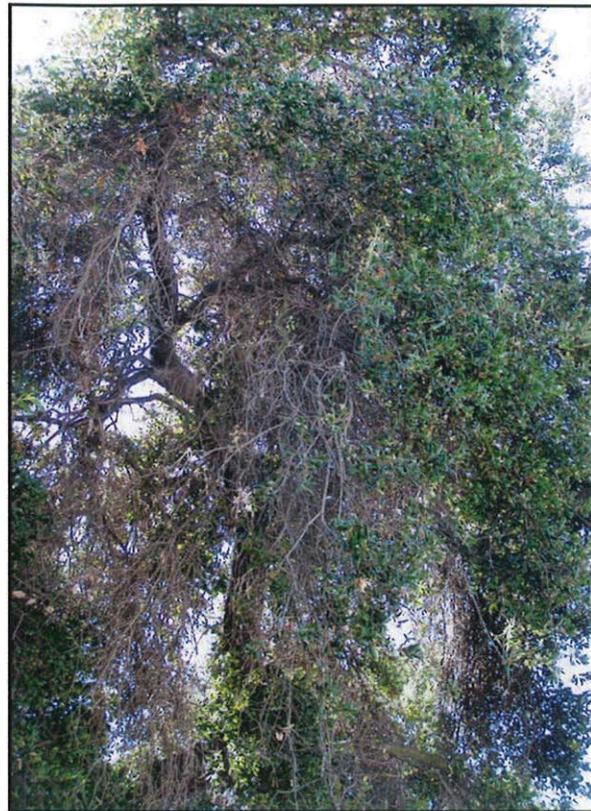


Figure 14 & 15 (above). Showing Tree #17, a 21 inch diameter Coast Live Oak on the eastside of the reservoir. This tree is of moderate vigor, with dead twigs throughout the canopy. The oak is 6 feet from the current footing, and will have temporary shoring installed in this location. The tree is leaning slightly toward the facility, which means that most of the large support roots are to the rear of the tree and root loss is expected to be minimal. Prune out dead wood and install protective fencing.



Figure 16 (at left).
 Showing Tree #18, a Pecan tree located 15 feet away from the current concrete footing. Reconstruction of the reservoir is not expected to have any adverse impact on this tree. The only specific recommendation would be to ensure that soil debris does not accumulate at the bottom of the slope thereby burying the trunk base.



Figure 17 (above). Showing the placement of the temporary shoring as it relates to Tree #19. This 19 inch diameter Coast Live Oak tree sits 12 feet from the current concrete footing. Temporary shoring will be installed according to plan details and should have no adverse impact on the long term health of this oak tree. The majority of the canopy is over the landscaped area and protective fencing can easily be placed in such a way that the root system and trunk base are not impacted.



Figure 18 (at left).
 Showing Tree #20, a double stemmed Avocado. This tree is in really good health, with high vigor and is currently producing a large crop of fruit. If possible, remove only the branch indicated first to see if this is adequate to accommodate construction equipment and new footings. Due to the positioning of the secondary stem, it may be necessary to remove it entirely at the base. Although this will be contribute to a loss of productivity, the main stem should be able to compensate and grow additional limbs to fill the void.



ASSUMPTIONS AND LIMITING CONDITIONS

1. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the Consultant can neither guarantee nor be responsible for the accuracy of information provided by others.
2. The Consultant will not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.
3. Loss or alteration of any part of this report invalidates the entire report.
4. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior written consent of the Consultant.
5. This report and any values expressed herein represent the opinion of the Consultant, and the Consultant's fee is in no way contingent upon the reporting of a stipulated result, a specified value, the occurrence of a subsequent event, nor upon any finding to be reported.
6. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the tree(s) or property in question may not arise in the future.
7. Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. It is highly recommended that you follow the arborist recommendations; however, you may choose to accept or disregard the recommendations and/or seek additional advice.
8. Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specific period of time. Likewise, remedial treatments performed cannot be guaranteed.
9. Any recommendations and/or performed treatments (including, but not limited to, pruning or removal) of trees may involve considerations beyond the scope of the arborist's services, such as property boundaries, property ownership, site lines, disputes between neighbors, and any other related issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist can then be expected to consider and reasonably rely on the completeness and accuracy of the information provided.
10. The author has no personal interest or bias with respect to the subject matter of this report or the parties involved. He/she has inspected the subject tree(s) and to the best of their knowledge and belief, all statements and information presented in the report are true and correct.