

From: Kathy Holzer, ISA Certified Arborist PN-19312
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To: LFP Planning Dept

Re: 2018-RUE-0001, Parcel #4019301515

My name is Kathy Holzer, and I am an ISA certified arborist, a resident of LFP, and owner of a lot adjacent to this proposed development. I have been a working arborist in Seattle's urban forest since 1995, the majority of those years as a climbing arborist and for the last 18 years have run a small tree company. I have climbed, pruned cabled, braced and removed countless doug firs for various reasons over this period of time and am extremely familiar with the variations in form and spectrum of health of this species. Doug fir is our dominant tree in LFP, a keystone species in our urban forest, and like many other species in Seattle for the last five years or so they are suffering drought stress which can amplify other stresses the tree encounters and can reduce an individual tree's resilience.

I purchased a half acre lot in LFP because of the trees on the lot and the adjacent lots, because there was a healthy intact remnant forest. In my time here since 2009 I have seen one 35" dbh or so fir removed on my back neighbor's lot, at least two comparable firs removed across 178th from the site of proposed development, and have had to remove my biggest tree (a white pine) due to root decay. In 9 years that is a significant loss of mature trees for this remnant forest, some lost to soil borne fungus and some to infrastructure conflict. The proposed plan for development is asking to remove 6 more trees in the immediate vicinity of my lot, three of them doug firs over 35" dbh.

While I understand that the purpose of this hearing is very specific - to define in this context what reasonable use means - I would ask your patience for a brief thought experiment. Trees are pack creatures, like dogs, and under most normal environmental conditions seldom exist in a solitary state. It's common knowledge in my industry that doug fir and many other species of trees connect below ground by means of root grafting. Fifty feet is not far for a root to travel from its source in most soils, and some species routinely travel much much further. Research using radioactive isotopes has recently proven that through these root grafts, trees in stands exchange nutrients, send warnings about pest infestation, both give and receive sustenance from each other. Dying trees send their resources to surrounding seedlings, subdominant trees in a stand that just don't get enough light to thrive are supported by their neighbors with water and minerals. The thought experiment is this: imagine lot lines removed from a hawk's eye view of lake forest park. Each tree is almost certainly connected below ground, in ways we are only beginning to understand, to adjacent trees. We think in terms of private property and property rights. Trees just seek resources and respond to environments.

In addition to the below-ground network that improves resilience in stands of trees, there is an enormous and evolving body of research about stand wind dynamics - that is, the way trees buffer each other in winds, responding as a group. Removing a tree from a stand exposes its neighbors to wind from directions and to velocities they have never experienced and thus are often not prepared to handle. It takes many years for a tree to adapt its structure to changes in wind exposure or hydrology, and often removing one tree causes damage or failure to adjacent trees. Forestry has a term for this - the "edge tree" phenomenon. If a forester harvests (ie logs) a lot, drawing an arbitrary line through a stand of trees (not unlike a lot line), and doesn't do anything to make the newly exposed trees more wind firm, it's common knowledge that these edge trees are extremely vulnerable to failure.

LFP ordinance 16.14.070 d.3.b.viii recognizes much of this research:

Development proposals associated with a tree permit shall:

- a. Incorporate trees as a site amenity and reflect a strong emphasis on tree protection.*
- b. Demonstrate the following prioritized factors for retention:*
 - i. Existing viable trees in groups or stands;*
 - ii. Exceptional trees or other high quality open-grown, windfirm trees;*
 - iii. Landmark trees;*
 - iv. Trees in critical area buffers, or adjacent to critical area buffers;*
 - v. Trees that are interdependent with and therefore critical to the integrity of stands of other protected trees;*
 - vi. Other individual trees that will be windfirm, high quality trees if retained;*
 - vii. Other trees that provide wildlife or riparian habitat, screening, buffering or other amenities;*
 - viii. Trees that help to protect neighbors' trees from windthrow, or other trees within required yard setbacks or on the perimeter*

As I said, I recognize the limited scope of this hearing, but would like to clearly point out the intention of our ordinance. Trees in groups are to be protected. Open grown trees (ie those with full symmetrical canopies) are to be retained if wind firm. "**Trees that are interdependent with and therefore critical to the integrity of stands of other protected trees**". The trees on all properties surrounding the lot proposed for development will be adversely effected by the loss of any or all of the trees the developer has in his sights. There will be changed wind dynamics. There will be a loss of interconnectedness below ground and all the beneficial exchanges through that network we are only starting to understand. And this doesn't even take into account the way a building will alter hydrology, the root loss guaranteed to happen to trees close to the property line. 5 big trees nearby lost in the last 9 years already, and who knows how many prior - the fabric of our forest is being unstitched one tree at a time.

There is a 44.5" dbh doug fir on my lot, 15 ft from the property line. The proposed 5 ft set back from this property line for the 2x2x33 ft infiltration trench shown on the most recent development proposals is therefore 20 ft from the trunk of my biggest fir, a lovely and now-wellmaintained beast of about 135 ft. The critical root zone of this tree is 45 ft. in all directions from the trunk outward, and the interior critical root zone is thus 22.5 ft. That means the infiltration trench, which I'm certain this developer intends to dig in the conventional rather than a root-friendly manner, will remove about 7 ft of interior critical root zone. This trench would be full of water during rainy season, when the tree needs it least. Rob Anderson's elm tree sits just around the corner of the property about a foot from the property line, and measures 32.4" combined diameter as a two stem tree. The critical root zone of that tree is therefore 32.4 ft, and the ICRZ is just over 16 ft. As the trench slopes downhill toward the elm, all runoff will be dumped into the critical root zone of the elm just at the point where it has recently had soil compaction and other root impacts associated with conventional development.

I believe it would be possible, if a builder was willing, to put a house on this lot without removing any trees or having any adverse impact on the surrounding stand of remnant forest. This developer has made it quite clear that trees are just an obstacle to him, and unless required by the city to do so will likely not invest any time in researching how that might be done. A wealth of information and consultants are available on the topic. I hope that if a building is approved for this site, the city of LFP will require this developer to do this research. I hope the resulting house fits into the remnant forest rather than clear-cutting as much of it as possible. I hope that our city councillors and planners and administrators will have the integrity and courage to make decisions on behalf of the future rather than getting lost in the weeds of the present. The future I imagine includes a forest in Lake Forest Park.

thank you for your time.

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