Tree Preservation Plan- Landmark Live Oak 1520 Lawrence Street

Client:
City of Port Townsend
Laura Parsons, P.E. Civil Engineer III
David Dinkuhn, P.E. City Engineer

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Draft Date : 03/13/2026

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EXECUTIVE SUMMARY:

Planned changes to Lawrence Street and adjoining sidewalks will impact a California Live Oak, a Landmark Tree, located at 1520 Lawrence Street.

A monetary appraisal of this tree using the Reproduction Method Trunk Formula Technique indicates this tree has an arguable value range of $40,348.00 to $123,000.00.

This formula is developed and described in the CTLA (Council of Tree and Landscape Appraisers) Guide for Plant Appraisal, 10th Edition *Revised* and the 9th Edition for the smaller value.

To mitigate potential damages to the tree I propose the following actions be taken:
--- Relocate the stormwater line outside of the Critical Root Zone (CRZ), in this case roughly defined as the extent of the canopy coverage of the oak, the "dripline". Completed.
--- Adopt the Sidewalk Connection with Parallel ADA Ramps, Option 2, as provided in the schematic from SCJ Alliance dated October 2025. Completed.

RECOMMENDATIONS:

1. Conduct a complete Tree Assessment. This will include photos, measurements, TRAQ, health, and structural data. I recommend a monetary evaluation of this tree using guidelines established using the CTLA (Council of Tree and Landscape Appraisers) to ensure all involved are aware of the current monetary value of this tree as it is viewed by insurance, IRS, and judicial sectors. Completed
2. Pre- Construction -Meet with construction personnel prior to the commencement of work to ensure all are aware of the variables to maintain the tree (impacts to roots, trunk, canopy).
3. Qualified arborist personnel should be available for the duration of work being done within the Critical Root Zone, defined here as the area from the trunk to the proposed new curb location. If damage occurs to the tree roots, trunk, or branches, these should be mitigated within 24 hours.
4. Contact information should be posted in an easily accessible and visible site near the tree. This notice should also include the appraised monetary value of this tree. An arborist should be present during the time pavement removal and soil excavations are being made within the future landscape bed area adjacent the trunk, the CRZ.
5. Provide a pre-construction Tree Preservation checklist to be provided to contractors prior to commencement. Completed pages 17-18
6. Landscape Bed planning for the CRZ – As new soils are exposed by the removal of sidewalks and sod, the bare soil area should then be protected by bark mulch approximately 12" thick. When landscape construction begins this bark should be removed and replaced with 2"-4" of compost. The area should be planted in low evergreen shrubs, preferably natives tolerant of drought and dense shade.
7. Provide followup evaluations -Because construction impacts are generally not observable in retained trees for 3-15 years following a project, periodic follow-up evaluations should be made and attached to the original report. This allows the detection of subtle changes often not apparent. The first three should be annual inspections, followed by at least one more inspection after three years.

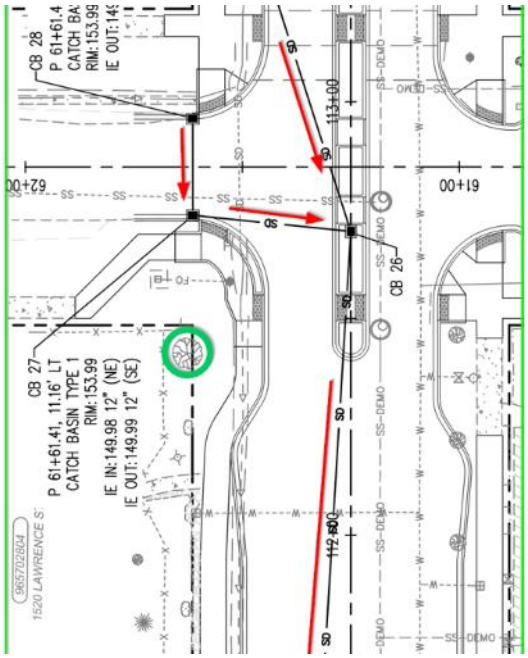
SUMMARY:

Admiralty LandCare -Richard R. Hefley, Consulting Arborist – ISA #PN-0784A – TRAQ Qualified Assessor - 360-385-2921 – PO Box 177, 101 Reinier Road - Nordland WA. 98358 - rkhefley@olypen.com

In January of 2026 I was contacted by Laura Parsons, PE Civil Engineer III, and David Dinkuhn, PE, City Engineer regarding planned reconfigurations of the intersection of Lawrence and Pierce Streets. These actions will impact a Landmark Live Oak, Quercus agrifolia Née.

In our initial discussions the action of most concern for the health and stability of the Oak was the replacement of a stormwater line currently located approximately 10' south of the trunk of the tree on an east-west axis. This action would have a tremendous impact on *the Critical Root Zone (CRZ)* of the tree. In this scenario I am defining CRZ (a malleable term) as the area between the trunk of the tree and the proposed new location of the street curbing.

The City later provided an alternative schematic stipulating the new stormwater line to veer well south of the tree as shown by the red arrows on the following diagram.



Proposed reconfiguration of stormwater lines to extend beyond the canopy coverage area of the Landmark Live Oak, the maximum distance possible given present limitations.

NORTH

This proposed redirection of the stormwater line placement is the single best available mitigation for the CRZ (Critical Root Zone) of this Landmark Live Oak.

The proposed design changes will benefit this Landmark Tree in several ways:

1. The proposed design change will increase the available soil area of the CRZ by several hundred square feet on the south and east sides of the tree. This will provide more area for the development of roots and myccorhizae (a symbiotic fungus critical to healthy root systems, especially for the genus Quercus).
2. The buttress roots near the base of the trunk that are currently heaving and fracturing the sidewalk will now be allowed to increase in size normally and pose no risk to pedestrians or damages to the tree.
3. Moving vehicular traffic away from the canopy of the tree will reduce the likelihood of tall vehicles striking lower limbs and damaging both the tree and the vehicle.

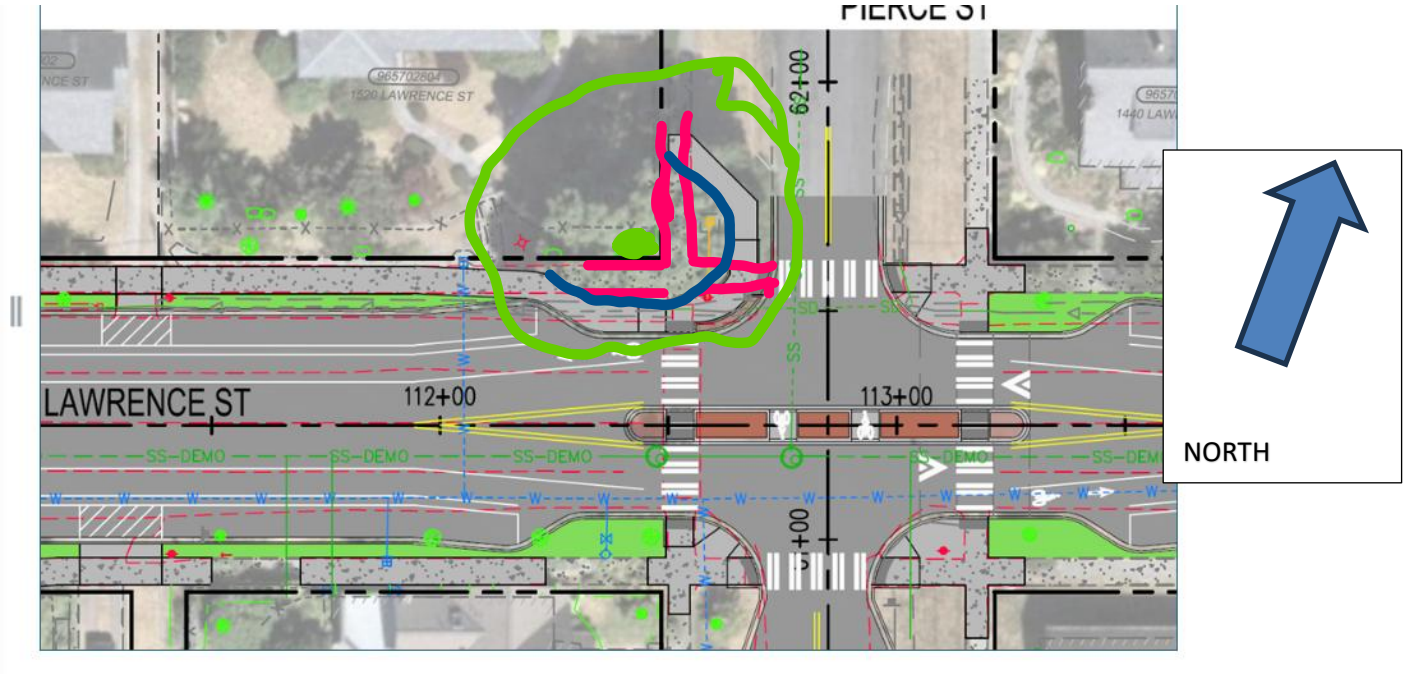
4. The creation of a buffering landscape bed around the trunk of the tree will reduce the likelihood of people damaging the trunk or compacting the soils. A well designed landscape bed will also enhance the soil in numerous ways allow for a more extensive and healthy development of the root system, all beneficial to the tree.

There are several changes that will have impacts on the tree.

A. Replacement and relocation of a utility pole to support lines currently running through the lower canopy.

B. Root disturbances associated with the removal of the existing sidewalk in particular, and road pavement.

C. Soil compaction of the new landscape bed on the south and east sides of the tree.



The current sidewalks to be removed are highlighted in solid red.
The tree trunks are the solid green circle immediately adjacent. The extent of the canopy is indicated by the irregular green around this.
The heavy blue line indicates the extent of the expanded landscape bed.

A1. The replacement of the utility pole, an action generally taken using an auger, creates a narrow hole that is very unlikely to result in measurable damage to the root system of the tree.

The soils in this area are friable and deep where I measured with a hand-held soil compaction measurement tool, easily penetrable to 24”-36” in depth. This indicates a large volume of soil for roots to be developed within and so a lessened likelihood of encountering and damaging a large lateral root with an auger.

If such a root is encountered, if the root is less than approximately 4” in diameter (i.e. not a major root) it can be simply pruned with a sharp tool and is highly unlikely to have any measurable impact on

the health of the tree.

In the unlikely event that a large root is encountered the hole should be shifted to avoid further damage. Damaged root tissue should be cleanly pruned away and allowed to “heal” naturally.

The aboveground utility lines are not indicated to be altered. These lines are in contact with a few of the lower limbs of the Oak. If limbs are required to be pruned these actions should be done under the direction of a certified arborist and in accordance with ANSI A300 pruning specifications. The limbs in contact with the utility lines comprise a small fraction of the canopy volume of this tree and should have no measurable impact if pruning is required. (No pruning is best, but if it must be done it should not measurably affect the health of this tree)

B1. Dismantling the existing pavement-

As noted in the following photo, the **existing sidewalk is** very close to the trunk of this Landmark Live Oak, resulting in fractures and heaving of the concrete due to the increasing diameter of large roots beneath the pavement.

To limit damage to the roots, trunk, lower canopy, and soil compaction when removing pavement requires a few simple precautions.

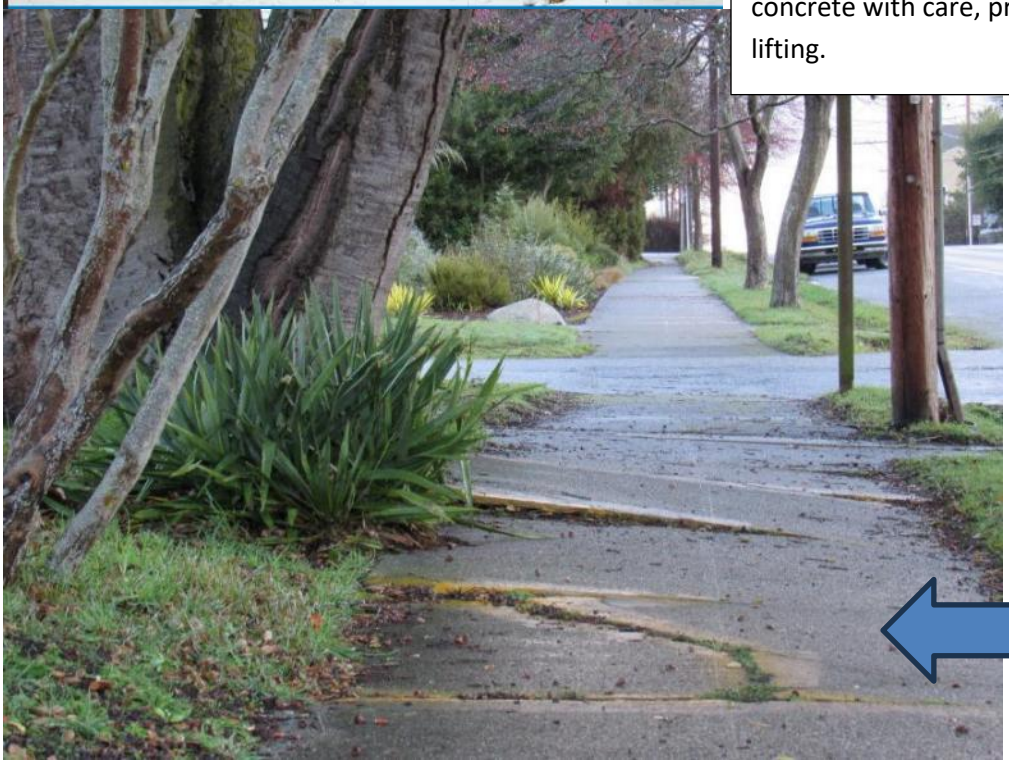
----- Protect the trunk from contact with machinery.

Padding the trunk with a thick material to prevent metal contacting the wood can be as simple as vertical 2x4s attached to the trunk at close enough intervals to prevent machinery from contact.

----- To limit soil compaction use equipment on tracks when working within the Critical Root Zone. Tracks spread weight over a large surface area and so cause less compaction.

----- Operate equipment perpendicular to the trunk (face the tree and pull/dig away from the trunk). This mitigates the likelihood of grabbing a root and fracturing it. Most roots grow radially from the trunk, like spokes.

Left -
simple trunk padding to prevent metal from contacting soft trunk wood. There are many varieties of trunk padding, but it must be sturdy enough to withstand some machinery contact but not abrasive that the contact will transfer damages to the trunk (use wood, not rebar).
Below – large buttress roots are located beneath this concrete. Remove the concrete with care, preferably by lifting.



*****While working near the trunk, lift concrete sections with care to avoid damage to large roots likely located just below the bottom of the concrete. If pavement fractures, remove by hand. Otherwise a bucket with a thumb may be more practical*. Avoid dragging the concrete sections as that may cause significant root damage to shallow large roots.*

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*****Be aware of the lower canopy limbs. Visual "reminders" like strips of bright flagging tape hanging down (12"-24") from lower limbs are good to prevent canopy damage due to "tunnel vision."

C1. New landscape bed to replace old sidewalks-

The newly exposed soil beneath the old pavement is likely to be compacted, but also full of shallow large roots.

As these soils are exposed by pavement and sod removals, it is important they then be protected by a layer of thick mulch 6"-12" deep. This will mitigate more soil compaction, protect roots, and retain moisture, all benefitting the Landmark Tree.

Soils can be de-compacted in numerous ways, the best available being the application of compost and planting the area in evergreen low shrubs and groundcovers. The growing roots of new plants are effective, though slow, in de-compacting the soil formerly covered by the pavement.

Compressed air using an Air Spade to de-compact soils is the ideal method, but these tools are difficult to obtain here.

The new landscape bed will be characterized by deep shade and very dry. The permeable soils in this specific location drain quickly.

When it is time to create the landscape bed the wood chips should be removed and replaced with 2"-4" of compost.

I recommend that once soils are prepared, the area be planted with low native shrubs tolerant of shade and drought.

Ideally you want the ground covered by an evergreen vegetation that grows 18"-24" high. This suppresses unwanted weeds (and therefore maintenance costs), mitigates stormwater (most rains occur when deciduous plants have dropped leaves, whereas evergreens will continue to disperse and transpire water), and prevents people from cutting through the beds (the shortest distance between two points is a powerful urge to curb).

A few suitable natives are Mahonia aquifolium cultivars, Sword Fern (Polystichum munitum), and Evergreen Huckleberry (Vaccinium ovatum), among others.

This Landmark Tree has a high monetary value, between 40,000 – 123000, and an even higher ecological value. It is one of only five designated Landmark Trees of Port Townsend, trees of exceptional historic and environmental value.

Mitigating unintended damages in the course of improving the growing site is critical.

ASSUMPTIONS AND LIMITING CONDITIONS:

Any legal description provided to the consultant is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations.

Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant can neither guarantee nor be responsible for the accuracy of information.

The consultant shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

Loss or alteration of any part of this report invalidates the entire report.

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Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and the inspection is limited to visual examination of accessible items without climbing, dissection, excavation, probing, or coring.

There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

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APPENDICES

Methods of Observation:

There are three levels of assessment for examining trees.

Level 1, a Limited Visual Assessment, is useful when examining a sizable number of trees to identify obvious defects. This is an effective method to determine which trees may need closer examination.

Level 2, a Basic Assessment, involves a thorough visual examination and the use of tools to perform exams short of penetrating the living tissue of the tree or climbing.

Level 3, an Advanced Assessment, comprised of using tools to penetrate the living tissue to acquire more detailed information or samples for laboratory analysis.

Typical field examinations begin with a Level 1 Assessment and then proceed as necessary until sufficient relevant information is gathered to assess the risk associated with a tree.

Field observations are limited by the tools at hand. I may request that samples be taken and sent to a plant pathology laboratory for a more complete analysis.

TRAQ (Tree Risk Assessment Method) methodology begins by noting which factors in the tree and related environment pose a real risk (there is no such thing as “no risk,” one can always slip on a cone) to a ‘target’ (person, structure etc.).
Where risks are identified, I then identify how likely the failure(s) are to impact the target.
If the target is impacted, what are the consequences?
I will cross reference these factors to determine a risk rating of Low, Moderate, High, or Imminent. Imminent requires immediate actions.

I first assess trees for risk by visually examining the foliage of the tree’s crown. I will note:

Foliage Density or Crown Density (CD) – Wherever possible, I compare the density of the foliage of the examined tree with the density of the same species in the same, or similar, environments. If local examples are not available, I use my best judgment as to what the optimal density of the foliage of a particular species should be. I express the results as a percentage, using 100% as the optimal foliage density.
In the case of deciduous trees examined during their dormancy, I will note the density and health of the past season’s growth of twigs.
Trees exhibiting signs of stress are typically less dense than healthy trees.

Foliage color – Where possible, I compare the foliage color of the examined tree with the color of the same species in similar environments. If local examples are not available, I will use my best judgment of what the optimal color of a particular species should be at that particular time and location.
Color is expressed as Good, Fair, or Poor.
Trees under stress often exhibit Poor color, usually lighter than healthy trees.

Live Crown Ratio (LCR) – The Live Crown Ratio is a measurement of the amount of living foliage of a tree expressed as a percentage of the tree's height. For example, if a tree is 100' high, and the first branches with live foliage begin at 75' high in the tree, the tree has a 25% Live Crown Ratio. Trees with 25% or less of an LCR (the ones that look like Q-Tips) generally require a closer examination.

Cones/Seeds – Cones are the seed-bearing structures of conifers. A stressed tree will sometimes produce an inordinately large crop of cones (seeds). I will compare the amount of cones to that on the same species where available, or I will use my best judgment where the same species are not available. Deciduous trees may also produce extraordinarily large amounts of seeds in response to stresses.

Epicormic Growth – This is foliage sprouts from dormant buds located along a trunk or limb and is often a sign of stress in trees. The tree is attempting to increase the amount of foliage to counteract another stress, often damage to a root, branches, or vascular system that prohibits the tree from producing the optimal amount of nutrients it requires for survival. In conifers, epicormic growth is often manifested as needles sprouting on the trunk of the tree, giving the tree an almost "furry" appearance.

Structurally Unsound Wood – Examples include multiple tops, multiple branches emanating from a single point, limbs growing at a tight angle to the trunk (typically less than 45 degrees), cracked or broken branches, and "included bark" (bark wedged between two trunks or limbs growing tightly together).
I include spike-knots in this category. This is a colloquial term used to describe a dead branch or leader, usually the result of breakage or pruning. These remaining knots have been observed by me to provide an entry for wood decay pathogens that facilitate a tree failure at that point.

Rot – I look for signs of rot such as fungal growths, cracks, holes, swelling and excessive bleeding sap. This may extend to the excavation of soil around the roots, or examination of areas beneath bark for signs of disease.

I may strike the trunk with a mallet to listen for the sounds of hollow or pithy wood.
I may drill into the trunk of a tree if a significant hollow space is suspected, to confirm the amount of solid and unsound wood.
I may take a core sample of the tree's wood using a 1/8" increment borer.

I will visually examine the Critical Root Zone (CRZ) of the tree. This is generally defined as a circle around the trunk of the tree, the radius in feet being equal to the diameter of the trunk in inches (a 10" diameter tree will have a CRZ with a radius of 10', or a 20' diameter).

I measure the trees'diameter at approximately 4.5' above the ground level.
I measure the trees approximate height using a clinometer where practical, or a visual approximation if necessary.

I prefer to interview the owner or responsible person in charge of the project to ascertain the construction history of the site.
I will look for the evidence of other tree failures in the immediate vicinity. This can sometimes help in confirming the presence of root rotting pathogens.

I may mark examined trees with a numbered aluminum tags or flagging tape.

The history of the site is often the most important information gleaned from a field observation. To know when a site was developed, when and where trenching or subsequent construction has taken place, and to learn of potential new uses for the property are all crucial to forming a long-term plan to retain and improve the health of trees and shrubs on the site.

When I am working with native stands dominated by mature conifers, it is useful to note the crown classification of individual trees.
-Dominant and Co-Dominant trees have crowns that extend above all other vegetation. These are often, but not always, the strongest trees.
-Intermediate trees have crowns which extend into the Dominant crown category but are still lower and so receive less light.
-Suppressed trees are overtopped by adjacent trees. Unless these suppressed trees are young and actively growing trees accustomed to shady conditions, such as Western Hemlock, Red Cedar or Vine Maple, these trees typically have short life spans.

ISA Basic Tree Risk Assessment Form

Client City of Port Townsend Date 03/03/2026 Time

Address/Tree location 1520 Lawrence Street Tree no. 01 Sheet 01 of 02

Tree species Quercus agrifolia Nee dbh 90" (3 trunks) Height 70' Crown spread dia. 70'

Assessor(s) Richard Hefley Tools used visual **Time frame** 5 years

Target Assessment

Target number	Target description	Target protection	Target zone: Target within drip line	Target zone: Target within 1 x Ht.	Target zone: Target within 1.5 x Ht.	Occupancy rate (1 – rare, 2 – occasional, 3 – frequent, 4 – constant)	Practical to move target?	Restriction practical?
1	Residence at 1520 Lawrence Street	none		X		4	no	no
2	Pedestrian and vehicular traffic Lawrence and Pierce Streets	none	X			3	no	no
3								
4								

Site Factors

History of failures none **Topography** Flat ☑ Slope ☐ _____% **Aspect** West

Site changes None ■ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe

Soil conditions Limited volume ☐ Saturated ☐ Shallow ☐ Compacted ☐ Pavement over roots ■ 25 % Describe Roads and sidewalks

Prevailing wind direction SSW **Common weather** Strong winds ■ Ice ☐ Snow ■ Heavy rain ■ Describe

Tree Health and Species Profile

Vigor Low ☐ Normal ■ High ☐ **Foliage** None (seasonal) ☐ None (dead) ☐ Normal 70 % Chlorotic ____% Necrotic 30 %

Pests/Biotic **Abiotic**

Species failure profile Branches ☑ Trunk ☑ Roots ☐ Describe

Load Factors

Wind exposure Protected ☐ Partial ☐ Full ■ Wind funneling ☐ **Relative crown size** Small ☐ Medium ☐ Large ■

Crown density Sparse ☐ Normal ■ Dense ☐ **Interior branches** Few ☐ Normal ■ Dense ☐ **Vines/Mistletoe/Moss** ☐

Recent or expected change in load factors none

Tree Defects and Conditions Affecting the Likelihood of Failure

— Crown and Branches —

Unbalanced crown ☐ LCR 85 %

Dead twigs/branches ☐ ____% overall Max. dia.

Broken/Hangers Number Max. dia.

Over-extended branches ☐

Pruning history

Crown cleaned ☐ Thinned ☐ Raised ☐

Reduced ☑ Topped ☐ Lion-tailed ☐

Flush cuts ☐ Other

light crown reduction approximately 2 years prior

Part Size Fall Distance

Load on defect N/A ☐ Minor ☐ Moderate ☐ Significant ☑

Likelihood of failure Improbable ☐ Possible ☐ Probable ☑ Imminent ☐

Cracks ☐ Lightning damage ☐

Codominant ■ Included bark ☐

Weak attachments ☐ Cavity/Nest hole ____% circ.

Previous branch failures ☐ Similar branches present ☐

Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐

Conks ☐ Heartwood decay ☐

Response growth

Condition(s) of concern

Part Size Fall Distance 70'

Load on defect N/A ☐ Minor ■ Moderate ☐ Significant ☐

Likelihood of failure Improbable ☐ Possible ■ Probable ☐ Imminent ☐

— Trunk —

Dead/Missing bark ☐ Abnormal bark texture/color ☐

Codominant stems ■ Included bark ☐ Cracks ☐

Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Sap ooze ☐

Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐

Cavity/Nest hole ____% circ. Depth Poor taper ☐

Lean 5 ° Corrected?

Response growth

Condition(s) of concern falling into direction of lean

Part Size 30' average Fall Distance 70'

Load on defect N/A ☐ Minor ■ Moderate ☐ Significant ☑

Likelihood of failure Improbable ☐ Possible ■ Probable ☑ Imminent ☐

— Roots and Root Collar —

Collar buried/Not visible ☐ Depth Stem girdling ☐

Dead ☐ Decay ☐ Conks/Mushrooms ☐

Ooze ☐ Cavity ☐ ____% circ.

Cracks ☐ Cut/Damaged roots ☐ Distance from trunk

Root plate lifting ☐ Soil weakness ☐

Response growth

Condition(s) of concern Roots heaving pavement

Part Size Fall Distance

Load on defect N/A ☐ Minor ☐ Moderate ☐ Significant ■

Likelihood of failure Improbable ☐ Possible ☑ Probable ☐ Imminent ■

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Risk Categorization

Target (Target number or description)	Tree part	Condition(s) of concern	Likelihood: Failure: Improbable	Failure: Possible	Failure: Probable	Failure: Imminent	Impact: Very low	Impact: Low	Impact: Medium	Impact: High	Failure & Impact (from Matrix 1): Unlikely	Somewhat	Likely	Very likely	Consequences: Negligible	Minor	Significant	Severe	Risk rating (from Matrix 2)
01 Residence	Trunk	Breaking at juncture 2' AGL		X				X			X							X	LOW
02 Right of Ways				X						X		X					X		MOD
01	Roots	Pavement damage/ tripping hazards	X																LOW
02						X				X				X			X		HIGH
01	Branches	Dropping onto pedestrians or property	X																LOW
02				X				X			X					X			LOW

Regarding MODERATE risk for trunk failure -while the Risk is technically greater than Low, it is still at the "low" end of Moderate. There are no signs of impending failure at the multiple trunks' juncture at 2' above ground level, though there is significant stress from the weight on this point. Cabling or bracing will mitigate this stress. Pruning (weight removal) will also help, but not as much. The current shape of the canopy is ideal for mitigating wind and changes to shape may result in excess pressure being shifted to less suitable junctures, increasing the likelihood of failure.

Matrix 1. Likelihood matrix.

Likelihood of Failure	Likelihood of Impact: 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 2. 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

Notes, explanations, descriptions

Trunk(s) - currently no sign of impending failure.
Roots - currently heaving pavement
Branches - currently no issues - prune as needed

Mitigation options

1. Trunk(s) failure mitigated with cables or bracing - canopy reduction to reduce weight — **Residual risk** LOW
2. Roots - Move sidewalks - Root "Canals" under pavement — **Residual risk** LOW
3. Branches - currently no issues - prune as needed — **Residual risk** LOW
4. _____ — **Residual risk** _____

Overall tree risk rating Low ☑ Moderate ☐ High ■ Extreme ☐

Overall residual risk None ☐ Low ■ Moderate ☐ High ☐ Extreme ☐ **Recommended inspection interval** Following development

Data ☑ Final ■ Preliminary **Advanced assessment needed** ☐ No ■ Yes-Type/Reason Reassess following planned construction

Inspection limitations ■ None ☐ Visibility ☐ Access ☐ Vines ☐ Root collar buried Describe _____

This datasheet was produced by the International Society of Arboriculture (ISA) — 2017

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Reproduction Method
Trunk Formula Technique

Client name: City of Port Townsend Date: 03/13/2026 Case #: Tree #??-01

Phone: _____ E-mail: _____

Address: _____

Subject tree

Species: Quercus agrifolia Nee

1. Trunk diameter* (D): 90" @ 4.5'
2. Cross-sectional area (line 1)² × 0.7854: 6362 in²
3. Condition rating: 73 %
   - Health: Good 80%
   - Structure: Fair 60% (3 codominant trunks)
   - Form: Good 80%
4. Functional limitations: Moderate - canopy over street, root under pavement: 60 %
5. External limitations: Moderate - City and Utility ROWs: 60 %

Replacement tree

Species: Quercus robur (located JB Nursery - Woodinville WA

6. Trunk diameter* (D): 2" (x2=4") @ 4.5'
7. Cross-sectional area (line 6)² × 0.7854: 13 in²
8. Replacement tree cost Source: 410. x 2: $820

Calculations

9. Unit tree cost (line 8 / line 7 or RPAC): $63.0
10. Basic reproduction cost (line 2 × line 9): $401000.0
11. Depreciated reproduction cost^ (line 10 × line 3 × line 4 × line 5): $105,000.0

A second valuation was made using the Adjusted Trunk Formula from the 9th Edition of the Guide for Plant Appraisal.
This adjustment is applied to very large diameter trees of 30”DBH and greater or multiple trunk trees that equal a large diameter.
Using this equation Line 11 has a tree value of $40,348.00.

I submit this tree to have an arguable value range of $40,348 – $105,000.

* Diameter and cross-sectional area may be replaced with plant area, volume, or height as appropriate.
^ Apply depreciation if it is appropriate for the assignment.

Tree Value Appraisal Notes:

Depreciation Factors are as follows:

Condition Rating of 73% based on the following-
- --- Health is Good (80%) see table 4.1, page 44, 10th edition revised
- --- Structure is Fair – (60%) see table 4.1
- --- Form is Good (80%) see table 4.1
- --- These 3 comprise an average Condition Rating of 73%

Functional Limitations are Moderate (60%) table 5.3, page 63. 10th edition revised
External Limitations are Moderate (60%) table 5.4, page 65, 10th edition revised.

Replacement Tree costs are based on the cost of one Quercus rubra measuring 2" caliper. This tree is located at JB Nursery Wholesale in Woodinville WA. The tree on site is $410.
This was multiplied by 2 to reach the standard desired replacement tree size of 4" caliper. No 4" caliper oaks were available in several of the common wholesale nurseries in WA State, and no Quercus agrifolia were available, hence the replacement choice of Q. rubra.

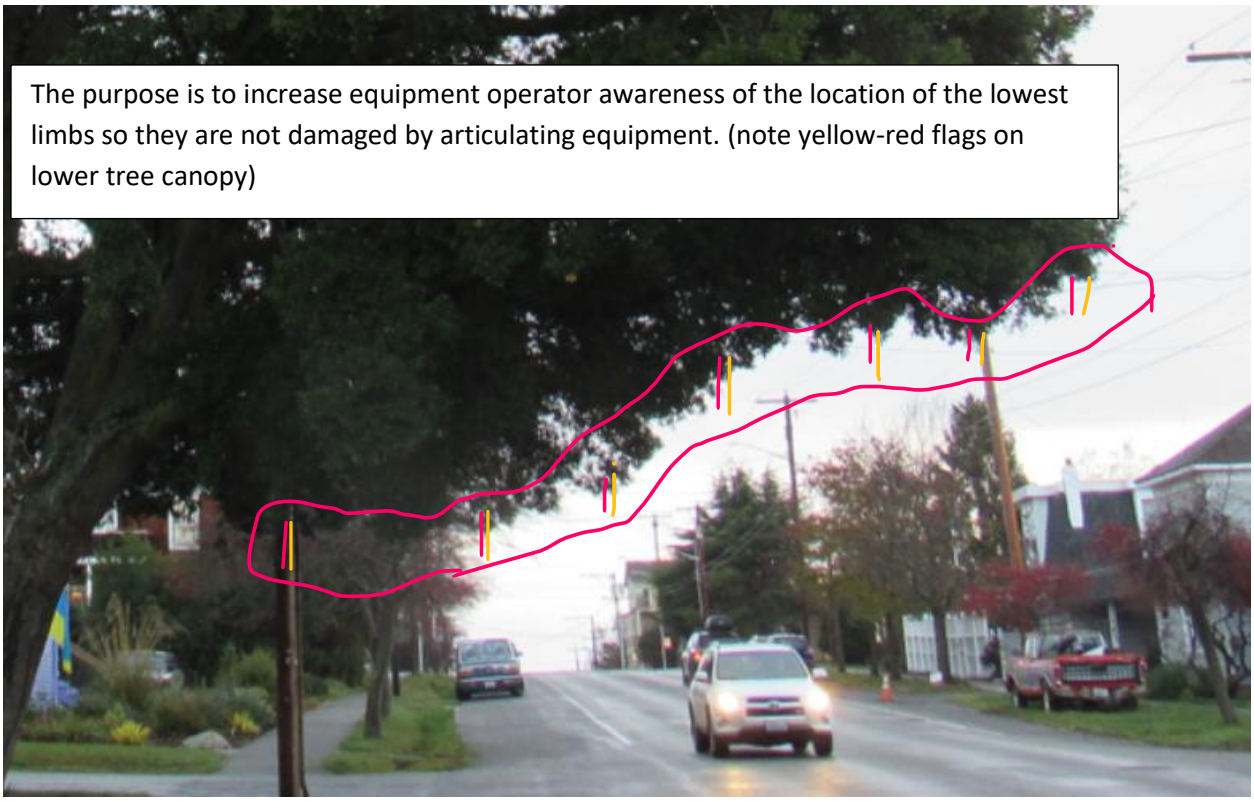
Adjusted Trunk Area table is from the 9th edition Guide for Plant Appraisal, table 4.4 page 39.

Check List- this applies to pre-and active construction taking place.

1. **Establish a certified arborist to remain on-call during construction. Have contact information posted near the trunk of the tree. On the same placard note this tree has an appraised value of $40, 348.00.**

2. **Establish a physical barrier on the tree trunks from ground level to at least 8' above ground to prevent equipment contacting and damaging the trunks.**

3. **Attach high-visibility tape cut to sections on lower branches from the perimeter of the dripline to the interior.**



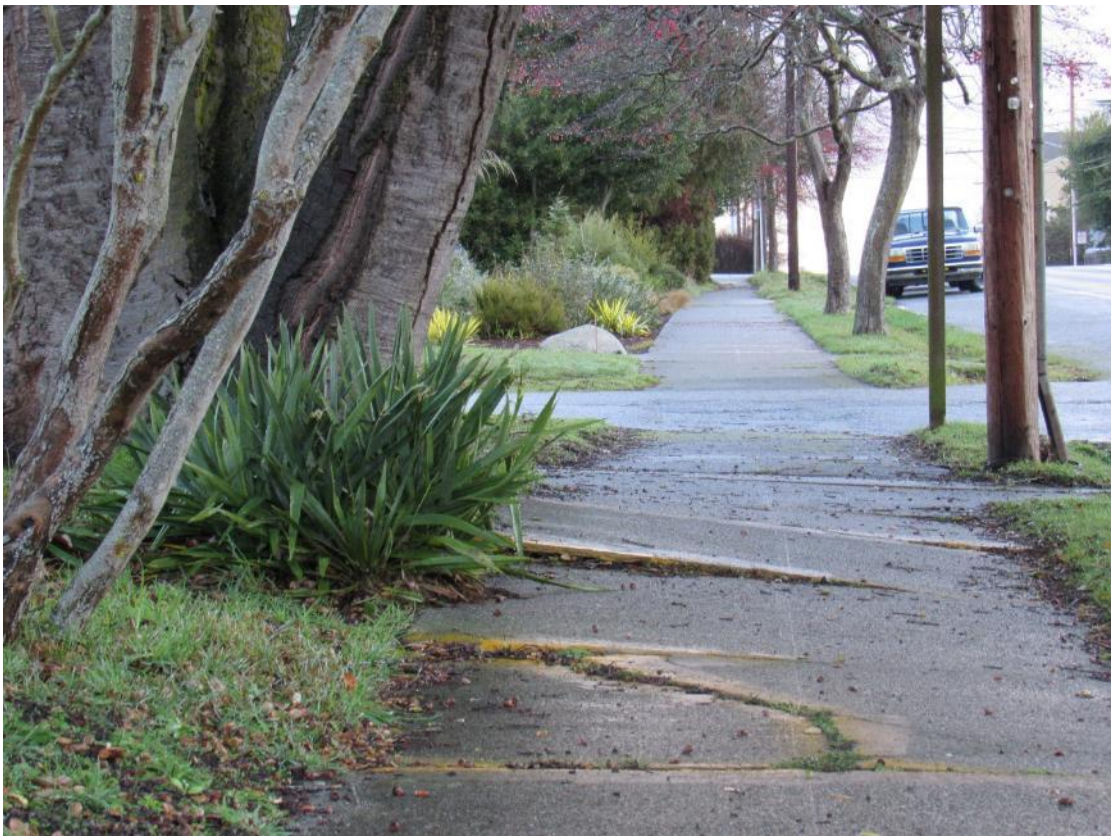
The purpose is to increase equipment operator awareness of the location of the lowest limbs so they are not damaged by articulating equipment. (note yellow-red flags on lower tree canopy)

4. **When digging between the trunk of the tree and planned curb location, operate booms perpendicular to the tree (face the tree and pull away from the trunk)**

The purpose of this is so significant roots (4" in diameter and larger) are not torn in a twisting motion that can cause fractures that extend far beyond the point of initial contact and towards the trunk.

5. **Where roots larger than approx. 1" diameter are encountered they should be pruned using a sharp cutting tool, leaving no jagged edges. Use bypass loppers or an arborist saw. Do not paint sealer on the cuts.**

6. **Use special care when removing the sections of sidewalk pavement parallel to Lawrence Street. There are likely large buttress roots immediately below the pavement which should not be damaged by equipment, dragging, or dropping concrete sections onto exposed roots. It is recommended that an arborist be on site during this portion of the project.**



Large shallow roots are likely near the surface below this section of sidewalk. Extreme care should be taken to not damage roots with equipment. Hand removals are best. Having an arborist on site to mitigate potential root damage would be wise.