Orange County Sanitation Dist. Plant 2

Tree Assessment-Construction Impact Report

SUBMITTED TO:

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Table of Contents

Assignment & Methodology	1
Map 1: Tree Locations	2
Map 2: Site Plan Detail	2
Table 1:Spreadsheet-Tree Assessment Data	4
Discussion	5
Conclusions	6
Appendix A – Photographs	8
Appendix B – Table 2: Health & Condition Components 1.	3
Appendix C – General Construction Protection Guidelines. 1 Table 3: Determining the TPZ 1 Table 4: Minimum and Recommended TPZ, per tree 1 Bibliography 20	5 8 9 0
Assumptions & Limiting Conditions	1
Certificate of Performance	2



BACKGROUND AND ASSIGNMENT

Ms. Nasrin Nasrollahi contacted West Coast Arborists, Inc. (WCA) to provide arborist services for the Orange County Sanitation District. Following the approval of the proforma for arborist services, I visited the site on September 12, 2022 to collect relevant information per the scope of work. The scope of work for the requested arborist services, as detailed in Proposal #76627, is as follows:

- Prepare one construction impact arborist report for trees (number to be determined on site) that may be impacted by the planned construction of a new building:
 - Perform a general health and condition assessment of the trees preidentified by the client. The level of assessment used for this project involved a visual assessment only of the individual trees from a ground-based, walk-by perspective. This process was used to identify any obvious defects or special conditions.
 - Determine whether the subject trees are considered good candidates for retention at the site or if removal is warranted.

The purpose of this report is to provide as complete and unbiased an opinion as possible with regard to the health and structural condition of the inspected trees on the day inspected. The content of this report is intended to be used by the Orange County Sanitation District, which has jurisdiction and is responsible for the maintenance of the trees.



Map 1. Showing the location of the assessed trees.



Map 2. Showing the site plan provided by the client: CDSM will be used to install footings along the western property line, at a length of 250 feet directly east of the trees.



Below: The black arrow shows the extension of the trees' canopies towards the planned construction area. Additional space is required for excavation and equipment to perform the CDSM, which will move impacts to within 10 feet of the wall (red arrow). The yellow arrow indicates the location of the new building wall, 15 feet from the wall.





SUMMARY STATEMENT: Retention of the eucalyptus trees evaluated is not advised based on their overall health, structure, form, and degree of expected impacts from construction. The vast majority of the trees are in fair or poor health, with similar structure and form conditions. The level of encroachment into the Critical Root Zone (CRZ) of the trees is considered excessive, as is the expected encroachment into their driplines.

SITE CONDITIONS: This site functions as a primary recovery and treatment facility for sewage collected from the Plant operations service area. The location where the subject trees are growing has limited public access aside from the sidewalk and street on the west side of the fence line. There is currently no supplemental irrigation being provided to the subject trees; the ground is very dry and soft, giving way easily underfoot. The extent of the planned site development will extend to within ten feet of the property wall.

TREE CONDITIONS: The trees consist of a mix of Silver Dollar Gum (*Eucalyptus polyanthemos*) and Desert Gum (*E. rudis*) that are all highly stressed, with thinning canopies and visible decline and dieback. Most of the trees are leaning, as can be seen in the photographs in Appendix A. Ground squirrels have dug numerous tunnels, which have undermined many of the trees and caused the soil to become unstable along the project area. Table 1, page 4, provides a summary of the overall health, structure, and form of each tree as well as the recommended Tree Protection Zone (TPZ) based on individual plant health and condition.

A Tree Protection Zone (TPZ) is intended to protect roots and soil within the Critical Root Zone (CRZ). The CRZ is that area immediately adjacent to the trunk where roots essential for tree health and stability are located. A variety of guidelines have been developed for determining the minimum distance away from the trunk base at which roots may be safely cut. The most recommended minimum distance is 6-18 inches for every 1-inch of trunk diameter. However, this is only a guideline and needs to be adjusted on a per-tree basis depending on the species, overall tree health, structure, and site conditions.

The linear distances required for the trenching and foundation placement, **Cement Deep Soil Mixing (CDSM)**, do not allow enough space for a proper Tree Protection Zone to be established for these trees. The planned construction will damage the roots and canopies of the trees, compromising both short and long-term health and stability. Healthy, vigorous *Eucalyptus species* are considered to have a moderate tolerance to construction disturbance and root loss. However, this tolerance level decreases to "low" in those trees that are stressed or in decline. Trees with poor structure or form are also considered to have a low tolerance to root disturbance due to the higher probability of the tree toppling over due to root loss. Refer to the conclusions section for additional discussion.



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Table 1. Summary of Tree Conditions, Recommended TPZ:

Tree		пи	St. 1	Б		
#	DBH	Health	Structure	Form		
620	24,12	Good	Fair	Fair	Tree is double stemmed & within the construction footprint.	45
621	8	Poor	Poor	Poor	Tree is thinning, with advanced dieback, & is within the footprint.	10'
622	11	Poor	Poor	Poor	Tree is thinning, with advanced dieback, & is within the footprint.	14'
624	13	Fair	Fair	Fair	Tree is thinning, with advanced dieback, & is within the footprint.	13'
626	15	Poor	Poor	Poor	Leaning, dieback; tree is within the construction footprint.	19'
628	12	Poor	Poor	Poor	Tree is thinning, with advanced dieback, & is within the footprint.	15'
630	11	Poor	Poor	Poor	Tree is thinning, with advanced dieback, & is within the footprint.	14'
631	10	Poor	Poor	Poor	Tree is thinning, with advanced dieback, & is within the footprint.	13'
632	9	Fair	Poor	Poor	Lean, advanced dieback & tree is within the construction footprint.	9'
633	15	Good	Poor	Poor	Tree is leaning & is within the construction footprint.	19'
634	6	Poor	Poor	Poor	Advanced level of dieback & is within the construction footprint.	8
635	8	Poor	Poor	Poor	Tree is leaning, with advanced dieback & is within the footprint.	10'
636	12	Fair	Poor	Fair	Tree is leaning, has dieback & is within the construction footprint.	15'
637	13	Poor	Poor	Poor	Tree is leaning, with advanced dieback & is within the footprint.	16'
639	14	Fair	Poor	Fair	Tree is leaning, thinning & is within the construction footprint.	18'
641	4,9	Fair	Poor	Poor	Tree is leaning, thinning & is within the construction footprint.	16'
642	11	Fair	Fair	Fair	Trunk injury, undermined & within the construction footprint.	11'
649	11	Good	Fair	Fair	Tree is within the footprint of new construction.	11'
650	6	Poor	Poor	Poor	Leaning, dieback, undermined; within the construction footprint.	8'
651	6	Fair	Fair	Fair	Tree is leaning, thinning & is within the construction footprint.	6'
652	8	Fair	Poor	Poor	Tree is leaning, thinning & is within the construction footprint.	10'
653	14	Good	Fair	Fair	Tree is within the construction footprint.	14'
654	15	Good	Poor	Poor	Tree is leaning, undermined & within the construction footprint.	19'
655	7	Poor	Poor	Poor	Advanced dieback, thinning, & within the construction footprint.	9'
656	10	Fair	Poor	Poor	Tree is leaning, undermined, & within the construction footprint.	13'
657	12	Fair	Poor	Poor	Tree is leaning, thinning, & within the construction footprint.	15'
660	13	Good	Fair	Fair	Bend in the trunk, thinning & is within construction footprint.	13'
661	12	Fair	Fair	Fair	Tree is within the construction footprint.	12'
663	10	Good	Fair	Fair	Tree is leaning & is within the construction footprint.	13'
665	11	Fair	Fair	Fair	Tree is within the construction footprint.	11'
666	16	Good	Poor	Poor	Tree is leaning, thinning & is within the construction footprint.	20'
667	15	Good	Fair	Fair	Tree is within the construction footprint.	15'
668	14	Good	Fair	Fair	Trunk near the wall but leaning towards the construction zone.	14'
670	12	Fair	Fair	Fair	Tree is thinning, undermined, & within the construction footprint.	12'
673	11	Fair	Fair	Fair	Tree is within the construction footprint.	11'
674	17	Fair	Poor	Poor	Tree is leaning, with dieback, & is within the footprint.	21'
677	11	Fair	Fair	Fair	Tree is thinning, with dieback, & is within the footprint.	11'
678	11	Fair	Fair	Fair	Tree is thinning, with dieback, & is within the footprint.	11'
679	13	Fair	Fair	Fair	Tree is thinning, with dieback, & is within the footprint.	13'
680	13	Fair	Poor	Poor	Tree is leaning with trunk cracking & is within the footprint.	16'
681	5	Good	Poor	Poor	Sucker growth from the stump, parent tree removed.	
682	7	Fair	Fair	Fair	Tree is thinning, with dieback, & is within the footprint.	7'
683	6	Fair	Poor	Poor	Tree is thinning, with dieback, & is within the footprint.	8'
684	13	Fair	Fair	Fair	Tree is thinning, with dieback, & is within the footprint.	13'
685	9	Fair	Fair	Fair	Tree is thinning, with dieback, & is within the footprint.	9'
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*DBH: Diameter Breast Height, measured in inches with a standard D-tape at 4.5 feet above ground level.



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DISCUSSION:

Cement Deep Soil Mixing (CDSM). This is a soil improvement technology used to construct cutoff or retaining walls and to treat soils. The stabilized soil columns are formed by a series of mixing shafts guided by a crane-supported set of leads. As the mixing shafts are advanced into soil, cement grout is pumped through the hollow stem of the shaft and injected into the soil at the tip. The auger flights and mixing blades on the shafts blend the soil with grout in a pugmill fashion. The mixing shafts are positioned to overlap one another and form a continuously mixed overlapping column. When the design depth is reached, the augers are withdrawn, and the mixing process is repeated on the way to the surface. Left behind are stabilized CDSM columns having the following properties: low permeability, improved load bearing capacity and shear strength, and are able to withstand differential soil and hydrostatic loading.

The *Guide for Plant Appraisal 10th Edition, Second Printing* was used to determine a condition rating for each tree's health, structure, and form; see the *Health and Condition Components* table on page 13. Refer to the images in Appendix A for visual information. The majority of the trees are in fair to poor health and condition and are not considered good candidates for site retention. The level of encroachment, as shown in the images on page 2, is too severe and will cause extensive damage to the roots and tree canopies.

The decision process for determining the TPZ for the subject trees was based on the American National Standards Institute (ANSI) *Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, and Construction)* A300 (Part 5)-2012. Per this standard:

55 Practices

55.1 Tree protection zone

- 55.1.1 A tree protection zone (TPZ) shall be specified around all trees, shrubs, and other plants and soil areas designated for retention and protection.
- 55.1.2 The TPZ should be defined based on:
 - Species tolerance; the expected impact of construction activities; Tree size (e.g., trunk diameter), age, and health; and Soil conditions (e.g., moisture, texture, density).
- 55.1.3 The TPZ radius should be between 6-18 times the trunk diameter (DBH). (dependent on variable factors including plant species, age, size, health, and structural condition).
- 55.1.4 When the minimum TPZ radius cannot be achieved, appropriate mitigation shall be recommended.

Refer to Appendix C for the minimum and also the recommended TPZ for the subject trees as well as general guidelines regarding root protection, establishing tree protection zones, and safe root-



cutting practices; these guidelines are provided for reference only for this project but can also be used for future projects.

Suitability of retention: Good: a tree with good health and structural stability that has the potential for longevity at the site. Moderate: a tree with fair health and/or structural defects that can be abated with treatment; the tree will require more intense management and monitoring and may have a shorter lifespan than those in the "good" category. Poor: a tree in poor health or with significant defects that cannot be mitigated; the tree is expected to continue to decline, regardless of treatment; the species or individual tree may have characteristics undesirable for landscape and is generally unsuitable for use in the area. Mature and overmature trees are less able to tolerate construction impacts.

CONCLUSIONS:

Of the 45 trees I assessed, 11 had good health, 23 had fair health, and 11 had poor health. None of the trees have good structure or form: 20 have fair structure, 25 have poor structure, 22 have fair form, and 23 have poor form. Construction impacts will be significant for all of the trees and it is my opinion that none are suitable for retention at the site. The CDSM process, as described above, that will be used to install the footings for the new building will cause a great deal of disturbance within the critical root zone of all the trees identified in Table 1, page 4.

• With respect to the expected root loss: there is always a risk of a failure or a decline in tree health occurring and there can be many factors that contribute to such an event. Some of the factors affecting a tree's response to root cutting include the tree species, age, size, site conditions, existing problems, vigor, and extent of pruning. Mature trees are less tolerant of root pruning than young trees, trees on sites exposed to high winds are less tolerant than sheltered trees, and trees with defects or poor general health are not good candidates for root pruning

In addition to a high level of expected root loss, the subject trees will require a significant degree of canopy reduction to allow space for vehicle and equipment clearance; this action would require the removal of fifty percent or more of the crown for most of the subject trees.

- Pruning live branches reduces a tree's ability to photosynthesize and manufacture sugar. This can result in a decline in plant vigor and a reduction in folar growth. The most common recommendation is to not remove more than 25% of live material in one growing season. However, mature, stressed or sensitive often do not tolerate even minimal removal of live branches. Excessive removal can result in decline, reduced defense against pests and diseases, and sunburn on newly exposed branches and trunks, and plant death.
 - The greater the amount of foliage removed and heartwood exposed from pruning, the greater the impact to the tree. When extensive pruning is required, the effects



include reduced leaf area, increased sun exposure, and a change in weight distribution.

- In addition to depriving the tree of its ability to photosynthesize and manufacture sugar, over-pruning, as would be necessary for this project, causes numerous injuries that the tree has to deal with by developing chemical and physical barriers to resist the spread of decay and disease organisms. This defense process uses the energy reserves intended for foliar development. Oftentimes, the tree has no reserves left to produce the foliage it needs to survive, and plant decline and death occur. An already stressed or unhealthy tree will have an even slower response time in dealing with the pruning injuries.
- One potential additional impact of the severe pruning needed along the planned new expansion, is it will alter the form of the trees, redistributing weight and the way the tree(s) respond to wind and other forces. When combined with the expected root loss within the CRZ, the overall impacts to plant stability are significant, making the trees poor candidates for retention

It is my recommendation that the trees be removed prior to construction starting, being sure to follow all applicable regulations with regards to verifying that no active bird nests or other protected wildlife are present within the tree canopies. New trees should be selected based on their size at maturity as well as their cultural needs. The planting site may require amendments to the soil including installing mulch and returning irrigation to the site, ensuring the best possible chance of a healthy establishment.

The intent of this report is to provide as complete and unbiased an opinion as possible with regard to the current health and condition of the specific trees discussed above. It is hoped that the information provided is sufficient to enable management staff to make necessary decisions regarding the maintenance of these trees. However, should you have any questions or require additional information, please feel free to contact me at (714) 412-7813.

Respectfully,

Rebecca Mejia

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APPENDIX A - PHOTOS



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Images 1-3. Showing the row of trees that will be adversely impacted by planned construction. The project will require encroachment within 10 feet of the block wall, severely damaging the roots and canopies of 45 trees. In addition to the horizontal clearance needed, a high degree of canopy reduction would be necessary to accommodate equipment, vehicle, and completed building heights. Based on the overall health and condition of the trees, they are not considered good candidates for retention.

Image 3 also shows where the building will be (green), which is 15 feet from the block wall. This is not a sufficient distance to be able to safely protect the roots or canopies of the trees.



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Images 4-7. Showing examples of the poor health, structure, and form of the subject trees.



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Images 8-10. Showing examples of where many of the trees have been undermined by the burrowing actions of ground squirrels. The soil around the trees is very dry and soft, giving way easily underfoot. Construction impacts would further impact tree health and stability.





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Showing additional images of the trees impacted by the planned construction project site:

Image 11 (top-left). The soil around the trees is very dry and soft and full of animal burrows, which has compromised the stability of many of the trees.

Image 12 (top-right). Showing more of the trees with poor health and condition. These trees are not considered ideal candidates for site retention.

Image 13 (left). Shows another view of the way planned construction will encroach into the critical root zone and canopies of the subject trees.



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APPENDIX B

Health & Condition Components



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Table 2:						
Rating category	Health	Structure	Its Form	Percent rating		
Excellent	High vigor and nearly perfect health with little or no twig dieback, discoloration, or defoliation.	Nearly ideal and free of defects.	Nearly ideal for the species. Generally symmetric. Consistent with the intended use.	81% to 100%		
Good	Vigor is normal for the species. No significant damage due to diseases or pests. Any twig dieback, defoliation, or discoloration is minor.	Well-developed structure. Defects are minor and can be corrected.	Minor asymmetries and/or deviations from species norm. Mostly consistent with the intended use. Function and aesthetics are not compromised.	61% to 80%		
Fair	Reduced vigor. Damage due to insects or diseases may be significant and associated with defoliation but is not likely to be fatal. Twig dieback, defoliation, discoloration, and/or dead branches may comprise up to 50% of the crown.	A single defect of a significant nature or multiple moderate defects. Defects are not practical to correct or would require multiple treatments over several years.	Major asymmetries and/or deviations from species norm or intended use. Function or aesthetics are compromised.	41% to 60%		
Poor	Unhealthy and declining in appearance. Poor vigor. Low foliage density and poor foliage color are present. Potentially fatal pest infestation. Extensive twig and/or branch dieback.	A single serious defect or multiple significant defects. Recent change in tree orientation. Observed structural problems cannot be corrected. Failure may occur at any time.	Largely asymmetric and/or abnormal. Detracts from intended use and/or aesthetics to a significant degree.	21% to 40%		
Very Poor	Poor vigor. Appears to be dying and in the last stages of life. Little live foliage.	Single or multiple severe defects. Failure is probable or imminent.	Visually unappealing. Provides little or no function in the landscape.	6% to 20%		
Dead				0% to 5%		

This table is taken from the Guide For Plant Appraisal, 10th Edition.



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APPENDIX C – Construction Protection Guidelines



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To ensure the best survival rate of any tree(s) impacted by construction projects, it is recommended that the following guidelines be implemented to the greatest extent possible:

• Identify a tree protection zone (TPZ) for each tree to be retained; provide adequate space around protected trees from the beginning of the project. This generally involves outlining the dripline of a given tree and installing fencing around that tree. No construction activity should be allowed within this area, including storage, dumping of excess material, etc. See the example below:

<u>Tree protection barrier</u> encloses the Tree Protection Zone and is at least 4' tall, highly visible, sturdy, permanent and has warning signs on or near it for the duration of any construction activities.



<u>Tree Protection Zone</u> (TPZ) is an area where construction activities are prohibited or restricted to prevent injury to preserved trees, especially during pre- construction and construction, and includes the Critical Root Zone and/or beyond.



Figure 1: showing an example of how to properly install tree protection barriers to protect the Tree Protection Zone (TPZ).

- Before any grading, appropriately root prune tree(s) at the edge of any excavation.
- Always maintain the natural grade around the tree(s).
- Avoid open trenching in the root area. If necessary, this activity should be restricted to only one side of the tree and at an appropriate distance, as discussed below in the root pruning guidelines provided below.



- Consider minimum height requirements of construction equipment and prune any branches accordingly.
- Provide supplemental irrigation in similar volumes and seasonal distribution as would normally occur.
- Wood chips generated during the clearing of onsite vegetation should be used as mulch under retained trees. This will reduce soil moisture loss, protect against compaction, and moderate soil temperatures.
- 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.

The following sections of *ANSI A300 (Part 8)-2013 Root Management* should be used with regards to the level of acceptable root loss and/or cutting that may be necessary for each individual tree:

86.2 Root pruning and root cutting:

- 86.2.1 When mitigating or avoiding infrastructure damage, only roots causing or likely to cause damage should be pruned.
- 86.2.2 When root removal is unavoidable, selective pruning shall be the preferred method.

86.3 Root pruning (selective):

- 86.3.1 Roots should be exposed using minimally damaging excavation method prior to pruning.
- 86.3.2 A pruning cut that removes a root at its point of origin should not cut into the trunk or parent root.
- 86.3.3 The pruning cut should be the smallest diameter that meets the objective.
- 86.3.4 The final cut should result in a flat surface with adjacent bark firmly attached.

86.4 Root cutting (non-selective):

- 86.4.1 When non-selective root cutting is necessary, roots shall be cut as far from the trunk as practical.
- 86.4.2 Minimum distance from the trunk for root cutting should be adjusted according to trunk diameter, species tolerance to root loss, tree age, health, and site condition (see ANSI A300 Part 5, Management).
- 86.4.3 Root cutting distances from the trunk shall be adjusted for disease management, root location, tree species and condition, and site and soil conditions.
- 86.4.4 Roots should be cut with equipment that minimizes cracking the wood and tearing the bark.



Table 3: Determining the Tree ProtectionZone (TPZ) radius using trunk diameter

Species Tolerance to Construction Damage	Relative Tree Age	Multiplication Factor (distance from trunk per inch trunk diameter)
High	Young	6
	(<20% life expectancy)	
	Mature	8
	(20-80% life expectancy)	
	Overmature	12
	(>80% life expectancy)	
Medium-Euc. spp.	Young	8
	Mature	12
	Overmature	15
Low-trees in poor or	Young	12
declining health, or poor structure/form	Mature	15
	Overmature	18

(for healthy, structurally sound trees)



T //		TT 1/1	Ct. t	Б		Minimum	Recommended TPZ based
1 ree #	DBH*	Gaad	Structure	Form	Age Class	1PZ** 45	on tree health & condition
621	24,12	Door	Poor	Pair	Matura	43 0	43
622	0	Poor	Poor	Poor	Mature	0	10
624	11	Foor	Foor	Foor	Mature	11	14
626	15	Door	Paar	Door	Mature	15	13
620	13	Deem	Poor	Deer	Mature	13	19
620	12	Poor	Poor	Poor	Mature	12	13
621	10	Poor	Poor	Poor	Mature	10	14
(22	10	Foor	Poor	Poor	Mature	10	13
632	9	Fair	Poor	Poor	Mature	9	9
633	15	Good	Poor	Poor	Mature	15	19
634	0	Poor	Poor	Poor	Young	6	8
033	8	Poor	Poor	Poor	Mature	8	10
636	12	Fair	Poor	Fair	Mature	12	15
637	13	Poor	Poor	Poor	Mature	13	16
639	14	Fair	Poor	Fair	Mature	14	18
641	4,9	Fair	Poor	Poor	Mature	13	16
642	11	Fair	Fair	Fair	Mature	11	11
649	11	Good	Fair	Fair	Mature	11	11
650	6	Poor	Poor	Poor	Young	6	8
651	6	Fair	Fair	Fair	Young	6	6
652	8	Fair	Poor	Poor	Mature	8	10
653	14	Good	Fair	Fair	Mature	14	14
654	15	Good	Poor	Poor	Mature	15	19
655	7	Poor	Poor	Poor	Young	7	9
656	10	Fair	Poor	Poor	Mature	10	13
657	12	Fair	Poor	Poor	Mature	12	15
660	13	Good	Fair	Fair	Mature	13	13
661	12	Fair	Fair	Fair	Mature	12	12
663	10	Good	Fair	Fair	Mature	10	13
665	11	Fair	Fair	Fair	Mature	11	11
666	16	Good	Poor	Poor	Mature	16	20
667	15	Good	Fair	Fair	Mature	15	15
668	14	Good	Fair	Fair	Mature	14	14
670	12	Fair	Fair	Fair	Mature	12	12
673	11	Fair	Fair	Fair	Mature	11	11
674	17	Fair	Poor	Poor	Mature	17	21
677	11	Fair	Fair	Fair	Mature	11	11
678	11	Fair	Fair	Fair	Mature	11	11
679	13	Fair	Fair	Fair	Mature	13	13
680	13	Fair	Poor	Poor	Mature	13	16
681	5	Good	Poor	Poor	Young	5	3
682	7	Fair	Fair	Fair	Young	7	7
683	6	Fair	Poor	Poor	Young	6	8
684	13	Fair	Fair	Fair	Mature	13	13
685	9	Fair	Fair	Fair	Mature	9	9

Table 4: Minimum and Recommended TPZ:

*DBH: Diameter Breast Height, measured in inches.

**Measured in feet.



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BIBLIOGRAPHY

Costello, Laurence R., and K.S. Jones. *Reducing Infrastructure Damage By Tree Roots: A Compendium of Strategies*. Illinois: International Society of Arboriculture, 2003. Print.

Fite, Kelby and Thomas E. Smiley. *Best Management Practices: Managing Trees During Construction (Second Edition).* Illinois: International Society of Arboriculture, 2016. Print.

Harris, Richard W., James R. Clark, and Nelda P. Matheny. *Arboriculture: Integrated Management of Landscape Tree, Shrubs, and Vines. Fourth Edition.* New Jersey: Prentice-Hall, 2004. Print

Lilly, Sharon J., Edward F. Gilman, and E. Thomas Smiley. *Best Management Practices: Tree Pruning (Third Edition)*. Illinois: International Society of Arboriculture, 2019. Print

Matheny, Nelda P., and James R. Clark. *Trees and Development, A Technical Guide to Preservation of Trees During Land Development*. Illinois: International Society of Arboriculture, 1998. Print.



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. Standard of Care has been met with regards to this project within reasonable and normal conditions.
- 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 unless otherwise stated. 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's recommendations; however, you may choose to accept or disregard the recommendations and/or seek additional advice.
- 8. Arborists cannot detect every condition that could 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.
- 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.
- 11. Unless otherwise stated, trees were examined using the tree risk assessment criteria detailed by the International Society of Arboriculture's publications *Best Management Practices Tree Risk Assessment* and the *Tree Risk Assessment Manual* and *A Photographic Guide to the Evaluation of Hazard Trees (Matheny & Clark)*.



Certificate of Performance

Premises: OC Sanitation Plant 2, Hungtington Beach, CA.

I, Rebecca Mejia, certify that to the best of my knowledge and belief:

- 1. To the best of my knowledge, the statements of fact contained in this report are true and correct.
- 2. I have personally inspected the tree(s) and property referenced in this report and have stated my findings accurately.
- 3. I have no current or prospective interest in the tree(s) or the property that is/are the subject of this report, and I have no personal interest or bias with respect to the parties involved.
- 4. The analysis, opinions, and conclusions were developed, and this report has been prepared according to commonly accepted arboricultural practices and standards.
- 5. No one provided significant professional assistance to me, except where may be noted within the report.
- 6. My compensation is not contingent upon the reporting of conclusions that favor the cause of my client or any other party nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am a member in good standing with the International Society of Arboriculture, an ISA Certified Arborist, and an ISA Qualified Tree Risk Assessor. I hold a Bachelor of Science degree in Forestry and Natural Resources Management, with a minor in Urban Forestry. I have been a Certified Arborist since 1996 and in the practice of arboriculture for over 26 years.

Signed:

Rebecca Mejia

Rebecca Mejia ISA Certified Arborist # WE-2355A ISA Qualified Tree Risk Assessor Consulting Arborist, West Coast Arborists, Inc.

Date: October 5, 2022