

Arborist Report

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Prepared for:

City of Oregon City
Oregon City Swimming Pool
1211 Jackson St.

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Introduction

A tree assessment was performed for an Oregon white oak (*Quercus garryana*) in front of 1211 Jackson St, at the corner of 13th Ave. Concerns were raised about the health and safety of the tree due to declining foliage health. Oregon City urban forest managers requested a qualified arborist perform a tree risk assessment to determine the level of risk posed by the tree. The assessment was conducted by an International Society of Arboriculture (ISA) Board Certified Master Arborist (#WE-7317-BM) and Qualified Tree Risk Assessor on October 8, 2018. The evaluation is summarized in the following report, which provides recommendations.

Methods

A visual inspection of the tree was used to develop the findings, conclusions, and recommendations found in this report. Data collection included estimating the diameter of the tree at approximately 54 inches above grade (DBH), height estimation, canopy radius estimation, a visual assessment of tree condition, structure and health, and a photographic record. No physical inspection of the upper canopy, sounding, root crown excavation, resistance drilling, or other technologies were used in the evaluation of the trees.

Risk Assessment Methodology

This evaluation follows the tree risk assessment methods developed by the International Society of Arboriculture. It consists of an inspection of the visible tree parts including surface roots, trunk, scaffold limbs, and canopy. The hazard and risk assessment results in a risk rating for the tree to help quantify the level of risk accepted by the tree's owner. To summarize the information about the trees that received a hazard evaluation, an overall hazard rating is obtained by assessing and assigning a value to the failure potential, identifying the size of the tree part most likely to fail (e.g., branch, one stem, or whole tree) and determining site use around the affected tree. Each of these three characteristics is assessed as follows:

Condition of Concern – Describes the part most likely to fail. The larger the tree part, the greater the potential for damage; therefore, the size of the failure part affects the overall hazard potential, and is described according to:

- Part Size - Typically the diameter of the limb or tree part
- Fall Distance - The distance of the part from the ground
- Target - The presence of any target(s) that could be impacted by failure

Likelihood of Failure – Identifies the most likely point of failure and rates the likelihood that the observed defect(s) will result in part failure. Failure potential is rated as:

- Improbable (defects are minor and unlikely to result in failure)
- Possible (defects are present and of concern)
- Probable (compounding and/or significant defects present)
- Imminent (defects are serious and imminent failure is likely)

Likelihood of Impact – Identifies the most likely point of failure and rates the likelihood that the structural defect(s) will impact the potential targets. Likelihood of impact is rated as:

- Very Low (Occasional use, as in a forest landscape)
- Low (e.g., tree lawn, sidewalk, park path)
- Medium (buildings or people within striking range more than 50% of the time)
- High (Constant and frequent use of the area within striking distance)

Consequences of Failure – Rates the level of damage caused by the defective part in the event of failure. The consequences of failure are rated as:

- Negligible (typically small branches <1" diameter, unlikely to cause damage)
- Minor (branches 1-2" diameter, may cause damage)
- Significant (damage would occur)
- Severe (failure would result in major damage)

Overall Risk Rating - The values assigned to condition, likelihood and consequences are summarized into an overall risk rating of Low to Extreme for each tree:

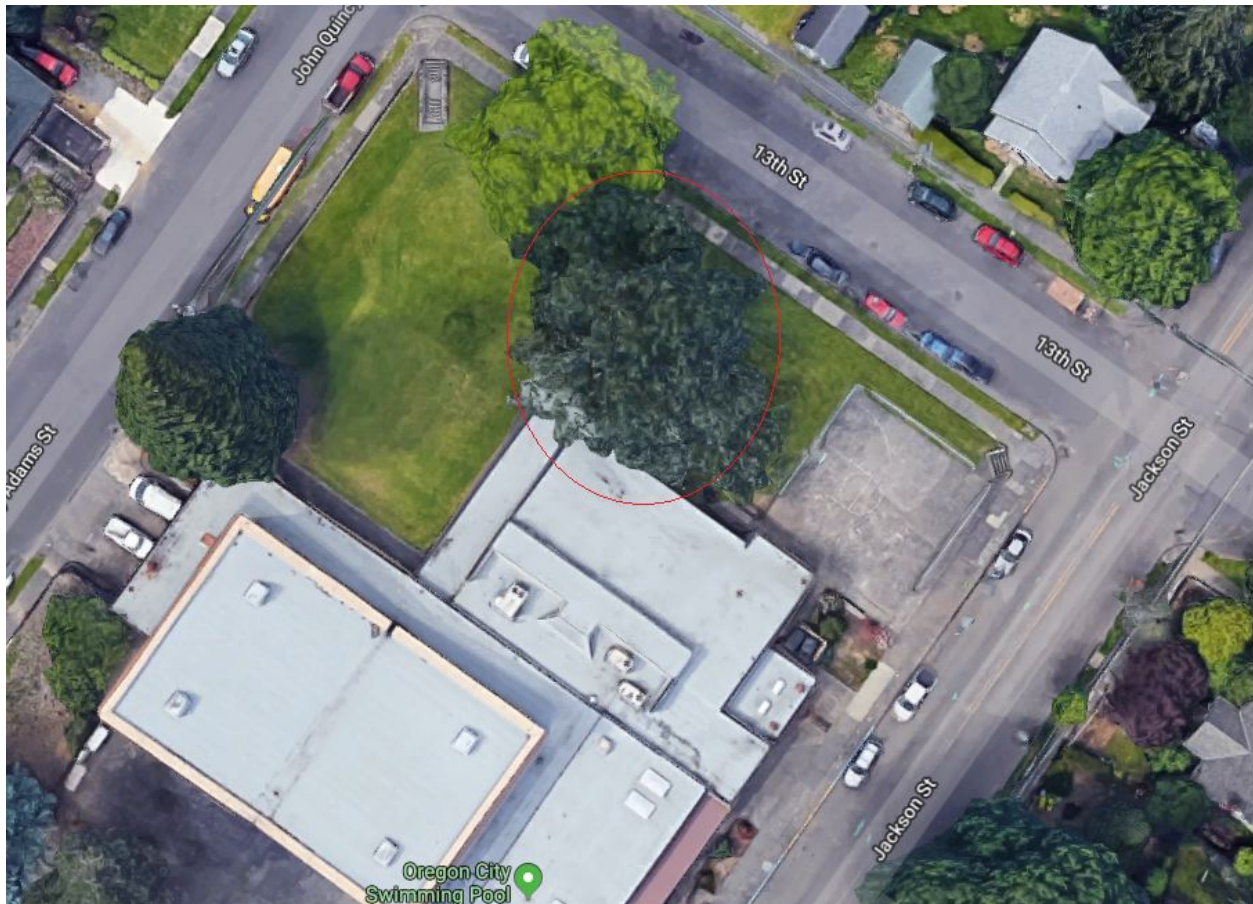
- Low (risk is present, mitigation measures may not be required)
- Moderate (mitigation advised within normal maintenance cycle)
- High (mitigation advised within the year)
- Extreme (mitigation necessary as soon as practical)

Limits and Assumptions

Many factors can limit specific and accurate data when performing evaluations of trees and their potential for failure. No soil or tissue testing was performed. All observations were made from the ground and no soil excavation to expose roots was performed. The determinations and recommendations presented here are based on current data and conditions that existed at the time of the evaluation and cannot be a predictor of the ultimate outcome for the evaluated tree in the future. Arborist assessments should be used as guidelines and the tree owner assumes all liability and risks.

Site Observations

The tree is located in front of 1211 Jackson St., near the intersection of 13th Ave., in Oregon City, Oregon. The tree is on level ground near a slope down toward 13th St. The area is not irrigated but has maintained turf. The adjacent building, access sidewalk, and public sidewalk are within the dripline of the tree. An adjacent classroom hosts a children's play area, and the kids are sometimes out on the lawn area for activities. The target areas are occupied occasionally (lawn) to frequently (building).



Aerial overview illustration of the site and the tree (circled red)

Tree Observations

The mature Oregon white oak (*Quercus garryana*) tree was inspected and assessed for health and structure on October 8, 2018. The trunk measures 50 inches DBH (diameter at breast height), and the tree is approximately 69 feet tall with an oblong canopy with an average diameter of 80 feet. The live crown ratio is 80%. The tree appears to have been well maintained over many years.

The tree has one major limb with dead foliage and the trunk shows evidence of a column of decay. There is an area of decay at the union of the limb. Minor epicormic shoots have sprouted near decayed areas and old pruning wounds. The foliage is sparse throughout the canopy, and appears more sparse than what is to be expected from a healthy tree with normal seasonal leaf drop. At breast height, it is estimated the dead and decayed trunk area spans approximately 46" of the 157" circumference, representing 29% of the circumference.

Tree Risk Assessment

Species: Oregon white oak (*Quercus garryana*)

dbh: 50"

Height: 69'

Condition: Fair

Tree Defect Observations

Crown and Branches: The canopy foliage is sparse. Dead leaves persist on one limb that is likely dead or nearly dead due to decay at the branch union.

Trunk: A large column of decay up to 46" wide and likely 30' tall is shown in Appendix photos.

Roots and Root Collar: Root collar is partly buried in soil.

Risk Categorization

The tree has a probable failure risk with a high likelihood of impacting a target (lawn area). This is a somewhat likely event with possible significant consequences. The risk rating for this tree is High.

Overall tree risk rating: High

Risk Mitigation Options

Target Management: The lawn below could be fenced off.

Risk Management Pruning (RMP): 1. The dead limb can be removed. 2. Major retrenchment pruning could be conducted, the area below fenced, and interpretive signage could be posted describing the benefits of wildlife trees in urban areas.

Installation of Structural Supports: Cabling of tree would reduce the load on limbs, thus reducing risk. This method only works on sound limbs, and an aerial inspection would be required to assess the likelihood of success.

Improving Site/Cultural Conditions: Air spading to remove soil from trunk flare and root crown could slightly slow basal decay, but would not eliminate already existing substantial decay.

Implementing Integrated Pest Management: N/A

Overall residual risk with RMP: Low

Overall residual risk with tree removal: none

Summary and Recommendations

The inspection revealed the oak tree to be in Fair condition with a High level of risk. The tree has significant visible defects in the trunk and branches. The targets are high profile, and occupied occasionally (lawn) to frequently (building). There is little that can be done to improve the health of this tree, but if preservation is desired, major retrenchment pruning, fencing the lawn below, and posting of signage to explain the benefits of wildlife trees to site users would reduce the risk to low. Even though these measures would reduce risk, the tree would still require routine monitoring as it will most likely continue to decline. The species is a native tree that can live for hundreds of years.

Appendix B – Photo Documentation

Photo 1. Decay in Trunk



Photo 2. Decay at branch union



Photo 3. Dead leaves persist on dying branch



Photo 4. Canopy is relatively sparse and trunk has some epicormic sprouts



Appendix B - Risk Rating & Likelihood

The technique used to define the risk of failure and likelihood of failure involves a determination within two matrices. These matrices are reproduced here from the International Society of Arboriculture data sheets for Tree Risk Assessment, 2017.

(https://www.isa-arbor.com/education/resources/BasicTreeRiskAssessmentForm_Print_2017.pdf)

Matrix I. Likelihood Matrix

Likelihood Of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix II. Risk Rating Matrix

Likelihood Of Failure & Impact	Consequences of Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low