



TO: Richard Leary, Innis Arden Community Club Reserves Chairman

JOB SITE: Innis Arden Community Clubhouse
17252 13th Avenue NW
Shoreline WA, 98177

DATE: December 5, 2008

PREPARED BY: Sean Dugan, Registered Consulting Arborist #457

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Summary

Ninety-one significant size trees are identified on the Site Map and Table of Trees. Thirty-five trees are proposed for removal, which includes 8 deciduous trees and 27 conifers. Sixty-two percent of the total significant trees will be retained and 38% will be removed. This exceeds the City's minimum retention requirements of 20% for sites without critical areas and 30% for sites with critical areas.

To meet the City's standards for replacement trees, 78 new trees will be planted to mitigate for the 35 trees proposed to be removed. Replacement trees will be established in zones indicated on attached Site Map. Replacement trees shall meet the size requirements: deciduous trees shall be at least 1.5 inches in caliper and evergreens 6 feet in height.

Assignment & Scope of Report

This report outlines the site inspection by Sean Dugan, RCA, of Tree Solutions Inc. on September 3, 2008. I was asked to visit the job site to evaluate the health and risk of trees near the Innis Arden Clubhouse. I was provided with a Site Map and a Table of Trees with the trees proposed for removal highlighted. I was asked to provide a formal report including findings and management recommendations for improving the landscape near the Clubhouse in accordance with the Shoreline Municipal Code (SMC). Richard Leary, the Innis Arden Reserves chairman, requested these services in the endeavor of obtaining a clearing and grading permit from the City of Shoreline to proceed with site restoration.

Limits of Assignment

Unless stated otherwise: 1) information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of inspection; and 2) the inspection is limited to visual examination of the subject trees without dissection, excavation, probing, climbing, or coring unless explicitly specified. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future. 3) I was asked to not to exceed \$500 without the written agreement from the client. Additional assumptions and limiting conditions can be found in Appendix A.

Methods

I evaluated tree health and structure utilizing visual tree assessment (VTA) methods. The basis behind VTA is the identification of symptoms, which the tree produces in reaction to a weak spot or area of mechanical stress. A tree reacts to mechanical and physiological stresses by growing more vigorously to re-enforce weak areas, while depriving less stressed parts (Mattheck, 1994). An understanding of the uniform stress allows me to make informed judgments about the condition of a tree.

The trees proposed for removal are marked on the site with pink flagging tape. The Site Map shows the location of both the deciduous and conifer trees with their corresponding identification numbers. Trees highlighted in yellow on the Map are proposed for removal. The identification numbers are shown in the copied Table of Trees, which I was provided and included in this report as Appendix B. Trees proposed for removal are highlighted in pink on the Map. Additional notes regarding this Table can also be found in Appendix B.

Observations

The Site and History

Innis Arden is a residential community in the City of Shoreline. The Community Clubhouse is used as a meeting space for the residents of Innis Arden. The residents use the many features on the site including a swimming pool, walking path, open space, areas for basketball and tennis, a play area, and other small features throughout the

property (see attached Site Map). There were no Critical Areas visible on the site or indicated on the map.

The site is well maintained. The property managers have been making improvements to the property such as storm water drainage systems maintenance and removal of dead, dying, and diseased vegetation. The work being proposed in this report is a continuation of the site improvements.

The Trees

Ninety-one significant size (per City of Shoreline Municipal Code) trees are identified on the Site Map and Table of Trees. Eight deciduous Lombardi poplar (*Populus nigra 'Italica'*) trees are proposed for removal. The trees are located in the northwest corner of the site. The trees have been previously reduced in height. An evaluation of the trees was made by Ann Hirschi from my office and addressed in a memo provided to David Fosmire and Rick Leary on January 22, 2008, which I have attached to this report. The trees continue to send up weakly attached sucker sprouts.

Twenty-seven conifer trees are proposed for removal. Tree species includes Douglas-fir (*Pseudotsuga menziesii*), Western Red cedar (*Thuja plicata*), and Lodgepole pine (*Pinus contorta*) trees. The greatest density of trees can be found in the southwest perimeter of the property and north of the tennis court area. There is limited understory below the canopies of these trees.

Discussion

Ninety-one significant size trees are identified on the Site Map and Table of Trees. Thirty-five trees are proposed for removal, which includes 8 deciduous trees and 27 conifers. Sixty-two percent of the total significant trees will be retained and 38% will be removed. This exceeds the City's minimum retention requirements of 20% for sites without critical areas and 30% for sites with critical areas.

Section 20.50.360 of the SMC states:

Up to six significant trees and associated vegetation may be removed per parcel with no replacement of trees required. Any significant tree proposed for removal beyond this limit should be replaced as follows:

1. One existing significant tree of 8 inches in diameter at breast height for conifers or 12 inches in diameter at breast height for all others equals one new tree.
2. Each additional three inches in diameter at breast height equals one additional new tree, up to three trees per significant tree removed.
3. Minimum size requirements for trees replaced under this provision: deciduous trees shall be at least 1.5 inches in caliper and evergreens six feet in height.

To meet the minimum standards for as set forth in the SMC trees will need to be replaced as shown in the tables below:

Conifer Replacements

| Size of tree | 0-7.9" | 8"-10.9" | 11-13.9" | 14" + | Total |
|---|--------|----------|----------|-------|-----------|
| # of replacements required per tree | 0 | 1 | 2 | 3 | |
| # of trees proposed for removal in category | | 10 | 4 | 13 | 26 |
| Total replacements | | 10 | 8 | 39 | 57 |

Deciduous Replacements

| Size of Tree | 0-11.9" | 12"-14.9" | 15"-17.9" | 18" + | Total |
|---|---------|-----------|-----------|-------|-----------|
| # of replacements required per tree | 0 | 1 | 2 | 3 | |
| # of trees proposed for removal in category | | 1 | 1 | 6 | 8 |
| Total replacements | | 1 | 2 | 18 | 21 |

Seventy-eight replacement trees will be needed to mitigate for the 34 trees proposed for removal to meet the City's minimum standards.

The location of the replacement trees will be designed to improve the amenities and benefits received by the community from the vegetation. The trees will be clustered to form vegetated islands with contiguous canopies. A portion of the trees will be located near the perimeter of the site for screening of structures and hardscape.

A variety of species can be chosen to improve the overall aesthetics of the site. A list of trees and associated understory plants suitable to the growing conditions of the site is included in the report as Appendix C. The condition of replacement trees shall meet or exceed current American Nursery and Landscape Association or equivalent organization's standards for nursery stock.

Where feasible, in the southwest cluster of trees 20 to 25 feet tall snags should be left in place to create additional habitat for wildlife. Debris developed from the removal of the existing trees will be used on the site. This will include chipping of small diameter parts, which can then be used for mulch for the replacement trees. Considerations should be made for the opportunity to use the large diameter pieces on site.

The Planning Director may require a performance and maintenance bond for the proposed work in order to ensure the adequate maintenance and protection of retained trees and replacement trees. The Director may also require submittal of periodic monitoring reports as necessary to ensure survival of replacement trees.

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Recommendations

- ❖ Obtain all necessary permits prior to the commencement of work.
- ❖ Establish 78 replacement trees for the 34 trees proposed for removal.
- ❖ Replacement trees shall meet the size requirements: deciduous trees shall be at least 1.5 inches in caliper and evergreens 6 feet in height.
- ❖ Trees should be established in zones indicated on attached Site Map.
- ❖ Protect existing vegetation to remain from being damaged by tree removal operations.

References

City of Shoreline WA, Municipal Code. Title 20 Development Code. General Development Standards, accessed November 24, 2008. <http://www.cityofshoreline.com>

Mattheck, Claus and Helge Breloer, The Body Language of Trees.: A Handbook for Failure Analysis. London: HMSO, 1994.

Appendix A - Assumptions & Limiting Conditions

1. Consultant assumes that any legal description provided to Consultant is correct and that title to property is good and marketable. Consultant assumes no responsibility for legal matters. Consultant assumes all property appraised or evaluated is free and clear, and is under responsible ownership and competent management.
2. Consultant assumes that the property and its use do not violate applicable codes, ordinances, statutes or regulations.
3. Although Consultant has taken care to obtain all information from reliable sources and to verify the data insofar as possible, Consultant does not guarantee and is not responsible for the accuracy of information provided by others.
4. Client may not require Consultant to testify or attend court by reason of any report unless mutually satisfactory contractual arrangements are made, including payment of an additional fee for such Services as described in the Consulting Arborist Agreement.
5. Unless otherwise required by law, possession of this report does not imply right of publication or use for any purpose by any person other than the person to whom it is addressed, without the prior express written consent of the Consultant.
6. Unless otherwise required by law, no part of this report shall be conveyed by any person, including the Client, the public through advertising, public relations, news, sales or other media without the Consultant's prior express written consent.
7. This report and any values expressed herein represent the opinion of the Consultant, and the Consultant's fee is in no way contingent upon the reporting of a specific value, a stipulated result, the occurrence of a subsequent event or upon any finding to be reported.
8. Sketches, drawings and photographs 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. The reproduction of any information generated by architects, engineers or other consultants and any sketches, drawings or photographs is for the express purpose of coordination and ease of reference only. Inclusion of such information on any drawings or other documents does not constitute a representation by Consultant as to the sufficiency or accuracy of the information.
9. Unless otherwise agreed, (1) information contained in this report covers only the items examined and reflects the condition of the those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, climbing, or coring. Consultant makes no warranty or guarantee, express or implied, that the problems or deficiencies of the plans or property in question may not arise in the future.
10. Loss or alteration of any part of this Agreement invalidates the entire report.

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Appendix B – Table of Trees

The D in the left margin indicates a Deciduous tree and the C a Coniferous tree. The Small x in the left margin are trees not of significant size. The hand written notes were observations I made while on site.

- Revegetation plan, show mitigation

| | TAG# | TREE DESCRIPTION | DRIPLINE RADIUS | |
|---|------|---------------------------------|-----------------|---|
| ▷ | 4102 | 24" POPLAR | N/A | |
| ▷ | 4104 | 14" POPLAR | N/A | |
| ▷ | 4105 | 32" POPLAR | N/A | |
| ▷ | 4106 | 28" POPLAR | N/A | |
| | 4107 | 10" CEDAR | 10' | |
| | 4114 | 32" CEDAR | 30' | |
| ▷ | 4117 | 8" ORNAMENTAL | 6' | |
| ▷ | 4124 | 36" POPLAR | N/A | |
| ▷ | 4125 | 16" POPLAR | 12' | |
| | 4126 | 8" CEDAR | 8' | |
| ▷ | 4127 | 48" POPLAR | N/A | |
| ▷ | 4128 | 48" POPLAR | N/A | |
| C | 4172 | 16" FIR | 12' | } edge of site west, damage to asphalt path |
| C | 4173 | 18" FIR | 18' | |
| C | 4175 | 18" FIR | 20' | |
| C | 4176 | 12" FIR | 16' | |
| | 4179 | 16" PINE | 14' | } intermediate canopy |
| C | 4180 | 14" PINE | 20' | |
| | 4183 | 14" MAPLE | 22' | |
| | 4185 | 14" MAPLE | N/A | |
| | 4187 | 12" MAPLE | 18' | |
| x | 4188 | 10" MAPLE | 18' | |
| C | 4189 | 10" FIR Pine | 22' | - Broken top, FS, sharp pine |
| | 4190 | 14" FIR | 16' | |
| | 4191 | 16" MAPLE | 20' | |
| C | 4193 | 14" FIR | 12' | - internal canopy loss |
| | 4194 | 18" CEDAR | 12' | |
| x | 4195 | 10" MAPLE | 15' | |
| x | 4196 | 10" MAPLE | 20' | |
| | 4197 | 14" MAPLE | 20' | |
| x | 4198 | 10" WILLOW | 20' | |
| | 4199 | 16" WILLOW white oak | 20' | |
| | 4200 | 20" PINE | 20' | |
| | 4251 | 8" CEDAR | 15' | |
| | 4253 | 16" CEDAR | 6' | |
| | 4255 | 14" CEDAR | 6' | |
| C | 4257 | 20" FIR | 18' | |
| | 4306 | 18" CEDAR | 15' | |
| | 4307 | 28" FIR | 18' | |
| | 4308 | 24" CEDAR | 15' | |
| x | 4319 | 20" DECIDUOUS | 46' | |

Get digital format of plan

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| | | |
|-------------|---------------|-----|
| ✕ 4320 | 8" ORNAMENTAL | 10' |
| ✕ 4321 | 8" ORNAMENTAL | 10' |
| ✕ 4445 | 6" CEDAR | 10' |
| ✕ 4446 | 6" CEDAR | 10' |
| ✕ 4447 | 6" CEDAR | 15' |
| ✕ 4448 | 6" CEDAR | 12' |
| 4449 | 14" CHERRY | 20' |
| 4450 | 12" PINE | 12' |
| 4451 | 12" CHERRY | 4' |
| 4452 | 12" BIRCH | 15' |
| 4455 | 12" CHERRY | 15' |
| 4456 | 12" DECIDUOUS | 20' |
| 4457 | 14" FIR | 20' |
| 4458 | 14" BIRCH | 20' |
| 4459 | 12" BIRCH | 20' |
| 4460 | 10" FIR | 10' |
| 4461 | 14" FIR | 20' |
| 4462 | 12" BIRCH | 15' |
| 4463 | 14" DECIDUOUS | 15' |
| 4464 | 12" MAPLE | 20' |
| 4465 | 16" FIR | 15' |
| 4466 | 10" FIR | 5' |
| 4467 | 14" PINE | 10' |
| 4468 | 14" FIR | 12' |
| stay C 4470 | 14" PINE | 15' |
| C 4471 | 12" PINE | 12' |
| C 4472 | 14" FIR | 15' |
| C 4473 | 14" FIR | 12' |
| C 4474 | 10" FIR | 15' |
| C 4475 | 14" FIR | 15' |
| C 4476 | 8" FIR | 12' |
| C 4477 | 10" FIR | 12' |
| C 4478 | 16" FIR | 15' |
| C 4479 | 8" FIR | 10' |
| C 4480 | 16" FIR | 15' |
| C 4481 | 10" FIR | 10' |
| C 4482 | 20" FIR | 15' |
| C 4483 | 8" CEDAR | 10' |
| C 4484 | 8" FIR | 10' |
| C 4485 | 14" FIR | 15' |
| C 4486 | 8" FIR | 5' |
| C 4487 | 14" FIR | 12' |

Keep large st
 keep large
 Tight cluster - 3 to 5
 between stems
 Broken top Fir

12

| | | |
|------|--------------|-----|
| 4488 | 8" FIR | 10' |
| 4489 | 12" FIR | 18' |
| 4490 | 14" FIR | 15' |
| 4491 | 12" FIR | 18' |
| 4492 | 16" OAK | 16' |
| 4494 | 8" CEDAR | 15' |
| 4645 | 14" CEDAR | 15' |
| 4646 | 12" CEDAR | 20' |
| 4647 | 12" PINE | 12' |
| 4660 | 18" FIR | 15' |
| 4673 | 20" FIR | 15' |
| 4677 | 10" PINE | 12' |
| 4683 | 20" OAK | 20' |
| 4770 | 18" FIR | 12' |
| 4772 | 18" FIR | 8' |
| 4774 | 12" BIRCH | 12' |
| 4775 | 12" CEDAR | 15' |
| 4778 | 12" CEDAR | 15' |
| 4779 | 12" CEDAR | 12' |
| 4780 | 8" DECIDUOUS | 14' |

Appendix C – Plant Palette

PLANT PALETTE #1- PART SHADE/ PART SUN/ WELL DRAINED

| Canopy | Mature Height | Evergreen/ Decid. | Spacing | Native/ | Non/native |
|---|---------------|-------------------|---------|-------------------|------------|
| Douglas Maple – <i>Acer glabrum douglasiana</i> | 25' | D | | X | |
| Vine Maple- <i>Acer circinatum</i> | 25' | D | 10-15' | X | |
| Mountain hemlock- <i>Tsuga mertensiana</i> | 30' | E | 8-10' | X Slow growing | |
| Japanese Yew- <i>Taxus cuspidata or brevifolia</i> | 10'-40' | E | 15' | X | X |
| Bay Laurel-Umbellaria californica | 5-40' | E | | | |
| Magnolia - <i>Magnolia grandiflora</i> - 'Little Gem' | 20' | E | 10-15' | | X |
| Leatherleaf Viburnum- <i>Viburnum rhytidophyllum</i> | 20' | E | 8-10' | | X |
| Camelia - <i>Camelia japonica</i> | 10'-15' | E | 10-15' | | X |
| Understory | | | | | |
| Indian plum- <i>Oemlaria cerasiformis</i> | | D | | X | |
| Evergreen huckleberry- <i>Vaccinium ovatum</i> | 3-5' | E | 2-3' | X | |
| Red huckleberry – <i>Vaccinium parvifolium</i> | | E | 2-3' | X | |
| High bush cranberry (<i>Viburnum edule</i>) | | D | 4' | X | |
| Red twig dogwood – <i>cornus sericea (and cultivars-)</i> | 15' | D | 2-3' | X | |
| Red elderberry- <i>Sambucus racemosa</i> | | D | 4-8' | X | |
| Rhododendron macrophyllum and cultivars | 4'-15' | E | 4-8' | X | X |
| Western serviceberry (<i>Amelanchier alnifolia</i>) | | D | 4-8' | X | |
| Silk tassel bush - <i>Garrya elliptica</i> | | E | 4-8' | X | |
| Red flowering currant- <i>Ribes Saanguineum</i> | 3-12' | D | 4-8' | X | |
| Salal – <i>Gaultheria shallon</i> | 3-7' | E | 2-3' | X | |
| Ground cover | | | | | |
| Low Oregon grape- <i>mahonia</i> | | | | X | |
| Sword Fern- <i>polystichum munitum</i> | | | | X | |
| Trillium ovatum | | | | X | |

PLANT PALETTE #2- PART SUN/ WELL DRAINED

| Canopy | Mature Height | Evergreen/ Decid. | Spacing | Native | Non/native |
|---|----------------------|--------------------------|----------------|---------------|-------------------|
| Pacific Dogwood - <i>Cornus nuttallii</i> ' Eddie's White Wonder' | 30' | D | 10-15' | X | X |
| Beaked hazel – <i>Corylus cornuta</i> | 20-30' | D | 10-15' | X | |
| Vine Maple- <i>Acer circinatum</i> | 25' | D | 8-10' | X | |
| Rocky Mountain Juniper- <i>Juniperus scopulorum</i> OR <i>communis, occidentalis</i> | 25' | E | | X | |
| Strawberry tree - <i>Arbutus unedo-</i> | 15'-30' | E | 8-10' | | X |
| Japanese spicebush- <i>Lindera obtusiloba</i> | 10-20' | D | 10-15' | | X |
| <i>Cryptomeria japonica</i> 'elegans' or 'Sekkan sugi; | 15'-30' | E | 8-10' | | X |
| Cornelian Cherry- <i>Cornus mas</i> | 20'-25' | D | 8-10' | | X |
| Amur Maple - <i>Acer ginnala</i> | 15-25' | D | 8-10' | | X |
| Paperbark Maple- <i>Acer griseum</i> | 20'-30' | D | 8-10' | | X |
| Vine Maple- <i>Acer circinatum</i> | 25' | D | 8-10' | X | |
| Purple flowering plum – <i>Prunus</i> ' Newport' or 'Mt. St. Helens' | 20' | D | 8-10' | | X |
| Flowering Crabapple <i>Malus</i> 'Adirondack' or 'Pink parfait' | 20' | D | 8-10' | | X |
| Understory | | | | | |
| Mock-orange- <i>Philadelphus lewisii</i> | 5-10' | D | 4-8' | X | |
| Red flowering currant- <i>Ribes Saanguineum</i> | 3-12' | D | 4-8' | X | |
| Red twig dogwood – <i>cornus sericea</i> | 15' | D | 4-8' | X | |
| Oceanspray- <i>Holodiscus discolor</i> | 15' | D | 4-8' | X | |
| Thimbleberry – <i>Rubus parviflorus</i> | 2-10' | D | 5' | X | |
| Ground cover | | | | | |
| Sword Fern- <i>polystichum munitum</i> | | | 2-3' | X | |
| Kinnikinnick- <i>Arctostaphylos uva-ursi</i> | | | 2-3' | X | |
| Wild Strawberry- <i>fragaria spp.</i> | | | 12-24" | | |

Attachments:

Site Map

Memo to David Fosmire & Rick Leary Dated Jan 22, 2008

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