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- Preliminary Tree Protection Plan -

HAZELWOOD MULTI-FAMILY

Case #: 20-190
2801 Hazelwood Ln SE
Lacey WA 98503

Prepared for: City of Lacey Community and Economic Development

Prepared by: Washington Forestry Consultants, Inc.

Date of Report: February 10, 2021

Introduction and Overview

The project proponent is planning to construct a 204-unit multi-family development on 5.31 acres in the City of Lacey. The City of Lacey has retained WFCI to:

- Evaluate all existing trees on the site, pursuant to Chapter 14.32 (August, 2006) of the Lacey Tree Protection and Vegetation Preservation Ordinance.
- Make recommendations for trees suitable to be saved in open space or tree tract areas, along with required protection and cultural measures.

Observations

Methodology

WFCI has conducted an inventory and assessment of the trees on the project site to determine the number, distribution and condition of existing trees. The inventory was conducted using variable area plots installed on a systematic grid across the project site. The potential of trees over 6" diameter at breast height (DBH) to be incorporated into the new project were assessed. Many smaller trees were evaluated in the project area as well. The tree evaluation phase used

methodology developed by Matheny and Clark (1998)[1] the International Society of Arboriculture (ISA).

Site Description

The site is a mostly flat, fully forested parcel. The parcel is bordered by similar wooded lots to the north and south, Hicks Lake to the east and Hicks Lake Road SE to the west. There is a single-family home on the property. Access to the property is by Hazelwood Ln SE.

Soil Depth and Productivity

There are 2 soil types in the project area; the Everett very gravelly sandy loam, and the Indianola loamy sand.

Most of the soils on the site are described as the Indianola loamy sand, very deep, somewhat excessively drained soil. It is formed in sandy glacial outwash on broad uplands. Permeability is rapid. The available water capacity for plants is low to moderate. The effective rooting depth for trees is 60 inches or more. The potential for windthrow of trees is *low* under normal conditions.

The second soil type is the Everett very gravelly sandy loam, a very deep, somewhat excessively drained soil found on terraces and outwash plains. It formed in glacial outwash. Permeability is rapid. Plant available water capacity is low. The effective rooting depth is 60 inches or more and the hazard of runoff and erosion is slight. The potential for windthrow of trees is slight under normal conditions. Seedling mortality is severe and new trees require irrigation to establish.

Figure 1. Soils Map of Hazelwood Multi-family Project Area

Project Area Boundary
47 – Indianola loamy sand
33 – Everett very gravelly sandy loam

[1] Nelda Metheny and James R. Clark. Trees and Development: A Technical Guide to Preservation of Trees during Land Development. International Society of Arboriculture, Champaign, IL.

Tree Conditions

There are 2 forest cover types in the project area for the purposes of description.

Type I. -- This cover type is the 4.63-acre forested portion of the parcel. It is a mature stand of Douglas-fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), western redcedar (*Thuja plicata*), bigleaf maple (*Acer macrophyllum*), and red alder (*Alnus rubra*). The stand appears to be about 60 years old. The stocking is mostly uniform at about 46 trees per acre. Tree size ranges from 6 to 40 inches DBH.

Table 1. Summary of Trees in Type I of the Hazelwood Multi-family Project Area.

Species	DBH Range (in.)	Condition Range	Trees/Acre	# Healthy Trees	# Unhealthy Trees	Total # of Trees
Douglas-fir	16-28	Good – Fair	15	68	0	68
Western Redcedar	12-40	Good – Poor	14	61	4	65
Western Hemlock	17-30	Fair	13	62	0	62
Red Alder	6-24	Fair – Very Poor	10	16	31	47
Bigleaf Maple	6-34	Fair – Poor	8	16	21	37
Totals	**6-40**	**Good – Very Poor**	**60**	**223**	**56**	**279**

We project that 279 trees grow in this type. The condition of living trees ranges from 'Good' to 'Very Poor' condition, with about 80% of trees described as bring in 'Fair' condition or better. This leaves about 223 healthy, long-term trees in this cover type.

The understory shrub stocking includes salal (*Gaultheria shallon*), sword fern (*Polystichum munitum*), Oregon grape (*Mahonia nervosa*), Himalayan blackberry (*Rubus armeniacus*) grasses, and broadleaved weeds.

Type II. -- This cover type includes the cleared homesite of the project area. There are a few fruit trees, Douglas-firs and ornamental shrubs. The condition of the trees is 'Fair'. Less than 10 trees occur in the type.

The understory shrub stocking shrubs, grasses, Himalayan blackberry, and broadleaved weeds.

Off-Site Impacts

Tree removal and development on this parcel could expose off-site trees to the north and south to additional windthrow hazard. WFCI may need to conduct additional off-site edge tree evaluation upon receipt of the grading plan.

Forest Practices Permit

Trees removed from this parcel will contain more than 5,000 board feet. **Therefore, a forest practices permit from the City of Lacey is required**.

Recommendations

The City of Lacey Tree and Vegetation: Urban Forest Management Ordinance (Chapter 14.32) requires that a minimum of 5% of the gross project area be set aside as a dedicated tree tract. The following is a summary of the tree tract calculations:

Total Project Area:	5.31 acres
5% Minimum Requirement for Tree Tract:	0.27 acres

Tree Replacement

Of the 289 trees currently on the site, none will be retained due to intensive site use and/or poor condition of existing trees. On a developing multi-family residential lot over 7,500 ft^2 or over, 4 trees per 5,000 ft^2 are required to meet the minimum density. Therefore **185 replacement trees** will be necessary to fulfill this requirement.

Planted landscape trees should be selected from the Lacey approved general tree list and be at least 2 inch caliper B&B trees for deciduous species and 7-8 foot tall B&B conifers. Thirty percent (30%) of planted trees need to be native conifers. The projected cost of 185 replacement trees is $52,725. Final landscape plans should be reviewed by WFCI before final approval.

Timeline for Tree Protection Activity

1. The site plan needs to reflect the 5% tree tract requirement. Submit the grading plan with the tree tract to WFCI for review of the trees in the tract and to update tree replacement requirements.
2. Prepare a landscape plan that includes the required landscape and replacement trees as per the Lacey code. WFCI should review the landscape plan.
3. Stake the clearing limits.
4. Conduct a pre-job conference with WFCI prior to the start of clearing.
5. Complete the logging and clearing.
6. Construct project.
7. Plant replacement trees during the appropriate season of planting (October 15 through December 1 and March 1 through April 15).
8. If landscape trees are planted prior to lot construction, then these trees need to be watered in the summer months and protected with tree protection fencing during construction on the lot.

Summary

The project proponent is planning on developing a 204-unit multi-family complex on 5.31 acres in Lacey. The Lacey Tree Protection and Vegetation Preservation Ordinance requires 0.27 acres (5% project acreage) to be dedicated as a tree tract. At least 185 trees will need to be replanted within the buildable area of the project at a projected cost of $52,725.

The landowners to the north should be notified that they should have their trees inspected by a qualified professional forester due to exposure from tree removal on this parcel.

Please give us a call if you have questions.

Respectfully submitted,

Washington Forestry Consultants, Inc.

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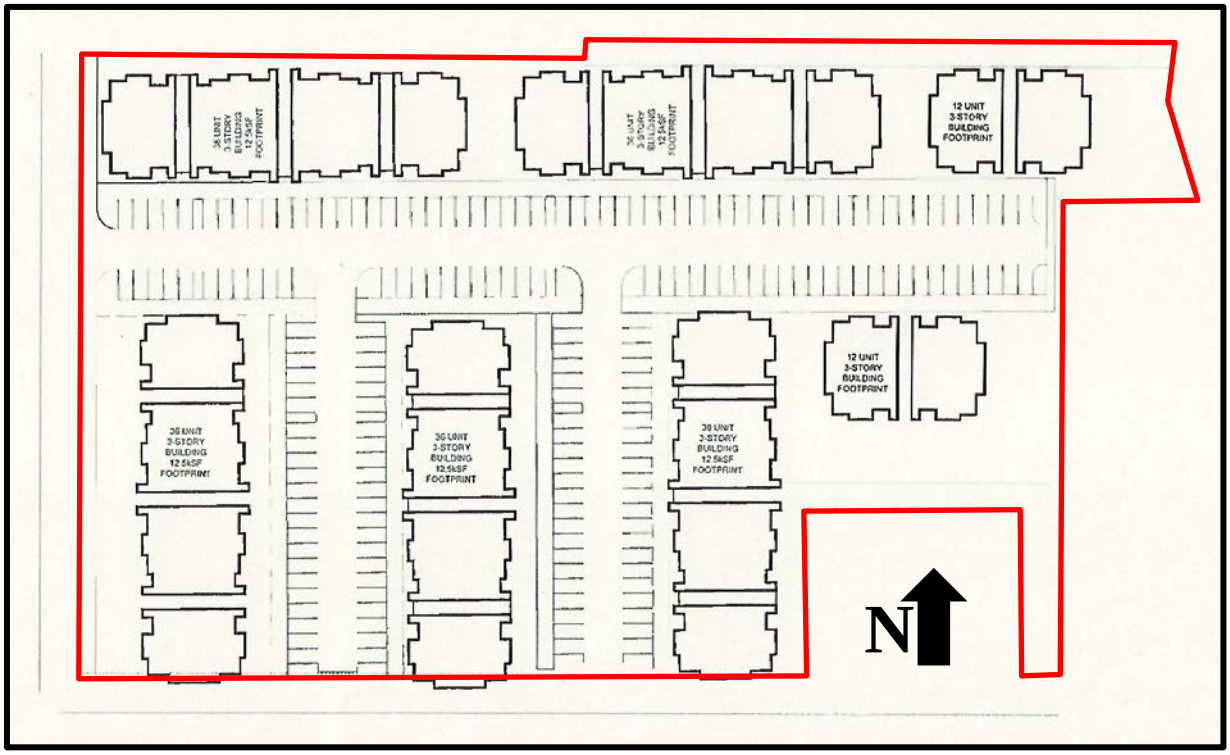
Attachment 1. Aerial Photo of Hazelwood Multi-family Project Area

(2018 Thurston County Geodata)

Project Area Boundary

Attachment 2. Site Plan for Hazelwood Multi-family Project



Project Area Boundary

Attachment 3. Assumptions and Limiting Conditions

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Note: Even healthy trees can fail under normal or storm conditions. The only way to eliminate all risk is to remove all trees within reach of all targets. Annual monitoring by an ISA Certified Arborist or Certified Forester will reduce the potential of tree failures. It is impossible to predict with certainty that a tree will stand or fail, or the timing of the failure. It is considered an 'Act of God' when a tree fails, unless it is directly felled or pushed over by man's actions.