

Tree Assessment

Port of Port Townsend
Port Townsend Brewery building & State Hwy 20

Prepared For:
Larry Crockett
Executive Director
375 Hudson St.
Port Townsend, WA 98368

March 11, 2013

Prepared By:
Katy Bigelow
PNW ISA member # PN-6039A
PNW Certified Tree Risk Assessor # 199
Registered Consulting Arborist® # 490



Copy files



Katy Bigelow
206.351.1375
arboristkaty@gmail.com

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Larry Crockett
Executive Director
375 Hudson St.
Port Townsend, WA 98368

Dear Mr. Crockett:

Thank you for asking me to evaluate the trees growing along State Highway 20 by the entrance for the Port of Port Townsend. I completed my assessment of these trees on March 8, 2013.

To assess the trees addressed in this letter I combined my field experience and education with current accepted practices as defined by the American National Standards Institute (ANSI) and the International Society of Arboriculture (ISA).

The tools I use to make an assessment are limited to a mallet, binoculars, compass, trowel and laser pointer unless otherwise noted. A visual tree assessment and other methods are only conclusive for the day of inspection and do not guarantee that conditions will remain the same in the future.

I was asked to determine whether roots growing from five Poplar (*Populus nigra* 'Italica') trees growing along State Highway 20 near the entrance to the Port of Port Townsend were damaging the Port Townsend brewery building and, to provide management options for future care.

All five Poplars range between 15 and 30 inches in diameter and reach upwards of seventy feet tall. They grow between the Port Townsend Brewery building and State Highway 20 on the north side of the brewery building ([Photo 1](#)). Based on historic aerial photographs viewed by Larry Crockett, they are at least over 50 years old.

The tree canopies have been pruned on the north and south sides to keep foliage from growing into high tension power and communication lines extending east to west. There are no remarkable defects in the upper canopies of any of the trees and pruning appears to have been completed in accordance with ANSI 300 pruning standards. The trunks grow with typical architecture for the species and sounding indicated that some of the lower trunk areas could have center rot.



According to Larry Crockett, the soil the trees are growing in is a mix of sand, till and dredging fill. Most of the roots from these trees are likely growing in the top two feet of soil. Surface roots growing close to the base of the tree trunks have mower damage.

Recently the brewery upgraded their building structure and floor to house new brewing equipment. During development, workers encountered tree roots that grew under the buildings foundation and were associated with areas of cracking in the flooring. Roots that were found were cut back to the north edge of the building with a pick.

The area of the brewery building that has not been renovated has more cracks in the flooring in the main tasting room and in the bathroom. The crack in the floor of the tasting room extends north to south the entire length of the room and extends outside of the building into the asphalt (Photo 2).

I used the ISA hazard rating method to determine the relative level of risk these trees posed at the time of my evaluation. I evaluated them as a clump as they were mainly in similar condition with no outstanding defects on any single tree. While this method could be considered somewhat subjective to the assessor's opinion, conclusions are based on visible signs and symptoms of decline or hazard. Recommendations are based on my professional opinion of how each tree would affect a target in the event of a whole or partial tree failure.

5 Italian Poplars

3	+	1-2	+	4	=	8-9
Failure Potential		Size of Part		Target Rating		Hazard Rating

Failure potential: 1-5 points (1 - low, 2 - moderate, 3 - moderately high, 4 - high, 5 - severe)

Size of part: 1-3 points (1 - $\leq 4''$, 2 = $4''$ - 20'', 3 = $>20''$)

Target rating: 1-4 points (: 1 – low, 2 – moderate, 3 – moderately high, 4 – high)

Review the attachment Risk Rating and Action Thresholds for general recommendations for all rating scores.

At the time of my assessment, branches or small trunks breaking out from the upper and mid canopies are the pieces of the trees most likely to fail. Different sizes of branches and trunks are denoted as "1-2" in the table. Failing pieces have many targets – vehicle and pedestrian traffic, high tension power and communication lines and an often occupied building. While there is a moderate risk of these parts breaking out in normal conditions, this area of Port Townsend is known to have higher than average wind speeds during storms and gusty conditions.

Italian poplar trees are commonly known as relatively short lived trees with aggressive roots that seek out cool, moisture rich areas. Suckers quickly and abundantly grow along roots paths or near the base of trees that have been cut down close to grade level.

I believe the damage to the brewery building flooring was caused by the Poplar tree roots. Without check, roots will likely continue to seek out the damp and cool conditions under the older concrete flooring and the existing cracks in the floors will expand.

While the trees overall pose a moderate risk to targets, it is my professional opinion that the likely potential for continued damage to the brewery building floor overrides the other risk possibilities. Damage to the building right now is potentially a more costly fix than damage that may occur from falling smaller tree pieces to outside targets.

A few options are available for root management to mitigate root growth under the building:

- 1) Use an air spade to clear a ditch on the northern side of the building to expose roots growing toward the building. Once exposed, use a sharp tool to give the roots a clean cut edge at least six inches away from the building. Install root barrier (such as a high density polyethylene plastic sheet) along the length of the building to prevent roots from growing back underneath.
 - a. Air spading exposes roots without damaging them. This process also allows the roots to be visually documented, to help make a better estimation of how much overall root area will be removed and how this will affect a trees vigor.

- 2) Use small heavy machinery to dig a trench along the north side of the building. Once the trench is completed, cut the edge of ripped roots with a sharp tool to give the roots a clean cut. Install root barrier (such as a high density polyethylene plastic sheet) along the length of the building to prevent roots from growing back underneath.
 - a. This method is less preferred as the potential to cause root fracturing beyond the ditch edge is high and the soil around roots can become compacted by the weight of small machinery.

Both of these options would be a temporary solution to address the most current issue these trees pose to nearby targets. As they age, the potential for these trees to develop defects in their above ground parts will increase and will need management.

I strongly recommend developing a plan for removing these trees and replanting with more appropriate species. A variety of species that will not interfere long term with power lines or the building infrastructure can grow in the existing soils. If the Poplars are removed, their stumps should be ground out to prevent sucker re-growth.

If the trees remain, start a photo-journal to track of them over time. If possible, take photos of the canopies from angles that captures them compared to something static (like a building wall). This will help determine if there has been any movement or changes over time. In addition to taking pictures of the whole tree, zoom in for a picture of the top fifteen percent of the tree (the crown). Date the photos and take the same ones in six months time unless you think action is required in the meantime.

Decline in vigor can present itself with indicators such as: dying crowns, thinning crowns, “weeping” crowns (bending over), excessive broken branches, excessive leaf drop, yellowing foliage or soil cracking around the base of the trunk. If you think you see any of these symptoms do not hesitate to call for a follow-up assessment.

Thank you very much for calling me for your arboricultural concerns.



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Photos



Photo 1: Location of the Poplars relative to the brewery building (blue) and State Hwy 20.





Photo 2: Crack in the brewery's tasting room floor running north south and extending into the pavement to the south, outside the building.

Risk Rating and Action Thresholds

Risk Rating	Risk Category	Interpretation & Implications
3	Low 1	<i>Insignificant – no concern at all.</i>
4	Low 2	<i>Insignificant – very minor issues</i>
5	Low 3	<i>Insignificant – minor issues not of concern for many years yet</i>
6	Moderate 1	<i>Some issues but nothing that is likely to cause any problems for another 10 years or more</i>
7	Moderate 2	<i>Well defined issues – retain and monitor. Not expected to be a problem for at least another 5 – 10 years</i>
8	Moderate 3	<i>Well-defined issues – retain and monitor. Not expected to be a problem for at least another 1 – 5 years.</i>
9	High 1	<i>The assessed issues have now become very clear. The tree can still reasonable be retained as it is not likely to fall apart right away, but it must now be monitored annually.</i>
10	High 2	<i>The assessed issues have now become very clear. The probability of failure is now getting serious, or the target rating and/or site context have changed such that mitigation measures should now be on a schedule with a clearly defined timeline for action.</i>
11	High 3	<i>The tree or a part of it has reached a stage where it could fail at any time. Action to mitigate the risk is required within weeks rather than months.</i>
12	Extreme	<i>This tree, or part of it, is in the process of failing. Immediate action is required. All other less significant tree work should be suspended, and roads or work areas should be closed off until the risk issues have been mitigated.</i>

Options for Mitigation of Risk Trees include:

Remove the risk altogether if possible by cutting off one or more branches, removing dead wood, or possibly removing the entire tree. Extreme risk situations should be closed off until the risk is abated.

Modify the risk of failure probability. In some cases it may be possible to reduce the probability of failure by adding mechanical support in the form of cables braces or props.

Modify the risk rating by moving the target. Risk ratings can sometimes be lowered by moving the target so that there is a much lower probability of the defective part striking anything. Moving the target should generally be seen as an interim measure.

Retain and monitor. This approach is used where some defects have been noted but they are not yet serious and the present risk level is only moderate.

Reference:

Dunster & Associates Environmental Consultants Ltd. Assessing Trees in Urban Areas and the Urban-Rural Interface, US Release 1.0. Silverton: Pacific Northwest Chapter ISA, 2006

Assumptions, Limiting Conditions and General Waiver

I, Katy Bigelow, certify that:

I have personally inspected the tree(s) and or the property referred to in this report;

I have no current or prospective financial or other interest in the vegetation or the property which is the subject of this report and have no personal interest or bias in favor of or against any of the involved parties or their respective position(s), if any;

The analysis, opinions and conclusions stated herein are the product of my independent professional judgment and based on current scientific procedures and facts, and the foregoing report was prepared according to commercially reasonable and generally accepted arboricultural standards and practices for the Pacific Northwest and Puget Sound areas;

The information included in this report covers only those trees that were examined and reflects the condition of the trees as of the time and date of inspection;

This report and the opinions expressed herein are not intended, nor should they be construed, as any type of warranty or guarantee regarding the condition of the subject trees in the future;

Covenants, Conditions, and Restrictions (“CC&Rs”) may restrict the number, type and height of vegetation on the subject property, and I have made no investigation regarding whether the property is subject to such CC&Rs; and

To the best of my knowledge and belief, all statements and information in this report are true and correct and information provided by others is assumed to be true and correct.

I am not an attorney or engineer. This report does not cover these areas of expertise and represents advice only of arboricultural nature. Without limiting the generality of the preceding sentence, it is specifically understood that nothing contained in this report is intended as legal advice, or advice or opinions regarding soil stability or zoning laws, and this report should not be relied upon to take the place of such advice.



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