



MEMORANDUM

DATE: July 5, 2021

TO: Roy Hankins (Emerio)

FROM: Todd Prager, RCA #597, ISA Board Certified Master Arborist

RE: Oak Tree Protection and Removal Recommendations for Meyer Farm

Summary

This report includes tree protection and removal recommendations for 33 Oregon white oaks over 24-inch DBH at the proposed Meyer Farm Subdivision in Salem.

Background

Emerio is designing the proposed Meyer Farm subdivision at 4540 Pringle Road SE in Salem, Oregon. The site consists of a mix of native and non-native trees including Oregon white oaks (*Quercus garryana*) in the northwestern and southern portions of the site.

My assignment for this project was to assess 33 of the Oregon white oaks over 24-inches in trunk diameter (DBH), review the proposed subdivision grading plan in Attachment 1, and provide recommendation for tree preservation or removal based on the proposed impacts.

Tree Assessment

On May 24, 2021, I inventoried and assessed 33 Oregon white oaks over 24-inch DBH. The assessed trees are number in red on the proposed grading plan in Attachment 1. A spreadsheet with the tree assessment data is provided in Attachment 2. The inventory spreadsheet lists the tree number, species (common and scientific names), DBH, crown radius, tree health condition, tree structural condition, pertinent comments, and treatment (remove or retain). The tree numbers in the inventory in Attachment 2 correspond to the tree numbers on the proposed subdivision grading plan in Attachment 1.

Tree Removal and Retention Recommendations

The City of Salem defines tree removal as “to cut down a tree or remove 30 percent or more of the crown, trunk, or root system of a tree.” The City defines the root system as a “circular area beneath the tree measuring one foot in radius for every one inch of dbh.”

After reviewing the proposed construction and grading plan in Attachment 1, five of the assessed Oregon white oaks (trees 2479, 2823, 2832, 3213, and 3228) will be removed. The remaining 28 assessed Oregon white oaks will be retained.

Protection recommendations for the trees to be retained are provided in the next section of this report.

Tree Protection Recommendations

The following site specific tree protection measures are recommended for the 28 assessed Oregon white oaks to be retained:

- **Directional Felling:** Fell the trees to be removed away from the trees to be retained so they do not contact or otherwise damage the trunks or branches of the trees to be retained. No vehicles or heavy equipment should be permitted within the tree protection zones during tree removal operations.
- **Tree Protection Fencing:** Place tree protection fencing in the locations shown in Attachment 1. The tree protection fencing has been carefully located to ensure no more than 30 percent of the assessed trees’ root systems are impacted. It may be necessary to have surveyors locate the tree protection fencing with stakes, flagging, or other markings on site to ensure it is accurately placed. Any work within the tree protection zones shall occur under the onsite supervision of the project arborist.
- **Stump Removal:** The stump of tree 2823 shall be flush cut and retained or carefully stump ground to avoid disturbing the root system of tree 2824.
- **Building Demolition:** If any of the existing buildings in the southern area of the site will be demolished, it shall occur under the onsite supervision of the project arborist. Heavy equipment shall be positioned on the existing driveway or gravel areas, or on steel plates if demolition access is needed on non-paved or graveled areas.
- **Modify Grading:** The proposed grading within the root system of trees 3109 and 3217 needs to be modified so it is outside the tree protection zones and not more than 30 percent of their root systems are impacted by grading.
- **Building Footprint Locations:** The building footprints on lots 40, 41, 56, and 57 will need to be designed so they are outside the tree protection zones of the adjacent trees.
- **Excavation Oversight:** The project arborist shall be onsite to oversee the excavation of the building foundations and proper pruning and protection of roots over 2-inches in diameter adjacent to trees 2822, 2824, 3109, and 3217.
- **Construction Access:** Construction foot traffic into the tree protection zones is permitted if steel plates are placed on the ground or a 12-inch layer of woodchips is placed and maintained over geotextile fabric. The purpose of

these measures is to reduce excessive soil compaction from repeated foot traffic. The project arborist shall be consulted to approve tree protection fence adjustments and compaction reduction methods prior to any encroachments into the tree protection zones.

- **Protect Crowns of Trees:** The crowns of the trees may extend beyond the tree protection fencing. Care will need to be taken to not contact or otherwise damage the crowns of the trees during construction or demolition work. If pruning is required, it shall be the minimum necessary to achieve the required clearance. No more than 20 percent of the live crowns should be removed in one growing season. All pruning shall be consistent with ANSI A300 pruning standards.
- **Sediment Fencing:** Sediment fencing shall be installed outside the protection zones of the trees to be retained to minimize root disturbances. If erosion control is required inside the protection zones, straw wattles shall be used on the soil surface.

Additional tree protection recommendations are provided in Attachment 3.

Conclusion

Five of the assessed Oregon white oak trees are recommended for removal due to construction impacts. The remaining 28 assessed Oregon white oak trees to be retained will be protected during construction by adhering to the recommendations in this report. Any change to the tree protection plan should be completed by the project arborist to ensure the trees to be retained are properly protected.

Please contact me if you have questions, concerns, or need any additional information.

Sincerely,



Todd Prager

ASCA Registered Consulting Arborist #597
ISA Board Certified Master Arborist, WE-6723B
ISA Qualified Tree Risk Assessor
AICP, American Planning Association

Enclosures: Attachment 1 – Grading Plan with Tree Removal and Protection
Attachment 2 – Tree Inventory
Attachment 3 – Tree Protection Recommendations
Attachment 4 – Assumptions and Limiting Conditions



Attachment 2

Tree No.	Common Name	Scientific Name	DBH ¹	C-Rad ²	Condition ³	Structure	Comments	Treatment
2579	Oregon white oak	<i>Quercus garryana</i>	38	39	fair	fair	large scaffold branch failure with large wound at lower trunk, scaffold branch failures in upper crown	remove
2727	Oregon white oak	<i>Quercus garryana</i>	48	25	poor	poor	large scaffold and codominant branch failures, moderately thin crown, offsite	retain
2729	Oregon white oak	<i>Quercus garryana</i>	27	27	good	fair	one sided, leans south, offsite	retain
2739	Oregon white oak	<i>Quercus garryana</i>	27	28	poor	poor	overtopped by adjacent trees, suppressed, significant branch dieback and failures	retain
2793	Oregon white oak	<i>Quercus garryana</i>	28	29	good	good		retain
2796	Oregon white oak	<i>Quercus garryana</i>	27	45	fair	fair	moderately thin upper crown, significant lean south, history of branch failures	retain
2815	Oregon white oak	<i>Quercus garryana</i>	34	30	fair	poor	multiple leaders at 4', extensive scaffold branch failures	retain
2822	Oregon white oak	<i>Quercus garryana</i>	50	28	good	fair	multiple leaders at 5'	retain
2823	Oregon white oak	<i>Quercus garryana</i>	32	30	good	fair	one sided, multiple leaders at 15'	remove
2824	Oregon white oak	<i>Quercus garryana</i>	33	34	good	fair	moderately one sided, upright leaders with included bark	retain
2832	Oregon white oak	<i>Quercus garryana</i>	30	0	very poor	very poor	failed at root crown	remove
2836	Oregon white oak	<i>Quercus garryana</i>	34	29	good	fair	codominant at 6' with included bark, multiple overextended leaders	retain
3084	Oregon white oak	<i>Quercus garryana</i>	32	25	good	fair	dead and failed branches up to 8" diameter	retain
3109	Douglas-fir	<i>Pseudotsuga menziesii</i>	32	26	good	fair	moderately one sided	retain
3194	Oregon white oak	<i>Quercus garryana</i>	27	32	good	fair	one sided, leans west	retain
3213	Oregon white oak	<i>Quercus garryana</i>	42	32	fair	fair	multiple leaders at 3', significant upper branch failures	remove

Attachment 2

Tree No.	Common Name	Scientific Name	DBH ¹	C-Rad ²	Condition ³	Structure	Comments	Treatment
3217	Oregon white oak	<i>Quercus garryana</i>	30	42	fair	fair	significant branch failures, stem connected with adjacent trees, long overextended leaders	retain
3228	Oregon white oak	<i>Quercus garryana</i>	34	30	fair	fair	significant heartrot at lower trunk, codominant at 4.5'	remove
3251	Oregon white oak	<i>Quercus garryana</i>	29	30	fair	fair	one sided, moderate branch dieback, stem connected with adjacent trees	retain
3360	Oregon white oak	<i>Quercus garryana</i>	29	35	good	fair	one sided, leans south, codominant at 6' with included bark	retain
3446	Oregon white oak	<i>Quercus garryana</i>	28	29	poor	poor	one sided, significant lean, thin crown, large branch failures	retain
4466	Oregon white oak	<i>Quercus garryana</i>	33	32	good	fair	large pruning wounds at lower trunk, significant lean south over high voltage lines, compacted gravel on north side	retain
4468	Oregon white oak	<i>Quercus garryana</i>	31	26	good	fair	one sided, leans south, long overextended codominant leader at 10'	retain
4470	Oregon white oak	<i>Quercus garryana</i>	29	22	good	fair	significant lean south, one sided	retain
4472	Oregon white oak	<i>Quercus garryana</i>	29	25	poor	poor	thin crown with significant branch dieback and failures	retain
4473	Oregon white oak	<i>Quercus garryana</i>	25	11	poor	poor	significant crown dieback, conks at lower trunk	retain
4500	Oregon white oak	<i>Quercus garryana</i>	37	36	fair	fair	moderately thin crown, compaction in root zone, branch dieback and failures	retain
4574	Oregon white oak	<i>Quercus garryana</i>	33	27	good	fair	one sided, branch failures up to 5" diameter	retain
4721	Oregon white oak	<i>Quercus garryana</i>	31	40	good	fair	one sided, connected to adjacent stem	retain

Attachment 2

Tree No.	Common Name	Scientific Name	DBH ¹	C-Rad ²	Condition ³	Structure	Comments	Treatment
4806	Oregon white oak	<i>Quercus garryana</i>	28	30	good	fair	moderately one sided, long overextended leaders	retain
4919	Oregon white oak	<i>Quercus garryana</i>	36	17	good	fair	one sided, extensive ivy	retain
4923	Oregon white oak	<i>Quercus garryana</i>	32	20	fair	fair	extensive ivy, 25% live crown ratio	retain
4958	Oregon white oak	<i>Quercus garryana</i>	28	15	poor	poor	smothered by ivy	retain
¹ DBH is the trunk diameter in inches measured per City of Salem standards.								
² C-Rad is the approximate crown radius in feet.								
³ Condition and Structure ratings range from very poor, poor, fair, to good.								

Attachment 3 **Tree Protection Recommendations**

The following recommendations will help to ensure that the trees to be retained are adequately protected:

Before Construction Begins

1. Notify all contractors of the tree protection procedures. For successful tree protection on a construction site, all contractors must know and understand the goals of tree protection.
 - a. Hold a tree protection meeting with all contractors to explain goals of tree protection.
 - b. Have all contractors sign memoranda of understanding regarding the goals of tree protection. The memoranda should include a penalty for violating the tree protection plan. The penalty should equal the appraised value of the tree(s) within the violated tree protection zone per the current Trunk Formula Method as outlined in the current edition of the ***Guide for Plant Appraisal*** plus any resulting fines by government agencies.
 - c. The penalty should be paid to the owner of the property.
2. Fencing
 - a. Establish fencing around each tree or group of trees to be retained.
 - b. The fencing should be put in place before the ground is cleared to protect the trees and the soil around the trees from disturbances.
 - c. Fencing should be established by the project arborist based on the needs of the trees to be protected and to facilitate construction.
 - d. Fencing should consist of 4-foot high steel fencing on anchored stands or 4-foot metal fencing secured to the ground with 6-foot metal posts to prevent it from being moved by contractors, sagging, or falling down.
 - e. Fencing should remain in the position that is established by the project arborist and not be moved without approval from the project arborist until final project approval.
3. Signage
 - a. All tree protection fencing should provided signage so that all contractors understand the purpose of the fencing.
 - b. Signage should be placed on every other fence panel.

During Construction

1. Protection Guidelines Within the Tree Protection Zones
 - a. No traffic should be allowed within the tree protection zones. This includes but is not limited to vehicle, heavy equipment, or even repeated foot traffic.
 - b. No storage of materials including but not limiting to soil, construction material, or waste from the site should be permitted within the tree protection zones. Waste includes but is not limited to concrete wash out, gasoline, diesel, paint, cleaner, thinners, etc.
 - c. Construction trailers should not to be parked/placed within the tree protection zones.
 - d. No vehicles should be allowed to park within the tree protection zones.
 - e. No activity should be allowed that will cause soil compaction within the tree protection zones.
2. The trees should be protected from any cutting, skinning or breaking of branches, trunks or woody roots.
3. The project arborist should be notified prior to the cutting of woody roots from trees that are to be retained to evaluate and oversee the proper cutting of roots with sharp cutting tools. Cut roots should be immediately covered with soil or mulch to prevent them from drying out.
4. No grade changes should be allowed within the tree protection zones.
5. Trees that have woody roots cut should be provided supplemental water during the summer months.
6. Any necessary passage of utilities through the tree protection zones should be by means of tunneling under woody roots by hand digging or boring with oversight by the project arborist.
7. Any deviation from the recommendations in this section should receive prior approval from the project arborist.

After Construction

1. Carefully landscape the areas within the tree protection zones. Do not allow trenching for irrigation or other utilities within the tree protection zones.
2. Carefully plant new plants within the tree protection zones. Avoid cutting the woody roots of trees that are retained.
3. Do not install permanent irrigation within the tree protection zones unless it is drip irrigation to support a specific planting or the irrigation is approved by the project arborist.
4. Provide adequate drainage within the tree protection zones and do not alter soil hydrology significantly from existing conditions for the trees to be retained.
5. Provide for the ongoing inspection and treatment of insect and disease populations that are capable of damaging the retained trees and plants.
6. The retained trees may need to be fertilized if recommended by the project arborist.
7. Any deviation from the recommendations in this section should receive prior approval from the project arborist.

Attachment 4

Assumptions and Limiting Conditions

1. Any legal description provided to the consultant is assumed to be correct. The site plans and construction information provided by Emerio was the basis of the information provided in this report.
2. It is assumed that this property is not in violation of any codes, statutes, ordinances, or other governmental regulations.
3. The consultant is not responsible for information gathered from others involved in various activities pertaining to this project. Care has been taken to obtain information from reliable sources.
4. Loss or alteration of any part of this delivered report invalidates the entire report.
5. Drawings and information contained in this report may not be to scale and are intended to be used as display points of reference only.
6. The consultant's role is only to make recommendations. Inaction on the part of those receiving the report is not the responsibility of the consultant.
7. The purpose of this report was to assess 33 of the Oregon white oaks over 24-inches in DBH, review the proposed subdivision grading plan in Attachment 1, and provide recommendation for tree preservation or removal based on the proposed impacts.