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Appraisals ~ Site Planning ~ Urban Landscape Design and Management  
Environmental Education ~ Environmental Restoration ~ Risk Assessments

4/10/2023

Tacoma Community College  
Clay Krauss, Interim Director of Facilities & Capital Projects  
6501 South 19<sup>th</sup> Street  
Tacoma, WA 98466

RE: Tacoma Community College Gig Harbor Campus Tree Assessment

Mr. Krauss:

This report presents my findings from a recent assessment within the Tacoma Community College Gig Harbor campus at 3993 Hunt Street NW. Per our previous discussions, my scope of work includes:

- An assessment of the trees along the route of a new fence line to determine any need for removals and/or protection measures;
- An assessment of the trees located within the new fenced area and;
- A risk assessment of the trees located along the western perimeter of the property to identify any risks or recommended removals or pruning.

I visited the site and met with you on February 28, 2023.

## **Tree Risk Assessment Methodology**

The tree risk assessment methodology used for this report was developed by the International Society of Arboriculture in 2013. It replaces the original method adopted in 2011.

Tree risk assessment can be conducted at different levels of intensity, each employing varying methods and providing the client with varied options of reporting and recommendations. The level selected should be appropriate for the assignment.

The ANSI standard for risk assessment and ISA's *Best Management Practices: Tree Risk Assessment* defines three levels of tree risk assessment:

- Level 1: Limited visual
- Level 2: Basic
- Level 3: Advanced

Level 1 assessment involves a visual assessment of an individual tree or populations of trees near specified targets, conducted from a specified perspective in order to identify certain obvious defects or specified conditions. A limited visual assessment typically focuses on identifying trees with *imminent* and/ or *probable* likelihood of failure.

A Level 2 or basic assessment is the standard assessment performed by arborists in response to most private client requests for tree risk assessments. It consists of a detailed visual inspection of a tree and its surrounding site and a synthesis of the information collected. A basic assessment requires walking completely around the tree – looking at the site, buttress roots, trunk and branches. Looking at the tree from some distance away, as well as close up, to consider crown shape and surroundings.

Level 3 is an advanced assessment and it is performed to provide detailed information about specific tree parts, defects, targets, or site conditions. It may be in conjunction with or after a basic assessment if additional information is needed and the client approves the additional service. Specialized equipment, data collection and analysis, and/or expertise are usually required for advanced assessments. These assessments are, therefore, generally more time intensive and more expensive.

After determining the likelihood of failure and the likelihood of impacting a target, the combined likelihood of a failure impacting a target can be categorized. Matrix 1 can be used as a guide in relating these likelihood factors within a given time frame. The resulting terms (unlikely, somewhat likely, likely, very likely) are defined by their use within the table and are used to represent this combination of occurrences in Matrix 2.

**Matrix 1. Likelihood of Failure**

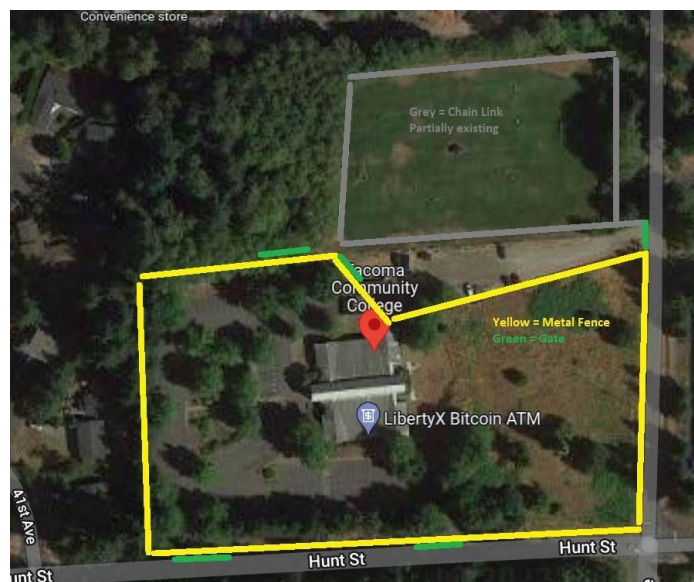
Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
<b>Imminent</b>	Unlikely	Unlikely	Likely	Very likely
<b>Probable</b>	Unlikely	Unlikely	Somewhat likely	Likely
<b>Possible</b>	Unlikely	Unlikely	Unlikely	Somewhat likely
<b>Improbable</b>	Unlikely	Unlikely	Unlikely	Unlikely

**Matrix 2. Risk Rating**

Likelihood of Failure and Impact	Consequences of Failure			
	Negligible	Minor	Significant	Severe
<b>Very likely</b>	Low	Moderate	High	Extreme
<b>Likely</b>	Low	Moderate	High	High
<b>Somewhat likely</b>	Low	Low	Moderate	Moderate
<b>Unlikely</b>	Low	Low	Low	Low

**Assessment along New Fence Line**

An assessment was conducted along the approximate new fence line as indicated on the provided aerial below. Based on this information and the spacing of the trees, no obvious conflicts were identified. However, besides stating the obvious of not placing any of the fence posts near the trunk a tree, without having the exact location staked out or knowing the intent of the contractor, it is difficult to make a final determination. Therefore, I would highly recommend that the location be staked and then either myself or a TCC representative walk the line with the contractor prior to any work, to review any potential conflicts and discuss ways to minimize any encroachment. This may include root pruning guidelines or a slight adjustment in the fencing location. Not only is the actual fence placement important but also the type of equipment to be used and where supplies will be stored.

**Approximate Location of New Fence**

### **Assessment of Trees within New Fenced Area**

Overall, the trees within the area to be fenced are in good condition and only one tree near the building entrance was identified as of concern. This tree has been marked with an aluminum tag #2 and is located on the attached aerial.

**Tree #2:** London Plain Tree, 21" DBH. Approximate height of 60' and 30% live canopy ratio. This tree is in overall fair condition with no signs of decay or disease. The main trunk divides into co-dominant stems at 10' above grade with 2' of inclusion at the union. There are no signs of active separation but the weight at the union is concerning. Potential target is the entrance at 7'. Currently this tree is considered a "Moderate" risk.

**Recommendation:** I recommend that the co-dominant stem growing over the entrance be pruned to reduce the end weight. Approximately 8-10' of the upper stem should be removed, down to a lateral branch that measures 1/3 –1/2 the diameter of the section being removed (see photo). This pruning will lower the risk rating to "Low".

#### **Recommended Pruning of Tree #2**



### Risk Assessment along Western Perimeter

Level 2 risk assessments were conducted on all trees along the western perimeter with a potential target. A total of six trees were identified as of concern. Table 3 presents my complete findings and recommendations for these six trees. The approximate locations are noted on the included aerial and they have been marked with an aluminum tag indicating the corresponding ID#. Those trees recommended for removal have also been flagged with orange ribbon.

**Table 3. Complete Risk Assessment Summary**

Tree ID#	Species	DBH (in)	Height (ft)	Live Canopy Ratio (%)	Target	Distance to Target	Condition	Comments	Risk Rating	Recommendations
1	Douglas Fir	34	120	20	Power lines, house, street	10', 26', 40'	Fair	Previously topped at 40' likely for utility line clearance. Co-dominant leaders above this point with 2' of inclusion Trunk soundings did not indicate internal stem decay but difficult to fully assess due to ivy.	Moderate	Retain but monitor. Cut ivy at base.
3	Western Red Cedar	11	40	0	Shed, fence	12', 10'	Dead	Two stems measuring 6" & 9".	Moderate	Remove tree
4	Western Red Cedar	11	45	0	Fence, yard	8', 8'	Dead		Moderate	Remove tree
5	Red Alder	21	40	0	Yard, swing set	12', 30'	Dead	Covered in ivy and lean toward adjacent property.	Moderate	Remove tree
6	Red Alder	32	65	25	Adjacent yards & houses	2', 10', 25', 36'	Poor	Three stems measuring 20", 18" & 18". Inclusion between the stems measures 3-4' with no signs of active separation. The 18" stem on the NW has decay at 20' associated with a past failure. All stems lean toward adjacent properties.	High	Remove tree
7	Red Alder	36	50	15	Yard	25'	Poor	Three stems measuring 22", 24" & 15". The 22" stem that leans to the west is dead and could reach yard. The 22" stem is tagged.	Moderate	Remove dead 22" stem.

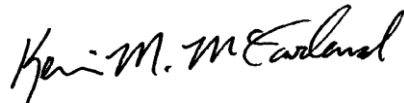
## Comments

I am recommending the removal of four trees and the pruning of two. All pruning should follow ANSI A300 (Part 1) 2017 Pruning Standards with no tearing, angled cuts or remaining stubs.

I would encourage the College to establish communication with the fencing contractor prior to any work so that unnecessary impacts to adjacent trees can be avoided.

Please contact me if you should have questions.

Professionally Submitted,



Kevin M. McFarland, Principal  
 ISA Certified Arborist PN-0373 & ISA Tree Risk Assessment Qualified  
 Sound Urban Forestry, LLC  
 P.O. Box 489  
 Tahuya, WA 98588

## References

Dunster, Dr, Julian et al. 2013. *Tree Risk Assessment Manual*. International Society of Arboriculture. Champaign, IL.

Mattheck, C. & Brelor, H (1998). *The body language of trees. A handbook for failure Analysis*. Research for Amenity Trees No. 4. The Stationary Office, London.

Smiley, E. Thomas, Nelda Matheny and Sharon Lilly. 2011. *Best Management Practices – Tree Risk Assessment*. International Society of Arboriculture. Champaign, IL



**Locations of Identified Risk Trees**



### **Assumptions and Limitations of Tree Risk Assessment**

1. Tree risk assessment is limited in scope to the specific risks(s) of interest, and does not include any and all risks.
2. Tree risk assessment considers significant known and/or assigned targets and visible or detectable tree conditions.
3. Tree risk assessments represent the condition of the tree and site at the time of inspection.
4. Only those trees specified in the scope of work were assessed, and assessments were performed within the limitations specified.
5. Any tree, whether it has visible weaknesses or not, will fail if the forces applied exceed the strength of the tree or its parts.
6. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others. Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable.
7. Loss or alteration of any part of this report invalidates the entire report.
8. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of Sound Urban Forestry, LLC.
9. Neither all or any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of Sound Urban Forestry, LLC – particularly as to the value considerations, identity of Sound Urban Forestry, LLC, or any reference to any professional society or to any initialed designation conferred upon Sound Urban Forestry, LLC as stated in its qualifications.
10. This report and any values expressed herein represent the opinion of Sound Urban Forestry, LLC and the fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence neither of a subsequent event, nor upon any finding to be reported.
11. Diagrams, graphs, photographs and sketches in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
12. Sound Urban Forestry, LLC shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made.
13. 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 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, drilling or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the tree or other plant or property in question may not arise in the future.
14. The time frame for risk categorization should not be considered a “guarantee period” for the risk assessment.