

THOMPSON
WILDLAND MANAGEMENT

Environmental Management & Conservation Services
International Society of Arboriculture Certified Arborist # WE-7468A
Department of Pesticide Regulation Qualified Applicator Lic. #QL50949 B
Environmental & Arborist Assessments, Protection, Restoration, Monitoring & Reporting
Wildland Fire Property Protection, Fuel Reduction & Vegetation Management
Invasive Weed Control, and Habitat Restoration & Management
Soil Erosion & Sedimentation Control
Resource Ecologist

February 15, 2018

Monterey Peninsula Water Management District
Attention: Mr. Larry Hampson, District Engineer
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Monterey, CA. 93940

APN: 417-051-004-000

Subject: Construction impact assessment for trees located at the Sleepy Hollow Fish
Rearing Facility

An arborist assessment was recently conducted in preparation for the proposed facility improvement project (i.e., Cooling & Degas Facility) located at the *Sleepy Hollow Fish Rearing Facility* (APN: 417-051-004) in Carmel Valley. The purpose of the assessment was to evaluate tree health, construction impacts, and to provide tree removal, preservation and replacement recommendations associated with the proposed project. More specifically, this assessment involved performing a ground level visual inspection of trees located on the subject property to assess general physiological health and structural condition and provide recommendations for retaining, protecting and removing trees based on tree health, condition, location and construction related impacts. This assessment will assist in identifying tree characteristics and conditions, determine which trees are candidates for removal, and provide tree protection guidelines and replacement recommendations to assist in sustaining woodland health and character.

The location of the trees proposed for removal are identified on the corresponding *Exhibit A. Project Design Plan*, and photographs of subject trees are located at the end of the report (refer to *Figures 1-4*). Findings and recommendations are provided herein.

I. SITE CHARACTERISTICS & DESCRIPTION

The *Sleepy Hollow Fish Rearing Facility* is located in a somewhat rural oak dominated woodland vegetation community in the flood plain of the Carmel River. The private

Sleepy Hollow residential community is located less than one mile to the north. Soils on this relatively flat flood plain parcel appear to be stable and sufficient for supporting healthy habitat and biodiversity. Wind direction is predominantly out of the southwest.

This partially developed woodland property is dominated by mature and aging upper-canopy coast live oak (*Quercus agrifolia*) trees, with California bay laurel (*Umbellularia californica*), California buckeye (*Aesculus californica*), Western sycamore (*Platanus racemosa*) and big-leaf maple (*Acer macrophyllum*) occurring to a lesser extent. Lower growing shrub and understory vegetation occurring on the parcel is dominated by native species, however non-native invasive species are also inhabiting the property.

In regards to tree removal, two mature coast live oak trees are proposed for removal in preparation for the proposed facility improvement (i.e., Cooling & Degas Facility) project (refer corresponding *Exhibit A. Project Design Plan* and attached photos *Figures 1-4*). It should be noted that natural recruitment and regeneration of coast live oak trees is occurring on the subject parcel and is sufficient for sustaining woodland health and character; however it will be necessary to plant a few replacement oak trees to satisfy County replacement requirements. Special status plant and animal species, sensitive habitat, and actively nesting birds that have protection status were not observed on the property during the site assessment. However, in regards to nesting birds, an additional nesting bird assessment should be conducted within two weeks of construction activities beginning if tree removal or pruning operations occur during the nesting season, which in Monterey may begin as early as February and continue through August.

II. METHODOLOGY

For this report, a ground level visual assessment of property trees was recently conducted. In regards to inspecting trees, no aerial (climbing) inspections, woody tissue testing and/or root excavations were performed or requested as part of this evaluation.

For this assessment, native specie trees that are greater than 6 inches diameter at 24 inches above grade are required to be recorded for removal.

Recommendations are based on the overall general health, vigor and condition of subject trees and habitat; the impact that site development activities may have on trees and natural resources; the hazard level trees present to proposed occupied structures and/or areas with human traffic; and the impacts that tree management and/or removal activities may have on sensitive natural resources, wildlife habitat and nearby healthy trees.

In regards to attachments included in this report, the corresponding *Exhibit A. Project Design Plan* shows the location of native specie trees proposed for removal in relation to proposed structures and other property features. Photographs depicting subject trees and property are located at the end of the report (refer to *Figures 1-4*).

III. TREES PROPOSED FOR REMOVAL & ECOLOGICAL IMPACTS

As previously stated, two native coast live oak (*Quercus agrifolia*) trees are proposed for removal in preparation for the planned facility improvement project at the *Sleepy Hollow Fish Rearing Facility* (refer to corresponding *Exhibit A. Project Design Plan* and attached photos [*Figures 1-4*]). Both trees are located directly adjacent to proposed construction operations, which necessitates removal. Trees located within or directly adjacent to construction and grading activities should be removed to safely make way for proposed construction operations, as well as substantial and unavoidable root system impacts that will significantly compromise the health and structural integrity of mature trees.

The DBH (diameter at breast height) of these two mature and aging oak trees is 20 inch DBH (identified as *Tree #1* on *Exhibit A*) and 32 inch DBH (identified as *Tree #2* on *Exhibit A*). Both of these oak trees have a co-dominant crown class and are in fair physiological health and structural condition (refer to *Figures 1-4*). Biotic and/or abiotic disorders appear to be absent in levels that are detrimental to tree health and condition, however both trees have visible decay features that are characteristic of mature and senescing oaks that may be partially compromising structural integrity.

The ecological impacts of proposed operations will be minimal due to limited tree removal and the relatively small area that will be impacted by project operations. Additionally, three replacement oak trees will be planted to mitigate impacts associated with the removal of the two subject oak trees.

In regards to tree protection and preservation, per Monterey County tree preservation ordinances and resource protection best management practices (BMP's), the remaining trees on the property will be retained and protected during construction activities. Tree and resource preservation measures will assist in protecting ecological resources and minimizing harmful impacts to trees and woodland habitat.

IV. RECOMMENDATIONS

A. Tree Removal & Replacement:

For the reasons provided in this report, permission is being requested to remove two mature coast live oak trees that are located directly adjacent to the existing facility and proposed project site (refer to the *Exhibit A: Project Design Plan* that shows the location of the two subject trees that are identified as *Tree #1* and *Tree #2*). These two trees require removal in order to make way for facility improvement operations (i.e., Cooling & Degas Facility). The remaining trees on the property will be retained and protected during construction activities (refer to tree protection BMP's provided in this report) and two replacement oak trees will be planted to mitigate tree removal impacts.

When tree removal operations commence, removal should be performed by licensed and insured tree workers trained in accordance with ANSI Z133.1 safety regulations, as required by OSHA. If necessary, tree protection measures should be installed to nearby trees that could potentially be damaged during removal operations. Additionally, if substantial soil disturbance occurs at the removal site it may be necessary to install erosion and sedimentation control measures to effectively stabilize exposed soil surfaces and contain sediment runoff. Furthermore, best management practices (BMP's) involved with tree removal, disposal, and the cleaning and sterilization of tools and equipment should be implemented to minimize the chance of biotic disorders spreading to other areas.

Per *Monterey County RMA* permit requirements and in the interest of supporting and sustaining woodland habitat and character, three (3) indigenous coast live oak trees of good physiological and structural health shall be planted in appropriate and suitable locations on the subject property to mitigate tree removal impacts associated with proposed property development activities. The replacement plantings should be 1 to 5 gallon container size (depending on nursery stock availability and quality). The replacement trees should be acquired from a local native plant nursery that has a good selection of specimens that are free from harmful pathogens, insect pests and/or structural disorders. Furthermore, the 3 replacement plantings should be planted during the appropriate time of year (i.e., fall or winter) using proper tree planting techniques and best management practices, and should be planted in suitable locations that will support healthy establishment, maturation and long-term viability. Successful completion of this Monterey County tree preservation compliance action shall be achieved when the 3 replacement plantings survive a one-year monitoring period. Proper execution of this tree replacement action will mitigate tree removal impacts and will assist in preserving and sustaining woodland habitat and character.

Prior to any tree removal or disturbance that is performed during the bird nesting season, which in Monterey County may begin as early as February and continue through early August, a nesting assessment is required to determine if any nesting birds (e.g., raptors or other species) are present. A recent tree and site inspection determined there are currently no actively nesting birds occurring within or directly adjacent to the proposed project site; however depending on when construction activities begin (i.e., February-August) it may be necessary to perform an additional assessment.

B. Construction Tree & Resource Protection Measures:

Per *Monterey County RMA* requirements and resource preservation BMP's, the following tree and resource protection measures shall be implemented for this property improvement project. Proper execution of tree and resource preservation BMP's and regular construction site monitoring will assist in safeguarding and sustaining the health

and welfare of trees and habitat on the property. The location of tree protection measures will be determined on-site by the project arborist and other involved parties, and tree and resource preservation measures will be regularly inspected and properly maintained for the duration of the project to make sure they are functioning effectively:

1) Prior to commencing with grading and construction activities install high visibility exclusionary fencing that clearly defines the work area, limits unnecessary disturbance to surrounding areas, and protects the critical root zone (i.e., canopy dripline) of individual trees and tree groupings. Additionally, install exclusionary fencing around nearby manzanita populations to protect these native stands from proposed construction activities. Perform necessary repairs, modifications and maintenance on a as needed basis.

2) Install appropriate sedimentation control measures (e.g., silt fence) along downslope perimeter of site, and if necessary apply soil stabilization and source control measures (e.g., rice straw mulch, erosion control blankets, all-weather surfaces) to exposed soil surfaces to prevent erosion problems and sediment runoff during rain events. Perform routine monitoring as well as necessary maintenance and improvements to ensure that erosion & sedimentation control measures are functioning effectively. It should be noted, that erosion problems and sediment deposition around trees can adversely affect tree health and stability.

3) Where grading and construction activities are occurring within 3 feet of trees install trunk and stem protection measures (e.g., 2x4 lumber forming protective barrier around circumference of lower stem of tree). Tree protection measures should be securely installed to trees with rope and high visibility exclusionary fencing. If it is necessary to perform any pruning use proper tree pruning practices to minimize stress and maximize wound healing.

4) Where possible avoid damaging or severing roots located within the critical root zone (i.e., canopy dripline) of trees, especially roots that are 2 inches diameter or larger. Construction footings should be designed and excavation cuts performed in a manner to minimize impacts to primary roots. If significant roots are encountered efforts should be made to carefully excavate (e.g., tunnel or dig) under or around primary lateral roots. Trenching operations that may occur within the critical root zone of retained trees should be performed under the guidance and monitoring of the project arborist. Tree roots severed or significantly damaged during grading and excavating operations should be cleanly cut and promptly covered with moist burlap fabric or equivalent until roots are permanently covered with backfill material or until the exposed grading cut and soil profile is permanently stabilized and protected. If burlap covered cut roots are exposed to the outside environment for an extended period of time a project attendant shall be assigned the task of regularly wetting burlap covered roots to prevent root desiccation.

5) Avoid storing construction tools, materials and equipment within the critical root zone (i.e., canopy dripline) of trees, and do not wash out or dispose of excess materials (e.g., paint, plaster, concrete, or other potentially harmful substances) within critical root zone areas. If it is unavoidable and necessary to temporarily store or stockpile materials and equipment within the dripline of trees, apply 3-5 inches of clean and properly sourced woodchip mulch to prevent significant soil compaction and root zone disturbance.

6) Where possible avoid altering the natural grade within the critical root zone of trees to reduce the likelihood of causing stress, decline or mortality. Lowering natural grade can result in significant root damage and raising the grade (i.e., introducing fill material, particularly around the lower trunk and root crown) can lead to trunk and root decay disorders that are detrimental to the health and structural integrity of trees.

7) If tree pruning is necessary it is important to utilize proper pruning BMP's that will assist in minimizing harmful impacts to trees. Tree pruning should ideally be performed during the fall through early winter months. A general principle to follow is that it is important to make proper pruning cuts, keeping them as small as possible while removing as few living branches as necessary to achieve the objective. Excessive pruning stresses trees by depleting energy reserves and reducing food making processes (i.e., photosynthesis), which compromises a trees ability to replenish essential reserves during periods of stress (e.g. root disturbance and drought conditions). Additionally, it creates an abundance of exposed wounds providing entry points for potentially harmful biotic disorders (e.g., disease, decay and/or insect pests) that can adversely affect the health and structural integrity of trees. It should be noted that pruning involving the removal of 30% or more living canopy material requires a County permit. Additional pruning BMP's and guidelines are available upon request.

8) Regularly perform construction site inspections for the duration of the project to monitor the condition of tree and resource protection measures, and to determine if any repairs, adjustments or modifications are necessary. Additionally, trees impacted by site development should be periodically monitored and assessed during and following the project to determine if any tree care and management actions are necessary, and to make certain trees do not present a hazard to property and/or nearby structures.

C. Tree Repair & Replacement:

Per tree care BMP's and tree preservation ordinances, any trees damaged during construction operations shall be promptly repaired and/or treated per arborist specifications. Remedial or mitigation treatments may vary and will depend largely on the damage or injury sustained, as well as the condition of specific trees at the time of injury. As previously noted, trees impacted by project operations should be periodically monitored and assessed by the project arborist during and following the project to determine if any tree care and management actions are necessary that will assist in

preserving and improving tree health, and/or preventing tree hazards. Prescribed treatments will be determined on a case by case basis.

V. CONCLUSION

In conclusion, two mature coast live oak trees are proposed for removal in preparation for facility improvement operations that are planned for the *Sleepy Hollow Fish Rearing Facility* in Carmel Valley. Tree removal is necessary due to these two trees being located within or directly adjacent to the construction footprint, which requires tree removal to make way for proposed construction activities. Additionally, tree and resource protection measures shall be installed prior to construction activities commencing and properly maintained for the duration of the project.

Lastly, in the interest of complying with Monterey County tree preservation ordinances and sustaining the health and character of oak woodland habitat, three replacement oak trees shall be planted in suitable locations on the subject property and monitored for a one-year period.

Thank you and please let me know if you have any questions or need additional information.

Best regards,

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Resource Ecologist

Date

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Figure 1. Coast live oak identified as Tree #1 is proposed for removal to make way for planned facility improvement operations.



Figure 2. Mid to upper-canopy of oak identified as Tree #1. Tree is in fair overall health and condition.



Figure 3. Multi-trunk coast live oak identified as Tree #2 (right side of photo) is proposed for removal to make way for planned facility improvement operations.



Figure 4. Mid to upper-canopy of oak identified as Tree #2. Tree is also in fair overall health and condition.