Tree Assessment and Forest Management Plan for the Cypress Cove II Landscape Maintenance District

March 2025

Prepared for

The City of Marina
and the
Residents of
Cypress Cove II Landscape Maintenance District

Prepared by

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1. INTRODUCTION

Denise Duffy & Associates, Inc. (DD&A) is contracted by the City of Marina (City) and the residents of the Cypress Cove II Landscape Maintenance District (District) to provide arboricultural consulting services for the trees within the District, located in the City of Marina, California (**Figure 1**).

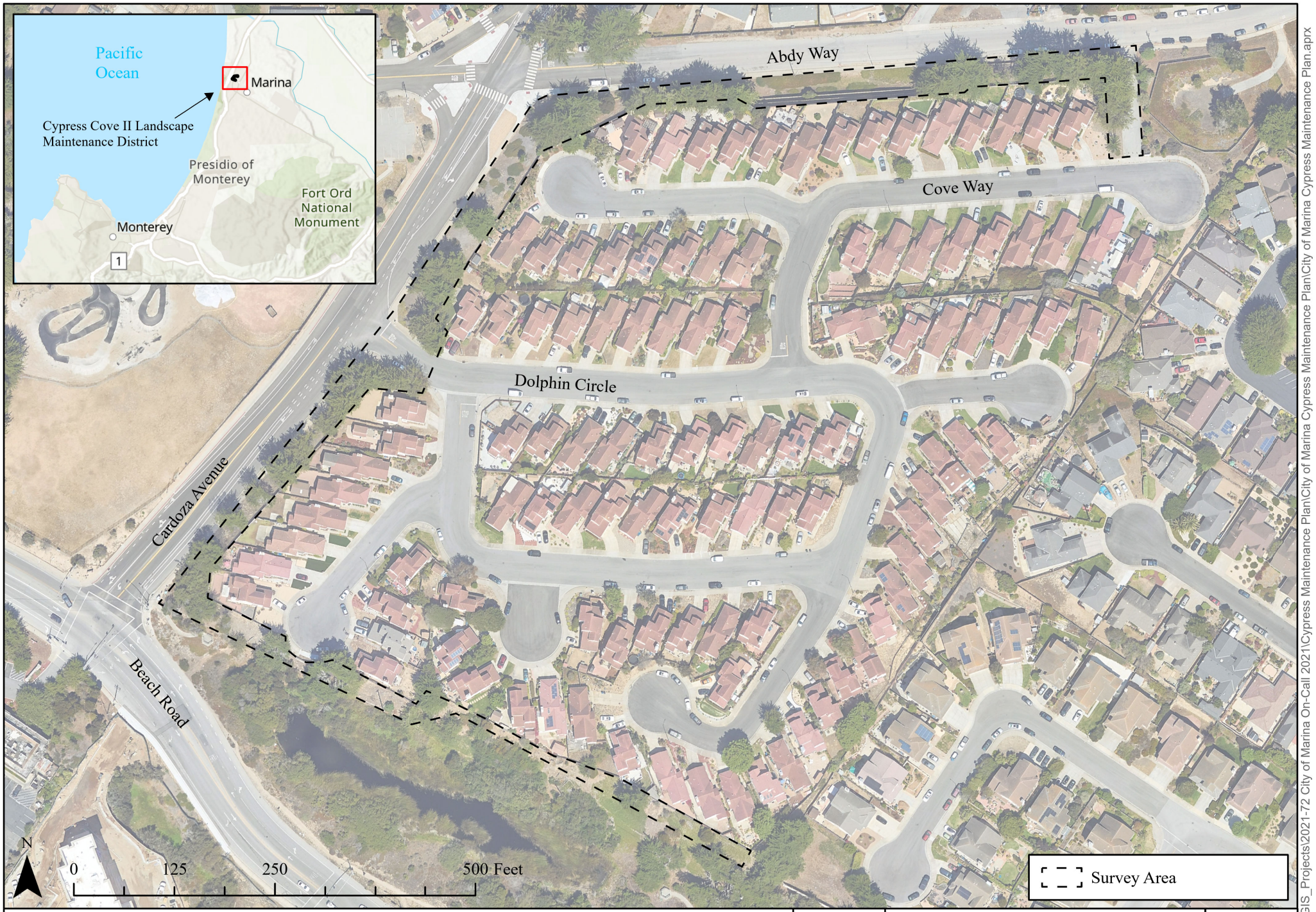
Trees within the project site are regulated by Marina Municipal Code (MMC or City Code) Chapter 17.62 (Tree Removal, Preservation, and Protection). Removal of any living tree, as defined by the City, requires a tree removal permit. DD&A conducted a tree survey within the project site to determine trees which are recommended for maintenance or removal. The survey included a tree inventory and brief assessment of each tree. This Tree Assessment and Forest Management Plan (FMP) documents the results of the tree survey and provides recommended maintenance options and measures to avoid, minimize, or mitigate potential adverse impacts of tree removal.

1.1 Project Description

In 1987, the District was formed to fund the maintenance of all exterior landscaping elements along Abdy Way, Cardoza Avenue, and Beach Road, as well as the landscaping surrounding the percolation lot. Any areas of groundcover, shrubs, trees, irrigation pipelines, controllers, valves, sprinklers, masonry retaining walls, and associated electrical services are considered landscaping elements and are maintained and serviced by this assessment District (City, 2025).

The District is named after the 70+ Monterey cypress (*Hesperocyparis macrocarpa*) surrounding the Subdivision that were present at the time of District creation (City, 2025). Monterey cypress is an evergreen tree in the Cupressaceae family, found in closed-cone coniferous forest at elevations of 10-30 meters. This species' native range occurs only in California at Cypress Point in Pebble Beach and Point Lobos State Natural Reserve. The genetic origin of the individuals within the District is not known, and they are very likely from planted stock or volunteers from planted nursery stock (pacificchorticulture.org, 2025). Due to the size and age of the trees, the city conducts an annual tree maintenance program for the health and safety of the trees and the District.

Each year, the District is assessed a special tax through the County to fund the Assessment District's landscape maintenance. The processes to set the assessment amount and levy the tax are through Marina City Council action. A public hearing (usually between April and May) is held for the residents of the District to voice their opinions on District maintenance or improvements they would like to see. All residents are notified by mail of the meeting time and place (City, 2025).



City of Marina Cypress Cove II Landscape Maintenance District Location Map

Date
3/6/2025

Scale
1 in = 95 ft

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2. METHODS

2.1 Assignment

DD&A was contracted by the City to prepare a tree assessment and forest management plan (maintenance plan) for the City and District to agree on (provided Options below in **Section 4**) to manage the remaining 64 Monterey cypress trees surrounding the District. DD&A was assigned to conduct a tree survey, which included a brief assessment of each individual tree to identify species, tree location, size, health and condition, management considerations, and potential risks (please note a formal risk assessment was not conducted for each individual tree).

2.2 Limitations

It is not the intent of this report to provide a monetary valuation of the trees or provide a risk assessment for any tree on this parcel, as any tree can fail at any time. The inspection of these trees consisted solely of a visual inspection from the ground due to budget limitations. While more thorough techniques are available for inspection and evaluation, they were neither requested nor considered necessary or appropriate at this time. No clinical diagnosis was performed on soils on-site, or on any pest or pathogen that may or may not be present within the site. Soil types within the site were evaluated using the U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS) 2025 Web Soil Survey (NRCS, 2025). In addition to an inspection of the property, DD&A relied on information provided by the City and the District (e.g., survey boundaries, property boundaries, project description) to prepare this report, and must reasonably rely on the accuracy of the information provided.

Trees can be managed but not controlled. To live near trees, regardless of their condition, is to accept some degree of risk. The only way to eliminate all risks associated with trees is to eliminate all trees. DD&A shall not be responsible for another's means, methods, techniques, schedules, or procedures, or for contractor safety or any other related programs, or for another's failure to complete work in accordance with approved plans and specifications.

2.3 Regulatory Setting

2.3.1 City of Marina Municipal Code

MCC Section 17.62.030 requires a tree removal permit to remove, damage, or relocate, or cause to be removed, damaged, or relocated any tree on any property within City limits, unless exempted by MMC Sections 17.62.040 or 17.62.050. MMC Section 17.62.030 also prohibits construction activities within the dripline of any tree, unless these activities are conducted in compliance with tree protection guidelines adopted by resolution of the planning commission.

MMC Section 17.62.060 requires replacement trees and/or payment based upon the replacement of the healthy trees to be removed on a minimum two-for-one (2:1) basis or multiplied by three for each tree removed in violation of City Code.

MMC defines “tree” as any living woody perennial plant having a single stem of six (6) inches or more diameter at breast height (DBH; measured at 4.5 feet above ground) or a multi-stemmed plant having an aggregate diameter of 10 inches or more measured at DBH, and any living woody perennial plant which was planted in accordance with requirements of an approved compensation plan or was planted as part of a landscaping plan approved by the City. MMC defines “Dripline” as the greater of the outermost edge of the tree’s canopy, or 15 times DBH measured from the center point of the tree. Saplings which do not meet MMC’s definition of a tree (i.e., are less than six [6] inches DBH) are not protected by City Code.

2.3.2 California Public Resource Code

California Public Resource Code Chapter 3, Section 4291, requires compliance with certain fuel reduction and vegetation management objectives within 100 feet of a dwelling.

2.3.3 Nesting Birds

Raptors (e.g., eagles, hawks, and owls) and their nests are protected in California under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy the nest or eggs of any such bird except otherwise provided by this code or any regulation adopted pursuant thereto." In addition, fully protected species under the Fish and Game Code Section 3511 (birds), Section 4700 (mammals), Section 5515 (fish), and Section 5050 (reptiles and amphibians) are also considered special-status animal species. Species with no formal special-status designation but thought by experts to be rare or in serious decline may also be considered special-status animal species in some cases, depending on project-specific analysis and relevant, localized conservation needs or precedence.

2.4 Survey Methods

DD&A International Society of Arboriculture (ISA) Certified Arborist Patric Krabacher conducted an tree survey within the project site on January 21, 22, and 23, 2025. The survey area encompasses the northern, western and southern borders of the District, which includes all surrounding large trees (**Figure 1**). Trees were inventoried in accordance with the following protocol, which was designed to meet the requirements of MMC Chapter 17.62:

- All trees were mapped with Global Positioning System (GPS) and assigned an identification number. Trees that may be considered for removal (see **Section 4** below) were tagged with a corresponding physical marker.
- Tree diameter was recorded at breast height (4.5 feet above ground) or (for multi-stemmed trees) at the most representable location.
- Multi-stemmed trees were recorded as one tree if the root crown (the point where the trunk meets natural grade) was contiguous. Multi-stemmed tree DBH was calculated by taking the square root of the squared sum of all stems measured (√[Stem 1 DHB2+ Stem 2 DBH2+ Stem 3 DBH2...]). This equation returns the diameter at the base of the tree (Chojnacky, 1999).
- Species, size, and health class were recorded for each tree. Tree health was recorded based on the following definitions:
  - *Good.* Trees with good health and structural stability that have the potential for longevity at the site. Tree is healthy and vigorous, as indicated by foliage color and density, and has no apparent signs of insect, disease, structural defects, or mechanical injury. Tree has good form and structure.
  - *Fair.* Trees in somewhat declining health and/or exhibits structural defects that cannot be abated with treatment. Trees will require more intense management and will have a shorter lifespan than those in the 'Good' category. Tree is in average condition and vigor for the area, but may show minor insect, disease, or physiological problems. Trees in fair condition may be improved with correctional pruning.
  - *Poor.* Trees in poor health or with significant structural defects that are not recommended to be mitigated for. Tree is in a general state of decline. Tree may show severe structural or mechanical defects which may lead to failure, and may have insect or disease damage, but is not dead.

Tree health was evaluated by visually inspecting each tree from its root crown to its foliar canopy for signs of decay, disease, or insect infestations. Differing with MMC's definition of a "tree," dead trees were inventoried for this survey.

Trees were also given a maintenance rating to determine the priority at which maintenance should be provided. The maintenance ratings are as follows:

1. Trees that are in violation of Public Resource Code, have significant dead wood, hanging limbs, and are located within 10 feet of a fence line or structure.
2. Trees that have significant deadwood, hanging limbs, but are located beyond 10 feet of a fence line or structure; however, if they were to fail would still damage persons or property.
3. Trees that do not have any targets of concern (i.e. fence lines or structures).
4. Trees are well outside the zone of impacting a fence line or structure but do fall within the maintenance zone.
5. No maintenance necessary

In addition to MMC dripline calculation, Critical Root Zones (CRZ) were also calculated per American National Standard Institute (ANSI) A300, Part 5 (ANSI, 2023). CRZ can be calculated as a 1.5-feet of radius for every one (1) inch of DBH. The CRZ is defined by ANSI Part 5 (ANSI, 2023) and ISA Standards (ISA Standards, 2025) as the area that includes the outermost extent of the root system of a tree. It is essential for protecting the tree's roots from compaction, disruption, or damage during construction or other activities.

Trimble® Geo 7 Series GPS units were utilized to collect data, which were then digitized using Trimble® GPS Pathfinder and ESRI® ArcGIS 10.4. GPS data were collected using geographic coordinate system Universal Transverse Mercator (UTM) Zone 10 North and the World Geodetic System 1984 (WGS84) datum.

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3. RESULTS/OBSERVATIONS

3.1 Site Conditions

The District is located in an urban-forested residential area in the northwestern portion of the City which also falls within the County of Monterey's (County's) Wildland Urban Interface (WUI) (County, 2025). The tree canopy within the District is dominated by Monterey cypress in fair to poor health, with a manicured understory that appeared to have been recently mowed. The understory is managed by a maintenance regime which includes regular mowing and pruning of the understory by a landscape contractor. All Monterey cypress trees have been unmaintained, excluding some minor hedging to keep them off adjacent fence lines, and topping of trees beneath powerlines.

3.2 Trees Inventoried

DD&A assessed and inventoried 67 trees within the survey area (see **Figure 2** and **Appendix A**). Trees observed and documented include 64 Monterey cypress, two (2) Australian blackwood[1] (*Acacia melanoxylon*), and one (1) Chinese elm (*Ulmus parvifolia*).

3.3 Tree Health Ratings

The tree assessment identified that 67% or 55 trees surveyed were in fair health, 13% or nine (9) trees were in poor health, 2% or two (2) trees were dead, and 1% or one (1) tree was in good health (**Table 1** and **Appendix A**). 31 Trees were found to have a maintenance rating of one (1) and should be a priority with the options below (**Table 1**, **Figure 3**, and **Appendix A**). Trees in fair condition are in average vigor for the area but have a lot of dead wood that will require removal, have been improperly cut or topped, have hanging limbs that require removal, are leaning, have exposed heartwood or missing bark, or are showing signs of either abiotic or biotic stress.

Table 1. Summary of Tree Assessment Results

Species	Total # of Trees	Maintenance Rating					Health Rating			
		1	*2*	*3*	*4*	*5*	*Good*	*Fair*	*Poor*	*Dead*
Monterey cypress	64	31	10	4	19	0		55	8	1
Australian blackwood	2	1			1	0			1	1
Chinese elm	1				1	0	1			

3.4 Abiotic Stressors

Abiotic stressors are non-living stressors that can negatively impact trees (Dunster, 1996). There is significant evidence that poor pruning techniques were used to keep trees off of structures and away from fence lines (**Appendix A**), including pruning between branch nodes, heading cuts, and topping of trees. Hanging limbs, missing bark, crown dieback, and wind exposure were also observed results of abiotic stressors.

3.5 Biotic Stressors

Biotic stressors are living factors that can negatively impact trees (Dunster, 1996). Minor evidence of a boring beetle was noted; however, no clinical diagnosis was performed. Typical boring beetles for this species include the cypress tip moth (*Argyresthia cupressella*) and the cypress bark beetle (*Phloeosinus* sp.). The main disease of concern is cypress canker, that can be spread with movement from beetle or moth

[1] This species is recommended for removal whenever found, as it is nonnative and has shown to be locally invasive.

activity; however further investigation and clinical diagnosis would be recommended to determine presence of these species. No symptoms of sudden oak death were observed.

3.6 Soils

The District is located on soil classified by the NRCS as "Baywood sand" over 80 inches deep. Drainage is defined as "somewhat excessively drained", and permeability ranges from 5.95 to 19.98 in/hr. The available water capacity is low (about 4.8 inches) (NRCS, 2025). Roots can penetrate to a depth of over 60 inches. Monterey cypress trees prefer well-drained soil with pH levels ranging from acidic to slightly alkaline (NC State, 2025). To improve soil composition, it is recommended to incorporate organic materials to enhance soil fertility and structure. This can help improve declining or stressed Monterey cypress trees within the District.

City of Marina Cypress Cove II Landscape Maintenance District
Tree Survey Results

Date
3/14/2025

Scale
1 in = 95 ft

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Figure
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Trees were also given a maintenance rating to determine the priority at which maintenance should be provided. The maintenance ratings are as follows:

1. Trees that are in violation of Public Resource Code, have significant dead wood, hanging limbs, and are located within 10 feet of a fence line or structure.

2. Trees that have significant deadwood, hanging limbs, but are located beyond 10 feet of a fence line or structure; however, if they were to fail would still damage persons or property.

City of Marina Cypress Cove II Landscape Maintenance District
Maintenance Ratings for Priority Trees

Date
3/14/2025

Scale
1 in = 95 ft

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4. MANAGEMENT AND MONITORING RECOMMENDATIONS

4.1 Management Options

The following provides two (2) options for management of the trees within the District. Regular maintenance and management, in combination with monitoring, will improve the health of all trees within this District and reduce the likelihood of failure. **Section 4.2** provides maintenance recommendations that should be implemented regardless of which option is chosen.

4.1.1 Option 1. Maintenance and Monitoring Program

Option 1 involves implementing maintenance of the trees based on the results of the tree assessment provided herein, followed by annual monitoring. Regular maintenance, designed to promote plant health and vigor, will ensure the longevity of the existing trees. Additional monitoring and maintenance recommendations can be found below in **Section 4.2**, and should be implemented in conjunction with this Option. The top maintenance issues found throughout all the trees were an overabundance of dead wood and poor pruning practices (**Appendix A**). Removal of deadwood and correcting the poorly pruned limbs would lower the risk of these trees to failing on a person or property and increase most of their health conditions to a "good" health rating. Maintenance of trees should be implemented in the order based on the maintenance rating (see **Section 2**) as follows:

1. Dead trees are recommended for immediate removal.
2. Trees are recommended for immediate pruning. These trees are in violation of Public Resource Code, have significant dead wood, hanging limbs, and are located within 10 feet of a fence line or structure.
3. Trees are recommended for pruning after the "1 rated" trees have been addressed. These trees also have significant deadwood, hanging limbs, but are located beyond 10 feet of a fence line or structure.
4. Trees are recommended for pruning when time permits, as they do not have any targets of concern (i.e. fence lines or structures).
5. Trees are well outside the zone of impacting a fence line or structure but do fall within the maintenance zone.

4.1.2 Option 2. Removal of Maintenance Rating 1 Trees

Option 2 includes removal of trees identified during the tree assessment with a maintenance rating of 1 (**Table 1** and **Appendix A**). This option is recommended as a last resort as the existing trees create a windbreak for the residents of the District. Removal is typically only recommended when a tree:

1. Is dead, dying, or considered irreparably hazardous;
2. Is causing an obstruction or is crowding and causing harm to other trees and the situation is impossible to correct through pruning;
3. Is to be replaced by a more suitable specimen, and;
4. Should be removed to allow for construction.

Removal of trees is only recommended if trees with a maintenance rating of 1 can't be properly maintained due to funding or timing. If removal is chosen, it is recommended that required replanting's be off site at a City approved location. See **Section 4.2.2** for additional mitigation recommendations and requirements.

4.2 Monitoring and Maintenance Recommendations

4.2.1 Monitoring Recommendations

Annual monitoring of each tree and preparation of a monitoring report that outlines which trees require maintenance is recommended regardless of the management option chosen. Regular inspections of the trees at least once a year can prevent or reduce the severity of future disease, insect, and environmental problems, and can help correct these problems before they become damaging to persons or property.

During the recommended annual tree inspection, characteristics of tree vigor should be examined as well as document and record other data including:

1. Health rating can be subjective but should always be considered to track the health of a tree.
2. New leaves or buds, leaf size, twig growth, and absence of crown dieback (gradual death of the upper part of the tree).
3. A reduction in the extension of shoots (new growing parts), such as buds or new leaves, is a fairly reliable cue that the tree's health has recently changed. Growth of the shoots over the past three (3) years may be compared to determine whether there is a reduction in the tree's typical growth pattern.
4. Signs of poor tree health or trunk decay, crown dieback, or both. These symptoms often indicate problems that began several years earlier.
5. Loose bark or deformed growths, such as trunk conks (mushrooms), are common signs of stem or root decay.
6. Structural defects including: large cracks, hanging limbs, uprooting or root plate lifting, included bark, codominance in stems, or abnormal leans.
7. Size including DBH, height, and calculate CRZ and Dripline.

Any abnormalities found during these inspections, including insect activity and spotted, deformed, discolored, or dead leaves and twigs, should be noted and observed closely. If abnormality is documented it is also recommended to further investigate with Level 1-3 (whichever Arborist deems appropriate) Tree Risk Assessment.

4.2.2 Maintenance Recommendations

Mulching

Mulch, or decomposed organic material, placed over the root zone of a tree reduces environmental stress by providing a root environment that is cooler and contains more moisture than the surrounding soil. Mulch can also prevent mechanical damage by keeping machines such as lawn mowers and string trimmers away from the tree's base. Furthermore, mulch reduces competition from surrounding weeds and turf. To be most effective, mulch should be placed 2 to 4 inches deep and cover the entire root system, which may be as far as 2 or 3 times the diameter of the branch spread of the tree (UMass, 2025). It is recommended that as much of the area under the drip line of the tree be mulched as possible (**Figure 2**). When placing mulch, care should be taken not to cover the root flare or base of the tree. This mulch-free area, 1 to 2 inches wide at the base, is sufficient to avoid moist bark conditions and prevent trunk decay. An organic mulch layer 2 to 4 inches deep of loosely packed shredded leaves, pine straw, peat moss, or composted wood chips is adequate. Plastic should not be used, as it interferes with the exchange of gases between soil and air, which inhibits root growth. Thicker mulch layers, 5 to 6 inches deep or greater, may also inhibit gas exchange.

Fertilization

Trees require certain nutrients (essential elements) to function and grow. These urban landscape trees may be growing in soils that do not contain sufficient available nutrients for satisfactory growth and development. In certain situations, it may be necessary to fertilize to improve plant vigor. Fertilizing a tree can improve growth; however, if fertilizer is not applied correctly, it may not benefit the tree at all and may even adversely affect the tree (Morton, 2025). When considering supplemental fertilizer, it is important to consider nutrient deficiencies and how and when to amend the deficiencies. Soil conditions, especially pH and organic matter content, vary greatly, making the proper selection and use of fertilizer a somewhat complex process. A clinical test of the soil is recommended for soil nutrients if fertilizer is recommended. A soil testing laboratory can give advice on application rates, timing, and the best blend of fertilizer for each tree and other landscape plants on site. Always follow manufacturer recommendations for use and application.

Pruning

Pruning of trees is recommended and may be necessary for some trees on site, especially those with a maintenance rating of 1 and/or those along or near fence lines, roads or driveways. Pruning is to be minimal but performed only when necessary in accordance with ANSI A300 pruning Standards (ANSI, 2023). Pruning should prioritize deadwood removal and trees that are exhibiting some minor structural defect or minor disease that must be compensated for. Should the health and vigor of any tree decline it should be treated as appropriately recommended by a certified arborist or qualified forester. Work should be timed to avoid the breeding and nesting season for raptors and other protected avian species. If work must occur during the avian breeding and nesting season (approximately February 1 through September 15), surveys for nesting birds shall be conducted no more than 15 days prior to maintenance activities.

The following are offered as guidelines when pruning

- In general, trees will be assessed and pruned first for safety, next for health, and finally for aesthetics. No more than 25% of the tree overall crown will be pruned in one season.
- Type of pruning is determined by the size of branches to be removed. General guidelines for branch removal are:
    1. Fine Detail pruning – limbs under 2 inch diameter are removed.
    2. Medium Detail Pruning – limbs between 2 and 4 inch diameter.
    3. Structural Enhancement – limbs greater than 4 inch diameter.
    4. Broken and cracked limbs – removed in high traffic areas of concern.
- Crown thinning is the cleaning out of or removal of dead diseased, weakly attached, or low vigor branches from a tree crown and consist of the following steps:
    - All trees will be pre-assessed on how the tree will be pruned from the top down.
    - Tree trimmers will favor branches with strong, U- shaped angles of attachment and where possible remove branches with weak, V-shaped angles of attachment and/or included bark.
    - Lateral branches will be evenly spaced on the main stem of young trees and areas of fine pruning.
    - Branches that rub or cross another branch will be removed where possible.

- Lateral branches will be no more than one-half to three-quarters of the diameter of the stem to discourage the development of co-dominant stems where feasible.

Tree Removal

In accordance with City Code and California Fish and Game Code, the following measures are recommended to avoid or minimize impacts resulting from tree removal, if implemented:

1. Work should be timed to avoid the breeding and nesting season for raptors and other protected avian species. If work must occur during the avian breeding and nesting season (approximately February 1 through September 15), surveys for nesting birds shall be conducted no more than 15 days prior to project activities in all areas of the project footprint that may provide suitable nesting habitat. If nesting birds are identified during surveys, an appropriate buffer shall be imposed within which no work or disturbance will take place (generally 300 feet in all directions). A qualified biologist shall be on-site during work re-initiation in the vicinity of the nest offset to ensure that the buffer is adequate and that the nest is not stressed and/or abandoned. No work shall proceed in the vicinity of an active nest until such time as all young are fledged, or until after September 16, when young are assumed fledged.
2. MMC requires a 2:1 replacement ratio for removal of healthy trees. A Replanting Plan shall be prepared to satisfy the requirements of a removal permit per MMC outlining the locations of all replacement trees. Correct species should be chosen for the planting location, and all tree species should be approved by City or be chosen from the preapproved City planting list. DD&A recommends the replacement plantings be fifteen-gallon trees in locations with the greatest openings to minimize competition and maximum sunlight. (If fifteen-gallon sizes are unavailable, smaller sizes may be substituted.) The spacing between trees shall be at least eight (8) feet. Watering for establishment within the first two (2) months shall be at least once (1) per week, then every two (2) weeks during the late spring, summer, and fall for two (2) years. Due to the lack of water within the District, it is recommended replacement plantings be offsite in a City approved location.
3. Following construction and installation of replacement plantings, replacement plantings shall be monitored annually by a qualified arborist for a period of no less than five (5) years. If any noticeable decline in the health of any tree is observed, additional trees shall be planted onsite at a 1:1 ratio in a suitable location as determined by a qualified arborist or forester.

Defensible Space

This District lies within the WUI per Monterey County but has not been given a hazard rating yet (WUI, 2025). The WUI is the area where houses meet or intermingle with undeveloped wildland vegetation (V.C Randeloff, 2005). A WUI is a potential treatment zone in which projects could be conducted to reduce wildland fire threats to people (WUI, 2025, **Figure 4**). This section for maintenance is included in this report because many limbs were observed hanging over chimneys or structures. These trees can be references as they were given a maintenance rating of 1. Defensible space is divided into zones measured from the edge of structures/fences or road edges (**Appendix D**), each with specific guidelines. The zoned approach for defensible space scales the intensity of wildfire fuel reduction based on the proximity to the structure. In each zone, the intensity of vegetation management increases as the distance to the home decreases. The zones outlined in detail in **Appendix D** are recognized in PRC Section 4291.

City of Marina Cypress Cove II Landscape Maintenance District
Monterey County Wildland Urban Interface

Date
3/6/2025

Scale
1 in = 95 ft

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Figure
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APPENDIX A

Tree Table

Tag	Species	Common	Total DBH	Dripline (ft) Per MMC	CRZ (ft)	Maintenance Rating	Health	Comment
927	Hesperocyparis macrocarpa	Monterey Cypress	10	13	8	4	Fair	ST, IB
928	Hesperocyparis macrocarpa	Monterey Cypress	19	24	14	3	Fair	DW
929	Hesperocyparis macrocarpa	Monterey Cypress	24	30	18	3	Fair	DW
930	Hesperocyparis macrocarpa	Monterey Cypress	26	33	20	4	Fair	DW, CD
931	Hesperocyparis macrocarpa	Monterey Cypress	29	36	22	1	Fair	DW, HD
932	Hesperocyparis macrocarpa	Monterey Cypress	34	43	26	1	Fair	DW, HL, HD, ML
933	Hesperocyparis macrocarpa	Monterey Cypress	44	55	33	1	Fair	S-DW, S-HD, HL, PRC, GR, ML
934	Ulmus parvifolia	Chinese Elm	8	10	6	4	Good	DW
935	Hesperocyparis macrocarpa	Monterey Cypress	41	51	31	1	Fair	DW, HD, GR
936	Hesperocyparis macrocarpa	Monterey Cypress	28	35	21	4	Fair	HD
937	Hesperocyparis macrocarpa	Monterey Cypress	33	41	25	1	Fair	HD, ML
938	Hesperocyparis macrocarpa	Monterey Cypress	24	30	18	1	Fair	HD, HL
939	Hesperocyparis macrocarpa	Monterey Cypress	24	30	18	1	Fair	DW, HD
940	Hesperocyparis macrocarpa	Monterey Cypress	28	35	21	1	Fair	DW, HD
941	Hesperocyparis macrocarpa	Monterey Cypress	44	55	33	1	Fair	DW, HD
942	Hesperocyparis macrocarpa	Monterey Cypress	39	49	29	1	Fair	DW, HD
943	Hesperocyparis macrocarpa	Monterey Cypress	6	8	5	4	Fair	ST, LN
944	Hesperocyparis macrocarpa	Monterey Cypress	46	58	35	1	Fair	DW, HD, ML
945	Hesperocyparis macrocarpa	Monterey Cypress	48	60	36	3	Fair	DW, HD
946	Hesperocyparis macrocarpa	Monterey Cypress	18	23	14	2	Fair	DW, HD
947	Acacia melanoxylon	Australian Blackwood	6	8	5	1	Dead	D, Tree recommended for removal
948	Hesperocyparis macrocarpa	Monterey Cypress	49	61	37	4	Fair	HL, HD, IB
949	Hesperocyparis macrocarpa	Monterey Cypress	11	14	8	4	Fair	ML
950	Hesperocyparis macrocarpa	Monterey Cypress	15	19	11	2	Poor	HD, HL, Recommended for removal
951	Hesperocyparis macrocarpa	Monterey Cypress	39	49	29	2	Fair	DW, HD, GR
952	Hesperocyparis macrocarpa	Monterey Cypress	24	30	18	2	Fair	DW, HD, EH
953	Hesperocyparis macrocarpa	Monterey Cypress	32	40	24	4	Poor	HD, CDB
954	Hesperocyparis macrocarpa	Monterey Cypress	12	15	9	4	Fair	CDB, DW, recommended to raise canopy
955	Hesperocyparis macrocarpa	Monterey Cypress	11	14	8	2	Fair	DW, S-SD, EH, ML
956	Hesperocyparis macrocarpa	Monterey Cypress	8	10	6	4	Poor	CDB
957	Hesperocyparis macrocarpa	Monterey Cypress	23	29	17	1	Fair	HD
958	Hesperocyparis macrocarpa	Monterey Cypress	40	50	30	1	Fair	S-DW, S-HD
959	Hesperocyparis macrocarpa	Monterey Cypress	35	44	26	1	Fair	DW, HD
960	Hesperocyparis macrocarpa	Monterey Cypress	6	8	5	1	Poor	DW, HD, SD, LN
961	Hesperocyparis macrocarpa	Monterey Cypress	18	23	14	1	Fair	DW, HD, LN
962	Hesperocyparis macrocarpa	Monterey Cypress	17	21	13	1	Fair	DW, HD, Tree is approx. 2 feet from fence line
963	Hesperocyparis macrocarpa	Monterey Cypress	18	23	14	1	Fair	DW, HD, Tree is approx. 2 feet from fence line
964	Hesperocyparis macrocarpa	Monterey Cypress	33	41	25	1	Fair	DW, HD
965	Hesperocyparis macrocarpa	Monterey Cypress	20	25	15	4	Fair	DW, HD

Tag	Species	Common	Total DBH	Dripline (ft) Per MMC	CRZ (ft)	Maintenance Rating	Health	Comment
966	Hesperocyparis macrocarpa	Monterey Cypress	31	39	23	1	Fair	DW, HD
967	Hesperocyparis macrocarpa	Monterey Cypress	13	16	10	2	Poor	DW, HD, D
968	Hesperocyparis macrocarpa	Monterey Cypress	28	35	21	2	Fair	DW, HD
969	Hesperocyparis macrocarpa	Monterey Cypress	14	18	11	4	Fair	DW
970	Hesperocyparis macrocarpa	Monterey Cypress	38	48	29	1	Fair	DW, HD
971	Hesperocyparis macrocarpa	Monterey Cypress	49	61	37	1	Fair	DW, HD
972	Hesperocyparis macrocarpa	Monterey Cypress	21	26	16	1	Fair	DW, HL, HD
973	Hesperocyparis macrocarpa	Monterey Cypress	24	30	18	2	Fair	DW, HD
974	Hesperocyparis macrocarpa	Monterey Cypress	37	46	28	1	Fair	DW, HD
975	Hesperocyparis macrocarpa	Monterey Cypress	16	20	12	1	Poor	DW, HD
976	Hesperocyparis macrocarpa	Monterey Cypress	15	19	11	2	Fair	DW, HD
977	Hesperocyparis macrocarpa	Monterey Cypress	14	18	11	4	Fair	DW
978	Hesperocyparis macrocarpa	Monterey Cypress	16	20	12	4	Fair	DW
979	Hesperocyparis macrocarpa	Monterey Cypress	20	25	15	1	Fair	DW, HD
980	Hesperocyparis macrocarpa	Monterey Cypress	9	11	7	1	Dead	Recommended for removal
981	Hesperocyparis macrocarpa	Monterey Cypress	14	18	11	4	Poor	LN, SR
982	Hesperocyparis macrocarpa	Monterey Cypress	33	41	25	2	Fair	DW, HD
983	Acacia melanoxylon	Australian Blackwood	11	13	8	3	Poor	D, Tree recommended for removal
984	Hesperocyparis macrocarpa	Monterey Cypress	18	23	14	4	Fair	SL-DW
985	Hesperocyparis macrocarpa	Monterey Cypress	30	38	23	4	Fair	LN, SR
986	Hesperocyparis macrocarpa	Monterey Cypress	6	8	5	2	Fair	DW, HD
987	Hesperocyparis macrocarpa	Monterey Cypress	48	60	36	4	Poor	D, HD
988	Hesperocyparis macrocarpa	Monterey Cypress	6	8	5	1	Fair	DW, HD, PRC
989	Hesperocyparis macrocarpa	Monterey Cypress	20	25	15	1	Fair	DW, HD, PRC
990	Hesperocyparis macrocarpa	Monterey Cypress	26	32	19	4	Fair	HL, DW
991	Hesperocyparis macrocarpa	Monterey Cypress	50	63	38	1	Fair	DW, HD, HL, PRC
992	Hesperocyparis macrocarpa	Monterey Cypress	13	16	10	1	Fair	DW, HD, PRC
993	Hesperocyparis macrocarpa	Monterey Cypress	60	75	45	3	Fair	DW, HD, SR

Suitability for Preservation/ Health

Good - Trees with good health and structural stability that have the potential for longevity at the site.

Moderate -Trees in somewhat declining health and/or exhibit structural defects that cannot be abated with treatment. Trees will require more intense management and will have a shorter lifespan than those in the 'Good' category.

Poor - Trees in poor health or with significant structural defects that are not recommended to be mitigated for. Trees are expected to decline, regardless of treatment.

Maintenance Rating

1	Trees are recommended for immediate trimming. These trees are in violation of Public Resource Code, have significant dead wood, hanging limbs, and are located within 10 feet of a fence line or structure.
2	Trees are recommended for trimming after the "1 rated" trees have been addressed. These trees have significant deadwood, hanging limbs, and are located beyond 10 feet of a fence line or structure.
3	Trees are recommended for trimming , but do not have any targets of concern (i.e. fence lines, or structures). These trees will require trimming when time permits.
4	Trees are well outside the zone of impacting a fence line or structure but do fall within the maintenance zone.

Abbreviations and Definitions

CD	Codominant branches	Forked branches nearly the same size in diameter, arising from a common junction an lacking a normal branch union.
CDB	Dieback in Crown	Condition where branches in the tree crown die from the tips toward the center.
DW	Dead Wood	Dead limbs in canopy of tree that are recommended for removal.
DBH	Diameter at Breast	Measurement of tree diameter in inches. Measured in accordance with MMC
EG	Epicormic Growth	Water sprouting on trunk and main leaders. Typically indicative of tree stress.
EH	Exposed Heartwood	Exposure of the tree's heartwood is typically seen as an open wound that leaves a tree more susceptible to pathogens, disease or infection.
GR	Girdling Roots	Roots are visibly girdling the tree suffocating it from nutrients intake. These roots are recommended for removal.
H	Hazardous	A tree that in it's current condition, presents a hazard.
HD	Headed (Topped)	Poor pruning practice of cutting back branches. Often practiced under utility lines to limit tree height.
HL	Hanging Limbs	Broken hanging limbs that are recommended for removal
IB	Included Bark	Structural defect where bark is included between the branch attachment so the wood can't join. Such defect can have a higher probability of failure.
LN	Leaning Tree	Tree leaning, see notes for severity.
ML	Multiple Leaders	More than one upright primary stem
PRC	Public Resource Code	Tree is in violation of California Public Resources Code (PRC) Chapter 3,Section 4291
PT	Phototropism	Tree exhibits phototropic growth habits. Reduced trunk taper, misshapen trunk and canopy growth are examples of this growth habit.
SD	Structural Defects	Naturally or secondary conditions including cavities, poor branch attachments, cracks, or decayed wood in any part of the tree that may contribute to structural failure.
SE	Severe	Indicates the severity of the following term.
SL	Slight	Indicates the mildness of the following term.
SR	Surface Roots	Roots visible at finished grade.
ST	Stress	Environmental factor inhibiting regular tree growth. Includes drought, salty soils, nitrogen and other nutrient deficiencies in the soil.
WU	Weak Union	Weak union or fork in tree branching structure.

APPENDIX B

Photo Log

Tree 927.

Tree 929.

Tree 930.

Tree 931.

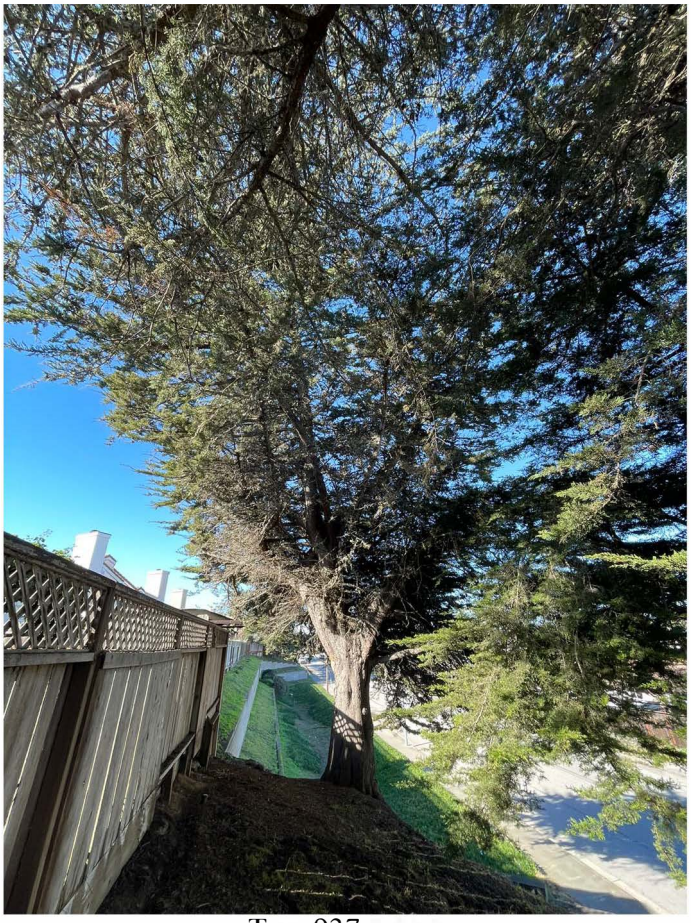
Tree 932.

Tree 933.

Tree 934.

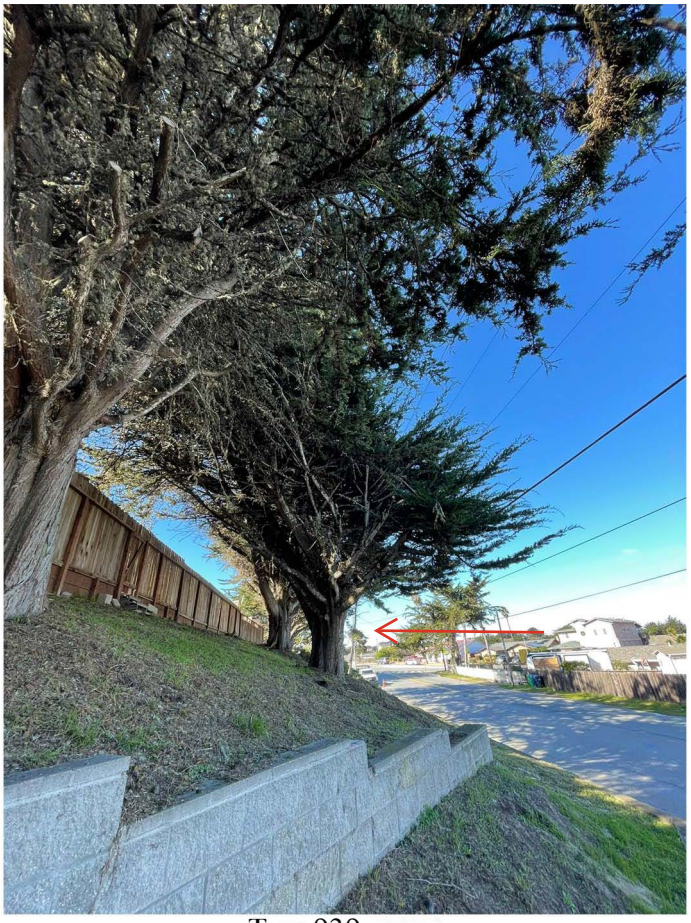
Tree 935.

Tree 936.



Tree 937.

Tree 938.



Tree 939.

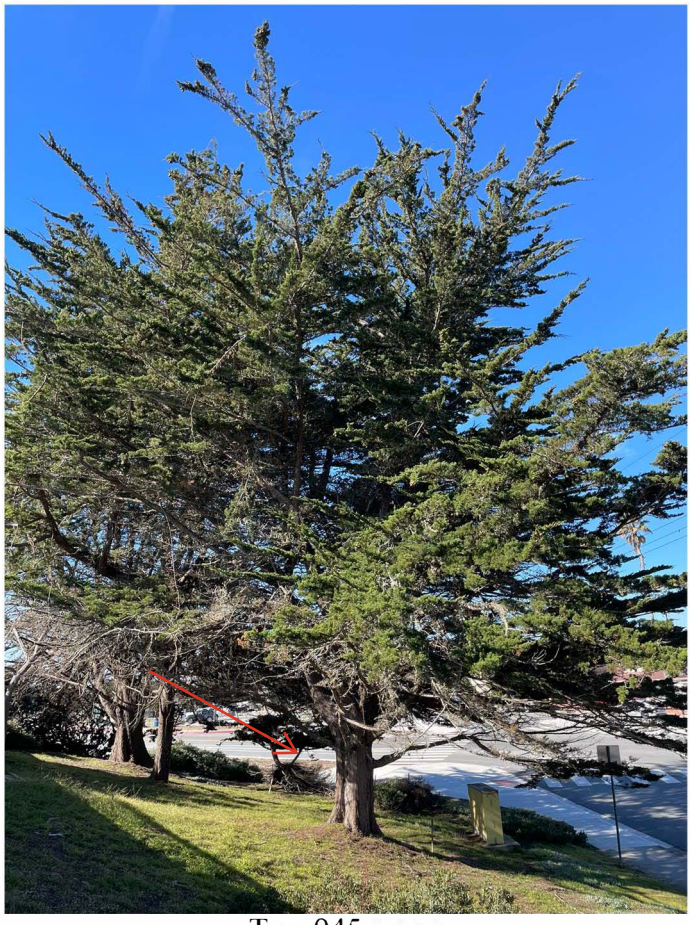
Tree 940.

Tree 941.

Tree 942.

Tree 943.

Tree 944.



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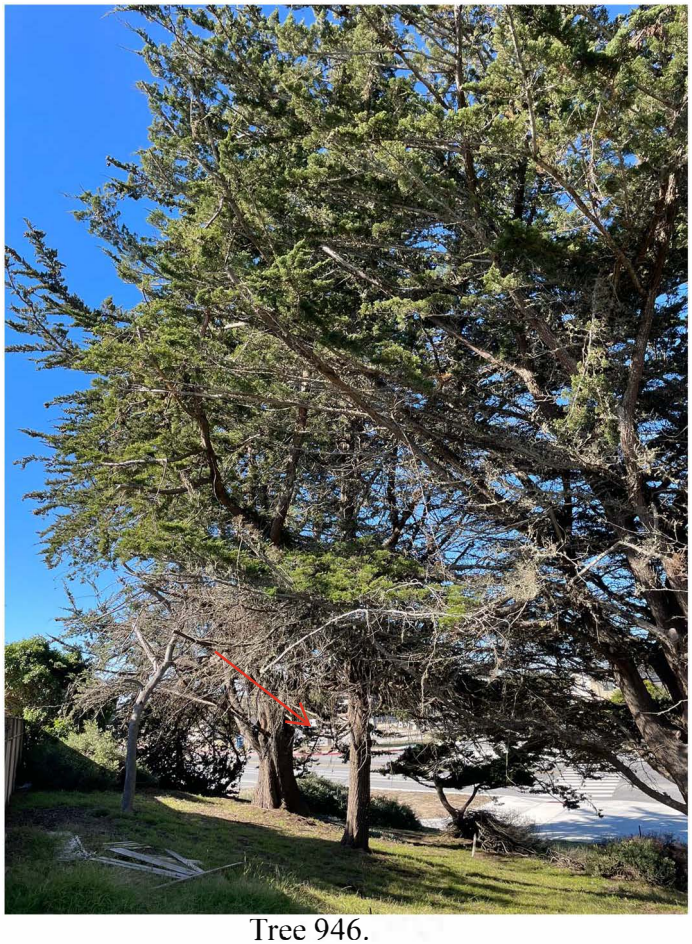
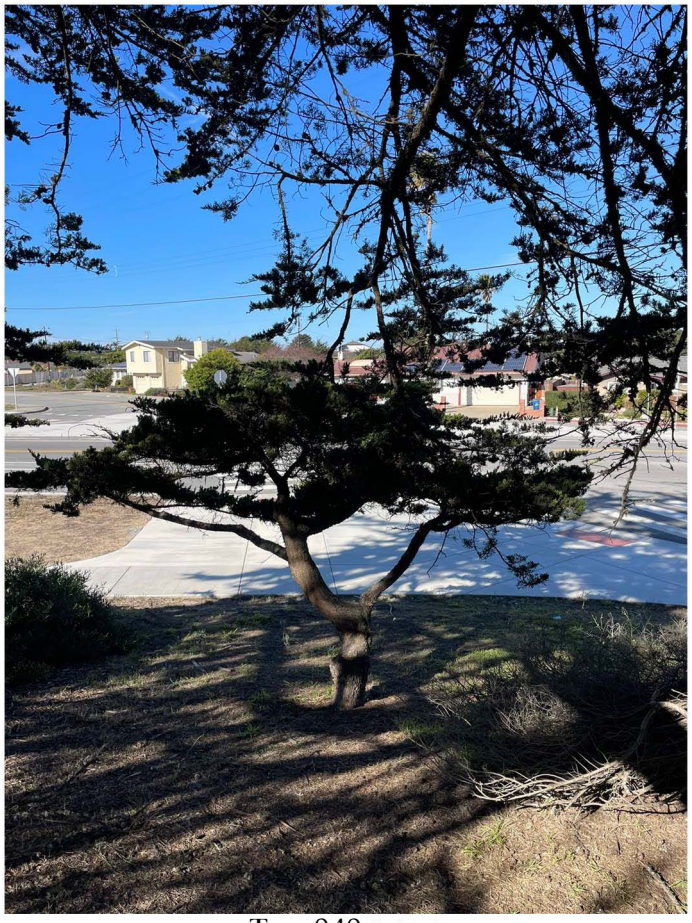


Tree 946.

Tree 947.

Tree 948.



Tree 949.

Tree 950.

Tree 951.

Tree 952.

Tree 953.

Tree 954.

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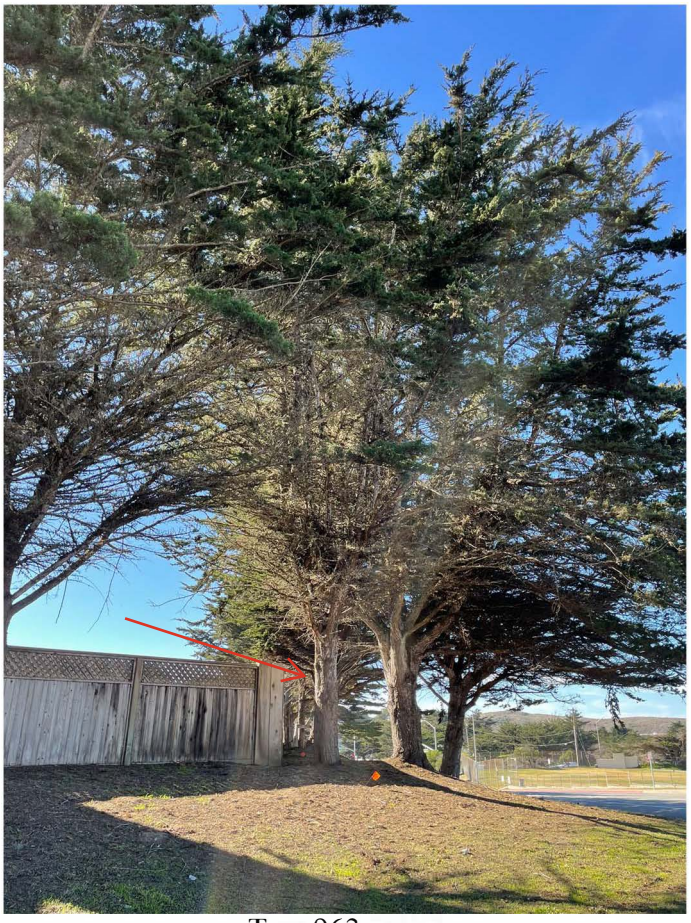
Tree 960.

Tree 961.

Tree 962.



Tree 963.

Tree 964.

Tree 965.

Tree 966.

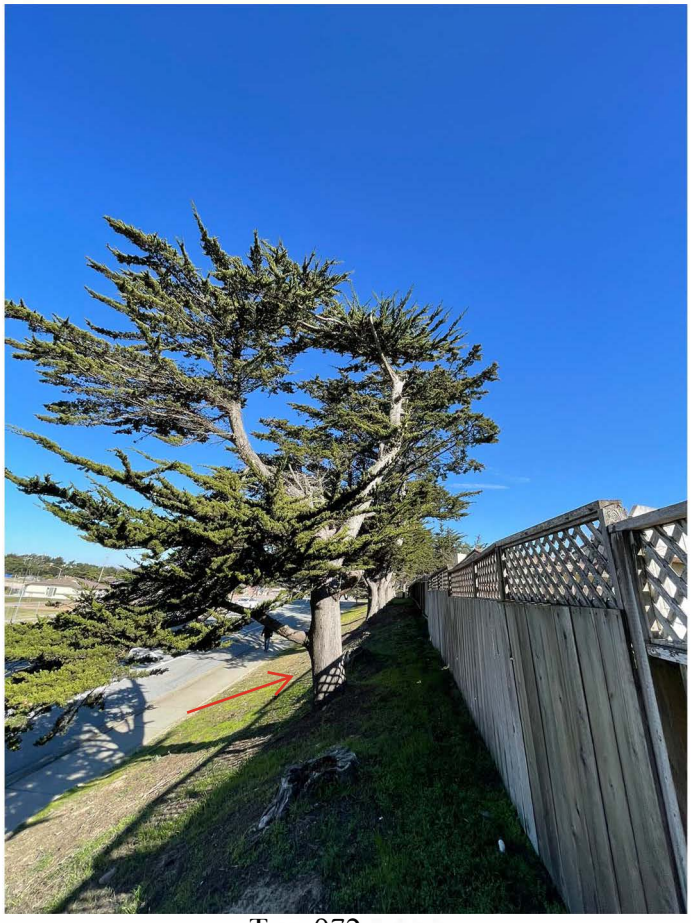
Tree 967.

Tree 968.

Tree 969.

Tree 970.

Tree 971.



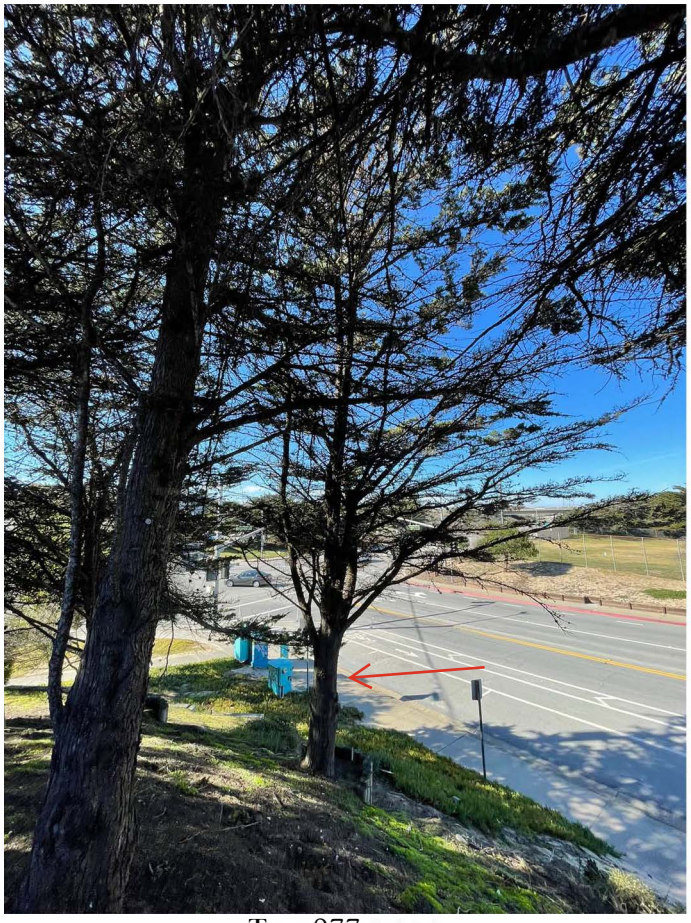
Tree 972.

Tree 973.

Tree 974.

Tree 975.

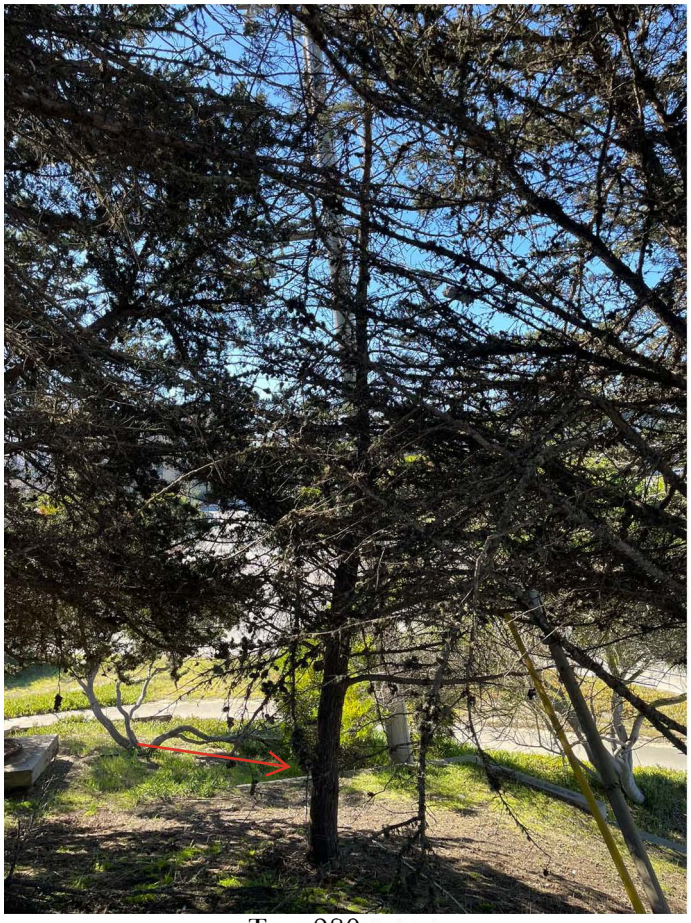
Tree 976.



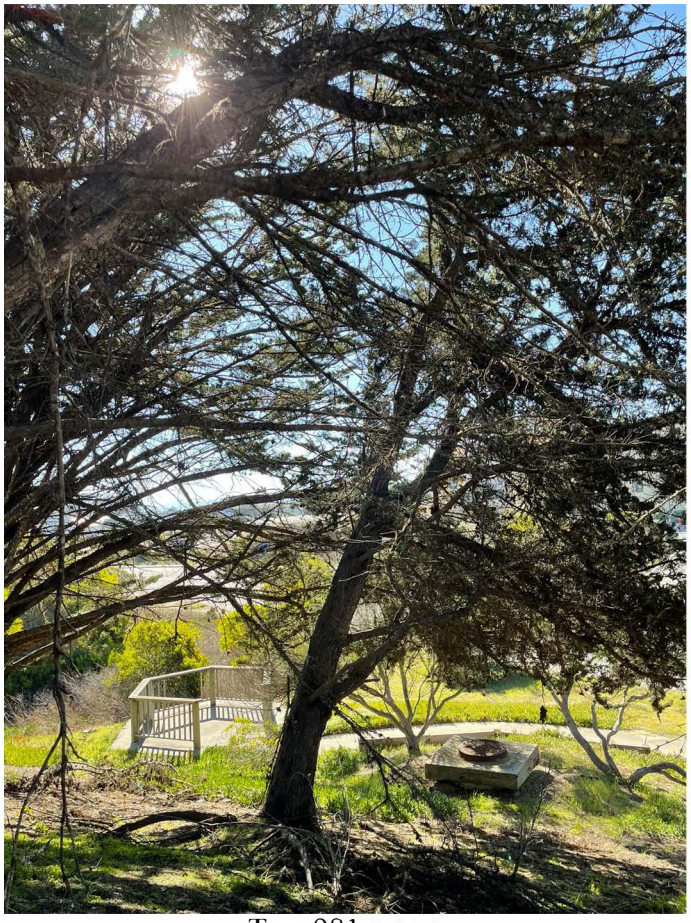
Tree 977.

Tree 978.

Tree 979.



Tree 980.



Tree 981.

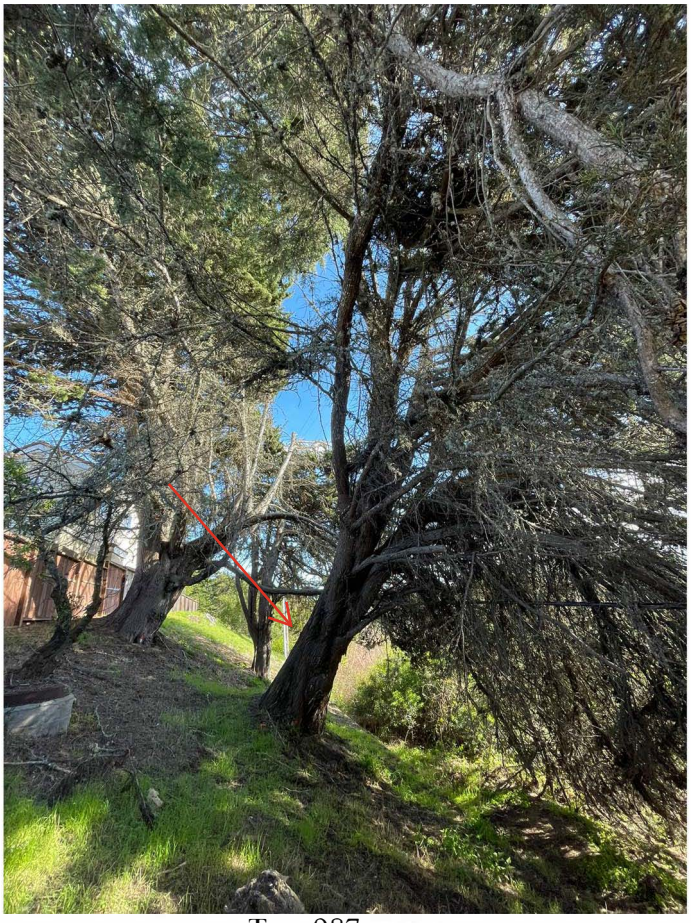
Tree 982.

Tree 983.

Tree 984.

Tree 985.

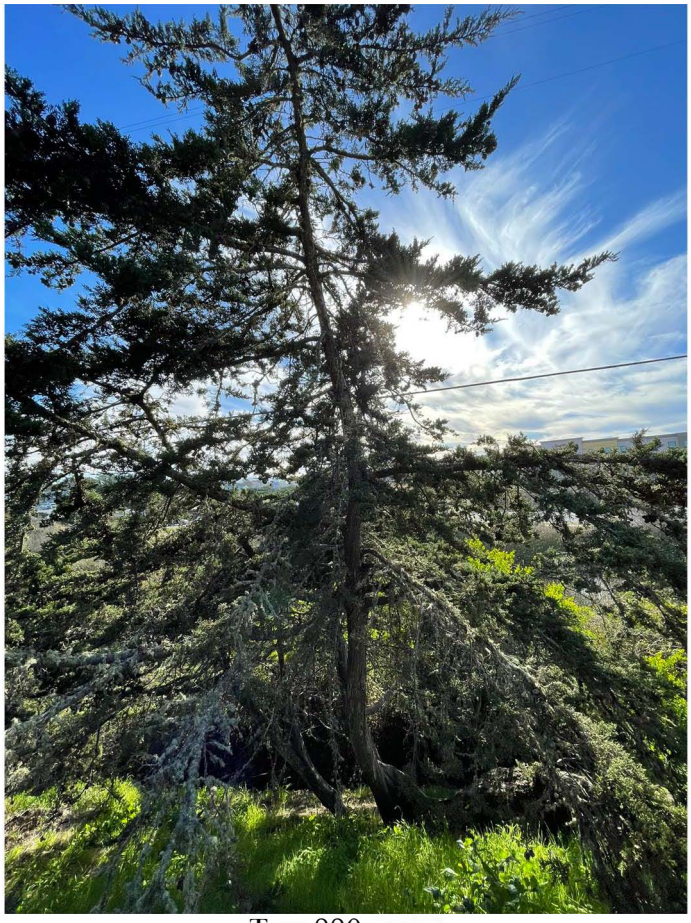
Tree 986.



Tree 987.

Tree 988.

Tree 989.



Tree 990.

Tree 991.

Tree 992.

Tree 993.

APPENDIX C

Recommended Best Management Practices

Tree Protection and Best Management Practices (BMPs)

Prior to the commencement of project related activities, the following tree BMPs shall be implemented and approved by a qualified arborist or forester:

- Trees located adjacent to the construction area shall be protected from damage by construction through the use of temporary fencing and wrapping of trunks with protective materials.
- Fencing shall consist of chain link, supported snowdrift or plastic mesh, hay bales, or field fence. Fencing shall have cross bracing (typically 2x4 material) on both the top and lower edges of the fencing material to prevent sagging and provide lateral support. Fencing shall stand a minimum height of four feet above grade and be placed to the farthest extent possible from the base of the trees, protecting the trees drip line area (typically 10-12 feet away from the base of a tree).
- In the cases where access or space is limited it is permissible to protect trees within the 10-12-foot distance after determination and approval are made by a qualified forester or arborist.
- Soil compaction, parking of vehicles or heavy equipment, stockpiling of construction materials, and/or dumping of materials is not permitted adjacent to trees on the property, especially within fenced areas.
- Fenced areas and the trunk protection materials shall remain in place during the entire construction period. Torn or damaged roots shall be cleanly cut to sound wood wherever possible to minimize decay entry points. Any roots found that must be cut should be cut by manually digging a trench and cutting exposed roots with a saw, vibrating knife, rock saw, narrow trencher with sharp blades, or other approved root pruning equipment. No tree seals shall be used as the seal material only promotes decay.
- A mulch layer up to approximately 4 inches deep should be applied to the ground under-protected trees following construction. Only 1 to 2 inches of mulch should be applied within 1 to 2 feet of the trunk, and under no circumstances should any soil or mulch be placed against the root crown (base) of trees. The best source of mulch would be from chipped material generated on-site.
- Irrigation should be that of normal for exterior planting. Normal watering means that soil should be kept evenly moist and watered regularly, as conditions require. Most plants prefer one (1) inch of water a week during the growing season, but care needs to be taken not to over water. It is better to water once (1) a week and water deeply (over 24 inches), than to water frequently for a few minutes.

Tree Pruning

It is to be understood that the pruning of retained trees is expected for this site. Pruning shall conform to the following standards:

- Clear the crown of diseased, crossing, weak, and dead wood to a general minimum size of 1-1/2 inch in diameter.
- Remove stubs, cutting outside the wound wood tissue that has formed around the branch.
- Interior branches shall not be stripped out.

- Reduce end weight on heavy, horizontal branches by selectively removing small- diameter branches, no greater than three (3) inches, near the ends of the scaffolds. In some cases, larger diameters may be removed depending on the situation (where critical for safety).
- Pruning cuts larger than four (4) inches in diameter, except for deadwood, shall be avoided, unless deemed crucial for safety (broken, cracked, crossing, rubbing, etc.). Pruning cuts that expose heartwood shall be avoided whenever possible.
- Pruning shall not be performed during periods of flight of adult boring insects because fresh wounds attract pests (generally spring). Pruning shall be performed only when the danger of infestation has passed.
- All pruning shall be performed by a qualified arborist or under the supervision of an ISA Certified Arborist or Tree Worker. Arborists are required to have a State of California Contractors License for Tree Service (C-61/D49) and provide proof of worker's compensation and general liability insurance.
- All pruning shall be following the Tree Pruning Guidelines (International Society of Arboriculture) and/or the ANSI A300 Pruning Standard (American National Standard for Tree Care Operations) and adhere to the most recent edition of ANSI Z133.1.
- No more than 20 percent of live foliage shall be removed within the trees.
- Brush shall be chipped, and chips shall be spread underneath trees within the tree protection zone to a maximum depth of 6 inches, leaving the trunk clear of mulch.

Following construction, a qualified arborist should monitor trees adjacent to the area of the improvements and if any decline in health that is attributable to the construction is noted, additional trees should be planted on the site.

Root Barriers

Severe pruning of tree roots may lead to a major decline or tree death. The best solution is to select trees that are less likely to become a problem or to plant further away from foundations, curbs, gutters, parking lots, sidewalks, and driveways to reduce tree growth or to allow them to grow in another direction. Place barriers in the soil to a depth of 18 to 24 inches (see landscape details) by trenching along the area to be protected at a distance of five (5) times the trunk diameter. In the cases where access or space is limited, it is permissible to reduce the distance after determination and approval are made by a qualified forester or arborist.

APPENDIX D

PRC Section 4291 Defensible Space Zones

Zone 0: Ember Resistant Zone.

This is the ember resistant zone, which extends 5 feet from buildings, structures, stairs, decks, etc. A properly managed Zone 0 reduces the likelihood of structure ignition by reducing the potential for flame contact. Flames can be generated from embers that accumulate at the base of a wall and ignite vegetation, vegetative debris, or other combustible materials located close to the structure. Zone 0 is a critical component of structure defense and, when coupled with Zone 1 and Zone 2, is essential to defensible space. This zone includes the area under and around all attached decks and requires the most stringent wildfire fuel reduction. The ember-resistant zone is designed to keep fire or embers from igniting materials that can spread the fire to the home. Backyards are considered Zone 0. The following provides maintenance guidance for this zone.

- Use hardscape like gravel, pavers, concrete, and other noncombustible mulch materials. No synthetic lawns, combustible bark, woodchips, or mulch. No lumber or round logs, railroad ties, or creosote-treated or pressure-treated wood.
- No combustible attached trellis, pergola, shade covering, planters, privacy wall, etc.; no combustible storage structures (e.g., woodsheds, potting bench, etc.); and replace combustible fencing, gates, and arbors attached to the home with noncombustible alternatives.
- The site plan for the project proposes two new 6-foot horizontal board wooden fences that are attached to the structure. Wooden fences should not be directly attached to the residence, and a 10-foot non-combustible section (e.g., metal gate) should be placed between the wooden section of the fence and the house.
- Potted plants should not exceed two (2) feet in vegetation height and must be contained in non-combustible containers (no wooden planter boxes, wine barrels, etc.).
- Remove all dead and dying weeds, grass, plants, shrubs, trees, branches, and vegetative debris (i.e., leaves, needles, cones, bark, etc.).
- Check roofs, gutters, decks, porches, stairways, etc. for accumulated debris, leaf litter, and other flammable materials; clean regularly.
- Remove all branches within 10 feet of any chimney or stovepipe outlet.
- Limit plants in this area to low-growing, nonwoody, properly maintained plants.
- Limit combustible items (e.g., outdoor furniture, planters, etc.) on top of decks.
- Trim and prune woody vegetation that extends into Zone 0. No trees should be planted if their canopy at maturity can be expected to extend closer than 5 feet to the structure's roof, balcony, decks, or exterior wall (10 feet from any chimney or stovepipe outlet).
- Consider relocating garbage and recycling containers, woodsheds, and BBQs (propane) outside this zone.

Zones 1: Lean, Clean, and Green.

Zone 1 is the second layer of a defensible fire perimeter around a residential structure in wildfire prone areas. It is designed to provide an additional level of protection for the building or structure, extending from 5 feet to 30 feet away from the structure and any attached balconies, patios, or outbuildings. The goal of fuel management in Zone 1 is to remove excess vegetation and to maintain the landscaping in a way that reduces ignition of the structure via heat transfer from burning vegetation. It also provides firefighters with space and access to protect the structure in case of wildfire.

Fuel management in Zone 1 involves mowing, removing dead or dying plants, ladder fuels, pruning vegetation, and hauling away all materials. Remove branches that overlap with the roof or are closer than 10 feet from windows and chimneys. Dead vegetation removal includes fallen leaves, needles, twigs, bark, cones, and small branches. Cut and mow annual grass and herbaceous plants down to a height of 4 inches. Mow before 10:00 a.m. and never on a hot or windy day. String trimmers are a safer option (versus lawnmowers) for clearing vegetation. Avoid removing all vegetation to bare soil, as this may cause erosion.

An important aspect of vegetation management in Zone 1 is vertical spacing of trees, shrubs, and grasses (**Figure 5**). Large trees do not need to be cut and removed as long as they fulfill the horizontal spacing requirement (see below) and all of the plants beneath them are managed to remove vertical fuel ladders. Healthy trees should be pruned (i.e., limbed) at least 6 feet from the ground. Allow extra vertical space between shrubs and trees. Lack of vertical space can allow a fire to move from the ground to the brush to the treetops like a ladder. This leads to more intense fires closer to your home. To create vertical spacing and reduce fuel ladders created by shrubs under trees, tree branches should be limbed to a height of at least three times the height of the shrub.

Figure 7: Minimum Vertical Clearance

Source: California Department of Forestry and Fire Protection (CAL FIRE).

Horizontal spacing is the distance between trees and shrubs (**Figure 6**) and is managed to reduce the likelihood of fire spreading from one plant to the next. It is recommended to create a horizontal space between shrubs equal to twice the height of the shrubs by removing trees and shrubs that are within this distance. Trees should be trimmed to maintain a gap of at least 10 feet from the next tree. Where canopies overlap, selective removal of smaller trees can maintain the desired horizontal spacing of trees.

Figure 8: Minimum Horizontal Clearance

Source: California Department of Forestry and Fire Protection (CAL FIRE).

Other considerations:

> Place any woodpiles in Zone 2; establish a 10-foot clearance down to bare mineral soil around woodpiles.
>
> Wood mulch is acceptable in Zone 1 if there is a transition from Zone 1 to Zone 0 and if the vegetation in Zone 1 is grouped/clumped with the required horizontal distance.

Zone 2: Fuel Reduction Zone

Fuel management in this zone aims at reducing the potential behavior of an oncoming fire to prevent rapid spread of wildfire from plant to plant and to reduce flame lengths. Zone 2 actions reduce the number of fuels, especially dead vegetation (e.g., leaves, needles, twigs, bark, cones, and small branches). Grass and herbaceous vegetation should be mowed to a height of 4 inches. Mowing should occur before 10:00 a.m. and never on a hot or windy day. String trimmers are preferred because they pose a low risk of sparking.

Spacing of trees and shrubs is similar to that of Zone 1, with a greater focus on vertical spacing (i.e., no ladder fuels). Horizontal space between trees should maintain a gap of at least 10 feet from the next tree. Where canopies overlap, selective removal of smaller trees can maintain the desired horizontal and vertical spacing of trees. Overlapping tree canopies should be avoided. Shrubs may be aggregated in clumps or islands that are well isolated from the surrounding shrubs and tree canopies. Spacing of shrubs and trees along fences should be managed according to the requirements of Zone 0 (i.e., 5-foot clearance to all structures).