



# Greenforest Incorporated



## Consulting Arborist

### MEMORANDUM

TO: Mike Walsh  
Terrene Ventures  
2630 116th Ave NE, Suite 200  
Bellevue, WA 98004

REFERENCE: Larkin Tree Transplanting

DATE: May 9, 2018

**Favero Greenforest**

Digitally signed by Favero Greenforest  
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Date: 2018.05.09 18:07:47 -07'00'

PREPARED BY: Favero Greenforest, ISA Certified Arborist # PN -0143A  
ISA Tree Risk Assessment Qualified  
ASCA Registered Consulting Arborist® #379

I visited the referenced site 10/26/17, assessed the trees and authored a *tree health report* dated 1/29/2018. City has requested opinion on the feasibility of transplanting trees less than 10" DBH. Six trees are identified in this memo as potential candidates, and are listed below. (Tree attributes are from my initial report).

| Tree No. | DBH (in.) | Species     | Transplanting Comments   |
|----------|-----------|-------------|--|
| 101      | 8"        | Douglas-fir | These 3 trees stand in a tight group of 10, and are the smallest of the group. Although these trees have relative small trunk diameters, because of their suppressed position in the grove, they have long slender trunks (poor taper, or high H/D ratio), and with foliage only at the top of their trunk (low live crown ratio). While this branching form works well in a grove, it makes transplanting problematic in that long guy wires are necessary to keep the trees supported during root establishment, and the slender trunks are at increased risk of breaking. |
| 102      | 8"        | Douglas-fir |  |
| 31695    | 8"        | Douglas-fir |  |

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| Tree No. | DBH (in.) | Species           | Transplanting Comments  |
|----------|-----------|-------------------|---|
| 31820    | 12"       | Western red-cedar | These 3 trees also form a contiguous canopy with each other. They have larger diameter trunks (compared to the above 3 trees), but the majority of their trunks support foliage-bearing branches (high live crown ratio), and their trunks have adequate taper (low H/D ratio), that, once transplanted, will require shorter guy wires to support them during establishment. |
| 31821    | 16"       | Western red-cedar |   |
| 31822    | 13"       | Western red-cedar |   |

A monitoring and maintenance plan will be submitted with final engineering.

#### Tree Structure References:

##### Height/Diameter (Slenderness).<sup>1</sup>

The ratio of tree height to stem (trunk) diameter, or DBH. Also referred to as slenderness. Stand-alone trees with an H/D ratio of 50 and greater are at increased risk of failure.

##### Live Crown Ratio.<sup>2</sup>

Live crown ratio: the ratio of the tree height to the portion of the tree with foliage-bearing branches. Stand-alone trees with a LCR of 30 and lower are at increased risk of failure.

<sup>1</sup> Mattheck, C. *Tree Mechanics*. 2002. Forschungszentrum Karlsruhe GMBH.

<sup>2</sup> Matheny, Nelda and James R. Clark. *A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas*. ISA.