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MEMORANDUM

To: Planning Commission

From: Jon Regala, Senior Planner
Deborah Powers, Urban Forester
Paul Stewart, AICP, Deputy Planning Director

Date: June 11, 2009

Subject: TREE REGULATIONS UPDATE – STUDY SESSION
FILE ZON08-00016

RECOMMENDATION

Review the information under the *Requested Minor Changes* subsection of this memo and provide feedback and/or requests for additional information to staff for review at the next study session

The topics listed under subsections titled: *Requested Moderate Changes* and *Additional Planning Commission Topics* are proposed to be discussed at a future study session and are provided as background information at this time.

BACKGROUND DISCUSSION

In November 2005, the City Council adopted Chapter 95 of the Kirkland Zoning Code (KZC) that established new regulations, standards and procedures for tree management and required landscaping (see Attachment 1). The code went into effect in 2006. At the time of the adoption of the tree amendments, the City Council requested that a two-year status report of the regulations be prepared and brought back for Council review. The Council was interested in understanding issues that may arise in the implementation and application of the tree regulations.

Staff has reviewed the tree regulations and their operation over the past two-and-a-half years and believes that some aspects of tree management in the City could be improved. Staff presented a report to the Council at the September 2, 2008 City Council study session. The City Council reviewed and discussed the proposed changes presented by staff. Based on the analysis, staff presented to the Council three "tiers" of amendments for Council's consideration: minor, moderate or major changes to the adopted regulations.

"Minor amendments" would improve the current system but would not change the basic approach. *"Moderate changes in policy direction"* would result in some fairly substantive changes to the regulations. The third tier "*major policy questions*" would fundamentally alter the regulations and implement new policy directions. At the conclusion of the study session, the City Council directed staff to pursue studying changes identified as being in the 'minor' and 'moderate' categories. Changes to the KZC are subject to the requirements found in KZC Chapter 135 – Amendments to the Text of the Zoning Code and KZC Chapter 160 - Process IV.

On May 14, 2009, the Planning Commission held a study session where they discussed and approved the work program scope and public participation activities for this project. The Planning Commission also wanted to explore some additional topics such as:

- Tree removal limit not associated with development;
- 'Saving trees' versus 'replacing trees' associated with development;
- Managing expectations with tree retention; and
- Adding more strength to the code where tree retention is concerned.

Also, background information was requested regarding tree retention for the CamWest Planned Unit Development (PUD) project at 400 State Street South (former Greens Funeral Home).

CAMWEST PUD – CASE STUDY

The CamWest PUD project proposed to relocate the existing historic Nettleton residence to another location on the subject property and to redevelop the remainder of the property with 24 detached condominium units. The subject property had 77 significant trees and was subject to a Tree Plan II review. A Tree Plan II report was submitted by the applicant and can be found in Attachment 2. The arborist report identified that of the 77 significant trees, 13 were not viable and were proposed to be removed. The applicant proposed to remove an additional 47 trees given the location of the proposed improvements and site disturbance associated with construction. A total of 17 trees were proposed to be retained with the original proposal.

After review of the applicant's tree plan by the City's Urban Forester, three landmark trees (*defined by "...exceptional value to the residents of the City"*) were identified in the area of the relocated Nettleton residence (see Attachment 3). The applicant had proposed to only retain two of the landmark trees. The third landmark tree, a Purple European Beech (tree #40), was proposed to be removed. In order to retain this landmark beech tree, the applicant was asked to shift the location of the historic Nettleton residence footprint several feet to the south. The driveway and parking area for the residence was also relocated to reduce impacts to the beech tree. Saving landmark tree #40 resulted in tree #31, which was originally proposed to be retained, being removed due to the shifting of the Nettleton building footprint. Two additional Type 1 trees along the east property were able to be retained when previously marked for removal.

A total of 19 trees or 24.7% of the trees were retained, of which 3 were landmark trees. As a condition of the PUD, the City required the following:

> *The applicant shall retain all viable trees during the construction of plat improvements and residences and comply with the specific recommendations of both the applicant's and City's arborist. During construction the arborist shall oversee protection of the trees shown on to be retained. The applicant has agreed to retain the trees recommended for retention by the City's arborist including the landmark trees (#37, #40, and #42). Prior to final inspection the applicant shall submit a recorded document ensuring the preservation of the 3 landmark trees [in perpetuity] and record a [5-year] maintenance agreement of the other trees to be retained.*

REQUESTED MINOR CHANGES

There are several changes to the 2006 tree regulations that the City Council asked staff to pursue. These changes do not involve major shifts in policy direction and are listed below. Each topic contains a brief description of the issue and followed by staff response and request for Planning Commission direction.

1. Code Structure

The City Council asked staff to simplify and reformat KZC Chapter 95. Although the 2006 revisions were a vast improvement over previous code language, the chapter could be reorganized to make it more user-friendly. Some definitions could be improved and a table format could be utilized where appropriate.

Staff Response

Staff began simplifying and reorganizing KZC Chapter 95 by creating an outline of the existing code sections to understand the relationships between each section and subsections throughout the chapter (see Attachment 4). In doing so, staff was able to determine where redundancies occurred, consolidate similar-type sections from different parts of the chapter, or to relocate code sections to make the chapter flow more logically. The result is a revised draft outline of KZC Chapter 95 (see Attachment 5). While some changes were made to headings of various sections and/or subsections of this chapter to create clarity, no changes have been proposed to the body of text with this outline approach.

A number of definitions in KZC Chapter 95 need updating to remain consistent with industry standards, other City ordinances, to reduce redundancies within the chapter and for clarity. For example, the draft Shoreline Master Program's definition of trees should be consistent with KZC Chapter 95 for cross-referencing purposes, the new Tree Risk Assessor Certification as established by the Pacific Northwest Chapter of the International Society of Arboriculture (TRACE-certification) requirement for tree removal recommendations in critical areas needs to be added to the definition of 'qualified professional', and so forth. Currently, a few definitions are too vague, and therefore are not very effective. (for example, the 'Landmark Tree' definition – see the Camwest PUD Case Study above). Having clear, consistent definitions will reduce confusion with enforcement cases.

Another technique that can be used to help make the chapter more user-friendly is to incorporate tables and/or diagrams. Staff recommends exploring the idea of converting the required tree plan information (KZC 95.35.2) into a table format. Doing so will create a checklist of sorts in which a user can quickly and easily determine what tree information is required depending on the type of project being proposed.

Additional fine tuning to the draft chapter outline is anticipated. The final outline may need to reflect feedback from various stakeholder groups and to incorporate the outcome of the task to consolidate the tree regulations and standards found in several City codes.

Planning Commission Direction

- Does the Planning Commission have any suggestions on the revised KZC Chapter 95 draft outline?

- Are there code sections in the KZC Chapter 95 where the Planning Commission thinks that additional graphics and/or tables could be helpful?

2. Regulation Consolidation

The City's tree regulations and standards can be found in different City documents. Currently, trees on private property are regulated by KZC Chapter 95. Requirements for trees in the right-of-way are found in KZC Chapter 110, Public Works Policy R-10, and Municipal Code Title 19.36. In addition, a new KZC Chapter 83 – Shoreline Master Program, is being developed and contains tree regulations for private property along Lake Washington.

Staff Response

Staff believes that it would be helpful to consolidate rules for most right-of-way trees into a single location in the Zoning Code. This is particularly important as the Urban Forester in the Planning Department is now reviewing requests for removal of right-of-way trees impacted by development, as well as tree removal requests on private property. The Public Works Department continues to review removal requests for other right-of-way trees. Another important aspect of consolidating the tree regulations is how code enforcement will be handled.

In terms of code enforcement, the City Attorney is working with department representatives that are involved in code enforcement in efforts to consolidate the City's code enforcement regulations. There are many different code enforcement processes in the City's codes. For example, building code enforcement utilizes a different process than land use enforcement. For trees, the public tree enforcement process is different than private tree enforcement process. The goal of the code enforcement code consolidation project is to research other cities' regulations, determine the existing codes that could be changed, and write a single code enforcement chapter in the municipal code that applies to as many subject areas as possible.

Otherwise, staff is recommending incorporating the different tree regulations and standards found in KMC Title 19.36 and Public Works Policy R-10 into KZC Chapter 95. Since the tree regulations are found in several City documents the following chart helps break down the key elements and the issues involved when considering consolidation of the various regulations and standards.

Code	Definitions	Tree Maintenance	Tree Removal	Violations
KZC Chapter 95 (see Attachment 1) Private Property Trees	• Not consistent with KMC & SMP definitions • Needs reformatting as outlined in the *Code Structure Change* section above • Need updates for clarity and enforcement purposes	Responsibility of property owner	• Limited to 2 per 12-month period for any size property • Depending on scope of tree removal, no permit may be required. • Most development requires a Tree Plan prior to any tree removals.	• Enforced by Planning Dept. • Goals are to discourage tree damage/removal and allow restoration if damage/removal occurs • Monetary penalty and/or restoration is

				based on the number & size of trees removed
KMC 19.36 (see Attachment 6) Right-of-Way and Parks trees	Contains definition of hazard tree, nuisance tree, and street tree	• Responsibility of adjoining property owner • Unlawful to prune, trim, modify, alter, or damage tree without Public Works approval • Applicant cannot prune, trim, modify, or alter street tree for view enhancement	• Application required by private party subject to Public Works review based on criteria in KMC 19.36.035 (see Attachment 6) • Discretion is given to Parks or Public Works for tree removal on City Property	• By code, ROW trees enforced by Public Works, however, Planning Dept. is currently enforcing ROW tree violations • Park trees enforced by Parks Dept. • Primary goal is restoration of damaged or removed trees • Monetary penalty is based on number of days until restoration is complete • KMC 19.36.090 contains provisions for criminal penalties
KZC Chapter 110 Right-of-way trees (See Attachment 7)	No definitions	Policy R-10 contains procedures for tree planting and pruning in the ROW (see Attachment 8)	Policy R-10 contains procedures for tree planting and pruning in the ROW (see Attachment 8)	See KMC 19.36 above
Draft Shoreline Master Program – DRAFT KZC Section 83.370 (see Attachment 9)	Contains definitions specific to this chapter.	Property owner	• Refers to KZC Chapter 95 if no development activity proposed. If associated with development, tree removal is subject to different standards in KZC Chapter 83 (see Attachment 9) • Potential conflict with Park property	Enforcement through KZC Chapter 95

Staff is also recommending that the tree regulations found KZC Chapter 110 Public Works remain where they are since they are very broad yet apply solely to street improvement standards and refer to Public Works Policy R-10. Staff is also

recommending that the tree regulations remain in KZC Chapter 83 Shoreline Master Program because the chapter functions as a stand alone entity. However, some analysis will need to be done to ensure consistency with definitions and cross references between each chapter.

Planning Commission Direction

- Does the Planning Commission have concerns with the proposed approach for code consolidation?

- The Planning Commission will be briefed on the code enforcement consolidation project later in the summer or fall. For the purposes of the current tree regulation amendment project, it is relevant to know that staff may recommend that the public and private tree enforcement portions of the Chapter 95 may be moved to a consolidated chapter in the Kirkland Municipal Code. Is the Planning Commission in agreement with this approach?

3. Tree Protection/Notification

Since the September 2008 City Council study session, staff has required additional credentials for arborists making tree removal recommendations under the Fast-Track amendment process, effective in late May 2009 (see Attachment 10).

In terms of tree protection during development, the current standard in KZC 95.35.6.b.1 includes installation of a minimum four-foot tall chain link fence to be placed at the limits of disturbance boundary as recommended by the applicant's arborist and approved by the City's Urban Forester. Highly visible signs placed on the protective fencing are also required acknowledging the tree protection area. A detail sheet describing these requirements can be found in Attachment 11.

Staff Response

The implementation of the recent Fast Track amendments and the current fencing standards offer adequate tree protection and flexibility in regards to tree protection during development. To remain consistent with current practice and Public Works fencing standard plan CK-R-49 (see Attachment 14), KZC 95.35.6.b.1 the City should require a 6' tall chain link fence, unless a comparable substitution to the chain link fence requirement is allowed on a case-by-case basis.

At the last Planning Commission study session, several Planning Commission members expressed concern that tree retention expectations are not relayed effectively. Part of this is due to the current approach for certain types of projects where tree removal is phased. For example, while trees may not be removed during the grading and utility installation stage of a short plat, the same trees thought to be retained are then allowed to be removed with the construction of the single-family home.

Planning Commission Direction

- Should staff pursue revising the protective tree fence sign standards to reflect potential phasing of tree removal?

4. Tree Maintenance Agreements

The benefits of tree maintenance agreements are two-fold: they alert the homeowner that certain trees must be retained and they notify future property-owners (through appearance on the title report) that retention requirements apply. In the past, trees have been required to be retained by the developer through the short plat process. New homeowners within these developments have then removed trees not knowing they were supposed to be retained. The City does not yet have data to know whether or not these agreements will work in the long-term. The first agreements under the 2006 regulations will reach the five-year mark in 2011.

Preparation of the tree maintenance agreements has proven to sometimes be a time-intensive process for staff (see Attachment 12). Each permit requiring either tree retention or replanting follows these steps:

1) Obtain final as-built landscape plan prior to final inspection
2) Prepare the tree maintenance agreement for owner signature/notary and recording with King County
3) Conduct a final inspection of the project
4) Intake recording fees and signed tree maintenance agreement
5) Prepare cover sheet for recording the maintenance agreement
6) Route cover sheet and signed agreement to the City Clerk's office for preparation for recording with King County
7) Scan and/or save final as-built landscape plan into the permit tracking system
8) Inspect subject property when five-year maintenance period ends

Staff Response

KZC Chapter 95 does not require inspection of trees when the five-year maintenance period ends. Staff believes that the existing agreement satisfies the requirement of establishing the five-year maintenance agreement and by recording the agreement, also notifies future landowners. Staff is recommending being involved with tree inspections only in the event of a complaint from a neighbor or the general public at the end of the five-year maintenance period.

Staff is currently working on administrative procedures to help streamline the tree maintenance agreement process by automating forms, revising conditions of approval, and better coordinating the preparation of the maintenance agreement.

Planning Commission Direction

Staff does not have any further recommendations but is looking for feedback, if any, from the Planning Commission on this topic.

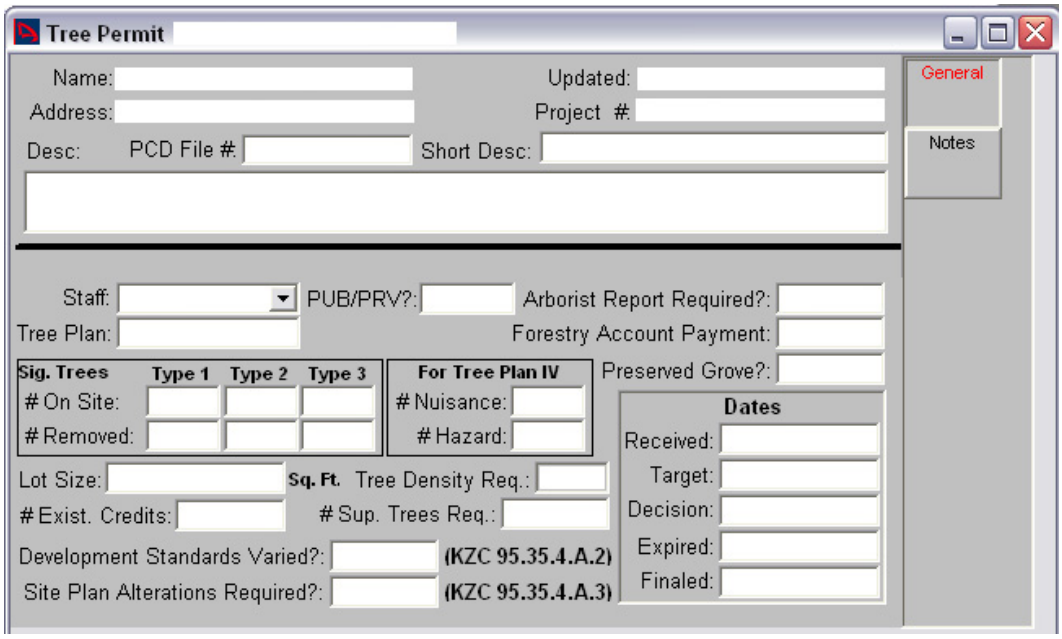
5. Tree Tracking on Private Property

Background research for the memo prepared for the City Council last fall on this topic has confirmed that tracking tree cases could be improved. Consistency in tree typing

between short plat, land surface modification, and building permits is important and the information obtained through each step are relevant to the City's goal of preserving and enhancing tree canopy cover. Information entered into the City's permit tracking system needs to be more specific about trees retained, removed and those planted.

Staff Response

The City's permit tracking system currently contains the following fields:



The timeline for replacing Kirkland's current permit database (Advantage) has recently been extended. It was anticipated that the alternative database would provide an opportunity to better track tree information. Because its implementation will not occur in the 2009/2010 budget cycle, staff is currently working towards adding tree species and size data fields to better track trees on private property as well as a data field to track planted trees.

Staff is also exploring creating a template for applicants to use which could standardize the required information, including a tree inventory when submitted to the City. This will help staff in terms of having consistent and complete information when entering data into the City's permit tracking system. The bigger question is how this data will correlate with the broader goal of monitoring the City's overall canopy coverage, which is summarized under the *Requested Moderate Changes* section below.

Planning Commission Direction

This is presented for informational purposes and no direction is needed.

REQUESTED MODERATE CHANGES

Below are several policy changes that the City Council asked staff to pursue having moderate policy and code implications. The following are questions to be considered during the update

process. *Each topic contains a brief description of the issue and will be presented to the Planning Commission at a future study session for discussion.*

1. **Should integrated development plans, as they apply to trees, be mandatory rather than optional?**

   The goal of an *integrated development plan* (proposed by Kurt Latimore, the City's consultant for permit process efficiency) is to identify the trees to be saved or removed on a site at the very beginning of a project. Tree removal can then occur all at once, rather than at various times throughout the grading and building permit process. Current administrative efforts are focused on making such a plan optional for developers who wish to avoid multiple rounds of tree assessment/plan revisions. Although the underlying principles of the integrated development plan may be found in the existing Tree Plan III requirements (KZC Section 95.35.2.3 in Attachment 1), policy changes will be necessary to fully implement this approach.

   The *integrated development plan* as it relates to trees could be made mandatory. As most trees currently are saved through the short plat and land surface modification (grading) stages, and then are lost as individual building permits are approved, staff welcomes an approach that would allow a more comprehensive review at the beginning of the process when lot lines could be adjusted or other modifications to plans made to save the most valuable trees.

   The disadvantage to this approach is that the developer would have to identify approximate building footprints very early in the process and would have less flexibility later in the building process. This is difficult for developers who do not plan to build the final structures, or new owners/builders of partially-developed properties.

   The benefit of this approach, however, is that tree retention expectations are clear to all future developers and builders before lots are sold or plans prepared much like other protected natural resources, such as wetlands or streams. This could help ensure improved tree retention. Additional research and discussion is needed prior to making a recommendation on this topic. This will be discussed in more detail at the next study session. In the meantime, staff has implemented minor changes, which include plan submittal requirements, to create efficient routing and tracking of the tree plan review to better coincide with the overall permit review.

2. **Should code enforcement fines be increased?**

   Although greatly increased from previous levels, code enforcement fines still may be too low. To ensure tree retention, the fines must be more than just the "cost of doing business". Currently, the $1,000 fine for an unauthorized tree removal is not a deterrent for those intending to increase views or clear a site for development. If regulations for right-of-way trees and private property trees are consolidated as mentioned in a previous section, code enforcement fines should also be consistent with that approach. Staff would like to explore this issue further.

3. **How will the City monitor its tree canopy coverage?**

   The adopted tree regulation ordinance included a section directing the City to undertake an analysis estimating the City's tree canopy coverage by December 31, 2010. With current in-house data, the City cannot determine whether progress toward the Comprehensive Plan goal of 40% canopy coverage is being achieved.

Staff points to the need for accurately assessing and monitoring the City's biomass of trees and vegetation. Without this data, there is no performance measure for the City's canopy goal. Staff would work with the City's Information Technology-GIS Department (IT-GIS) to prepare a plan for how this level of tree monitoring might be implemented, and formulate a procedure for incorporating citywide tree canopy statistics.

In addition, tree monitoring should aim to establish and maintain an overview of citywide tree canopy coverage. The current inventory is a generalized digital map of forest canopy, first published in 2003 as part of the Natural Resource Management Plan. Staff worked with a consultant to create this thematic map from satellite imagery. Although this process was considered be state-of-the-art and highly repeatable, area calculations are assumed to have an inherent error range of plus/minus a few percentage points. In order to measure progress toward the planned canopy goal, staff recommends that a recurring cycle of analysis be established beginning in 2010. This may have budget considerations.

IT-GIS staff could research approximate costs and also consider whether this process can reasonably be accomplished in-house rather than outsourced. Tree canopy updates could be utilized to derive other comprehensive citywide statistics as well. Staff considers it possible that the cost of an outside vendor could be shared by neighboring jurisdictions that might also benefit from the data.

ADDITIONAL PLANNING COMMISSION TOPICS

At the previous Planning Commission study session, the Planning Commission requested that further discussion is needed on the following topics:

- The City's tree removal limit not associated with development. Should the tree removal limit be revised to be relative to the size of the subject property?
- 'Saving trees' versus 'replacing trees' associated with development.
- Can the code be strengthened where tree retention is concerned?

Staff would like feedback as to what kind of background information the Planning Commission would like to have prepared on these topics for a future study session?

PUBLIC COMMENT

Staff had sent out an e-mail to various mailing lists noting that we are beginning the update to our regulations and informing people that they can subscribe to a list serv or access information via a web page. One email was submitted prior to the preparation of this memo in regards to this project. The email can be found in Attachment 13.

REVISED WORK PROGRAM

Below is the revised work program. An additional study session (highlighted in yellow) was added for the Planning Commission and Houghton Community Council in July in order to discuss the requested changes in two phases. The dates below are tentative.

DATE	ITEM
June 11, 2009	Planning Commission Study Session – *Discuss Minor Changes*
June 22, 2009	Houghton Community Council Study Session – *Discuss Minor Changes*
June 23 – 30, 2009	Meetings with Stakeholders & Internet based Questionnaire
July 9, 2009	Planning Commission Study Session – *Discuss Moderate Changes*
July 27, 2009	Houghton Community Council Study Session – *Discuss Moderate Changes*
August 13, 2009	Planning Commission Study Session – Draft Amendments
August 24, 2009	Houghton Community Council Study Session – Draft Amendments
September 2009	SEPA Review and Determination
September 24, 2009	Planning Commission Study Session – Draft Amendments
September 28, 2009	Houghton Community Council Study Session – Draft Amendments
October 2009	Notice to CTED (at least 60 days prior to City action)
October 2009	Houghton Community Public Hearing
October 2009	Planning Commission Public Hearing
November 2009	City Council Study Session
December 2009	City Council Action

ATTACHMENTS

1. KZC Chapter 95
2. CamWest PUD Arborist Report dated March 15, 2007
3. CamWest PUD Tree Retention Plan
4. Outline of Existing KZC Chapter 95
5. Draft Outline of Reorganized KZC Chapter 95
6. KMC 19.36
7. KZC Chapter 110
8. Public Works Policy R-10
9. Draft KZC Section 83.370
10. Fast Track Tree Amendments May 2009
11. Tree Protection Fencing Detail
12. Tree Maintenance Agreement
13. Email dated May 28, 2009
14. Public Works Standard Plan CK-R-49

Chapter 95 – TREE MANAGEMENT AND REQUIRED LANDSCAPING

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95.10 Definitions
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11. Hearing Examiner Decision

95.05 Purpose and Intent

1. Trees and other vegetation are important elements of the physical environment. They are integral to Kirkland's community character and protect public health, safety and general welfare. Protecting, enhancing, and maintaining healthy trees and vegetation are key community values. A goal is to achieve an overall tree canopy coverage of 40 percent for the community. The many benefits of healthy trees and vegetation contribute to Kirkland's quality of life by:

   a. Minimizing the adverse impacts of land disturbing activities and impervious surfaces such as runoff, soil erosion, land instability, sedimentation and pollution of waterways, thus, reducing the public and private costs for storm water control/treatment and utility maintenance;

   b. Improving the air quality by absorbing air pollutants, assimilating carbon dioxide and generating oxygen;

   c. Reducing the effects of excessive noise pollution;

   d. Providing cost-effective protection from severe weather conditions with cooling effects in the summer months and insulating effects in winter;

   e. Providing visual relief and screening buffers;

   f. Providing recreational benefits;

   g. Providing habitat, cover, food supply and corridors for a diversity of fish and wildlife; and

   h. Providing economic benefit by enhancing local property values and contributing to the region's natural beauty, aesthetic character, and livability of the community.

2. Tree and vegetation removal in urban areas has resulted in the loss to the public of these beneficial functions. The purpose of this chapter is to establish a process and standards to provide for the protection, preservation, replacement, proper maintenance, and use of significant trees, associated vegetation, and woodlands located in the City of Kirkland.

The intent of this chapter is to:

a. Maintain and enhance canopy coverage provided by trees for their functions as identified in KZC 95.05(1);

b. Preserve and enhance the City of Kirkland's environmental, economic, and community character with mature landscapes;

c. Promote site planning, building, and development practices that work to avoid removal or destruction of trees and vegetation, that avoid unnecessary disturbance to the City's natural vegetation, and that provide landscaping to buffer the effects of built and paved areas;

d. Mitigate the consequences of required tree removal in land development through on- and off-site tree replacement with the goals of halting net loss and enhancing Kirkland's tree canopy to achieve an overall healthy tree canopy cover of 40 percent City-wide over time;

e. Encourage tree retention efforts by providing flexibility with respect to certain other development requirements;

f. Implement the goals and objectives of the City's Comprehensive Plan;

g. Implement the goals and objectives of the State Environmental Policy Act (SEPA); and

h. Manage trees and other vegetation in a manner consistent with the City's Natural Resource Management Plan.

95.10 Definitions

The following definitions shall apply throughout this chapter unless the context clearly indicates otherwise. Definitions that apply throughout this code are also located in Chapter 5 KZC.

Caliper – The American Association of Nurserymen standard for trunk measurement of nursery stock. Caliper of the trunk shall be the trunk diameter measured six inches above the ground for up to and including four-inch caliper size and 12 inches above the ground for larger sizes.

Critical Root Zone – The area surrounding a tree at a distance from the trunk, which is equal to one foot for every inch of tree diameter at breast height or otherwise determined by a qualified professional.

Crown – The area of a tree containing leaf- or needle-bearing branches.

Diameter at Breast Height (DBH) – The diameter or thickness of a tree trunk measured at 4.5 feet from the ground.

Dripline – The distance from the tree trunk, that is equal to the furthest extent of the tree's crown.

Impact – A condition or activity that affects a part of a tree including the trunk, branches, and critical root zone.

Grove – A group of three or more significant trees with overlapping or touching crowns.

Landmark Tree – A tree or group of trees designated as such because of its exceptional value to the residents of the City.

Limit of Disturbance – The boundary between the area of minimum protection around a

tree and the allowable site disturbance as determined by a qualified professional.

Qualified Professional – An individual with relevant education and training in arboriculture or urban forestry. The individual must be an arborist certified by the International Society of Arboriculture or

a registered consulting arborist from the American Society of Consulting Arborists and for Forest Management Plans may be a certified forester by the Society of American Foresters. A qualified professional must possess the ability to perform tree risk assessments and prescribe appropriate measures necessary for the preservation of trees during land development. For Forest Management Plans, the qualified professional must have the ability to assess wooded sites and prescribe measures for forest health and safety.

Significant Tree – A tree that is at least six inches in diameter at breast height (DBH).

Significantly Wooded Site – A subject property that has a number of significant trees with crowns that cover at least 40 percent of the property.

Site Disturbance – Any development, construction, or related operation that could alter the subject property, including, but not limited to, tree or tree stump removal, road, driveway or building construction, installation of utilities, or grading.

Site Perimeter – The area of the subject property that is 10 feet from the property line.

Specimen Tree – A viable tree that is considered in very good to excellent health and free of major defects, as determined by the City's Urban Forester.

Target – Person or property that can be damaged by failure of a tree.

Tree Removal – The removal of a tree, through either direct or indirect actions, including but not limited to: (1) clearing, damaging or poisoning resulting in an unhealthy or dead tree; (2) removal of at least half of the live crown; or (3) damage to roots or trunk that is likely to destroy the tree's structural integrity.

Viable Tree – A significant tree that a qualified professional has determined to be in good health, with a low risk of failure due to structural defects, is relatively windfirm if isolated or remains as part of a grove, and is a species that is suitable for its location.

Wildlife Snag – The remaining trunk of a dying, diseased, or dangerous tree that is reduced in height and stripped of all live branches.

Windfirm – A condition of a tree in which it can withstand moderate storm winds.

95.15 Applicability – Permit Required

No person, directly or indirectly, shall remove any significant tree on any property within the City, except City right-of-way, without first obtaining a tree removal permit as provided in this chapter, unless the activity is exempted in KZC 95.20. Trees in City right-of-way are regulated pursuant to Chapter 19.36 KMC.

95.20 Exemptions

The following activities are exempt from the provisions of this chapter:

1. Developed Property.

    a. Any owner of developed property may remove up to two significant trees from their property within a 12-month period; provided, that there is no current application for development activity for the site; and provided further, that the tree(s) are not:

        1) In easements dedicated to ensure the protection of vegetation; or in critical areas, or critical area buffers;

        2) Required to be retained in a special regulation contained in Chapters 15

through 60 KZC;

3) Designated on an approved tree plan to be retained pursuant to KZC 95.35 and 95.50; or

4) The last two significant trees on their property. Trees that fit the criteria in KZC 95.35(4)(b) and (4)(c) for nuisance or hazard trees do not count toward the removal allowance.

b. The Department of Planning and Community Development shall establish and maintain a tree removal request form to allow property owners to request Department review of potentially exempt tree removal for compliance with applicable City regulations.

c. For every significant tree that is removed, the City encourages the planting of a tree that is appropriate to the site.

2. Emergency Tree Removal. Any tree on private property that poses an imminent threat to life or property may be removed without first obtaining a permit. The party removing the tree will contact the City within seven days of removal to provide evidence of threat for approval of exemption. If the Planning Official determines that the emergency tree removal was not warranted, he or she may require that the party obtain a permit and/or require that replacement trees and vegetation be replanted as mitigation.

3. Utility Management. Trees may be removed by the City or utility provider in situations involving immediate danger to life or property, or interruption of services provided by a utility.

4. Commercial Nurseries or Tree Farms. A nursery or tree farm owner may remove trees that are being grown to be sold as Christmas or landscape trees.

95.25 Alternative Compliance

All activities regulated by this chapter shall be performed in compliance with the applicable standards contained in this chapter, unless the applicant demonstrates that alternate measures or procedures will be equal or superior to the provisions of this chapter in accomplishing the purpose and intent of this chapter as described in KZC 95.05. Requests to use alternative measures and procedures shall be reviewed by the Planning Official, who may approve, approve with conditions, or deny the request. Examples include but are not limited to retention of specimen or landmark trees or low impact development techniques, including such programs as Green Building Design or Leadership in Energy and Environmental Design that demonstrate a significant reduction to stormwater runoff from the site.

95.30 City Forestry Account

1. Funding Sources. All civil penalties received under this chapter and all money received pursuant to KZC 95.35 shall be used for the purposes set forth in this section. In addition, the following sources may be used for the purposes set forth in this section:

a. Agreed upon restoration payments imposed under KZC 95.55 or settlements in lieu of penalties;

b. Sale of trees or wood from City property where the proceeds from such sale have not been dedicated to another purpose;

c. Donations and grants for tree purposes;

d. Sale of seedlings by the City; and

e. Other monies allocated by the City Council.

2. Funding Purposes. The City shall use money received pursuant to this section for the following purposes:

a. Acquiring, maintaining, and preserving wooded areas within the City;

b. Planting and maintaining trees within the City;

c. Identification and maintenance of landmark trees;

d. Establishment of a holding public tree nursery;

e. Urban forestry education; or

f. Other purposes relating to trees as determined by the City Council.

95.35 Tree Retention, Protection and Density

1. Introduction. The intent of this section is to successfully retain desirable trees on developing and re-developing sites and to maintain and enhance the tree canopy of Kirkland. To that end, the City requires a tree permit in conjunction with all development permits resulting in site disturbance and with any proposed tree removal on developed sites not exempted by KZC 95.20.

In order to make better decisions about tree retention, particularly during all stages of development, tree removal permits will require specific information about the existing trees before removal is allowed. Different levels of detail correspond to the scale of the project or activity. Specific tree plan review standards are provided in KZC 95.35(4) and include tree retention priority and incentives and variations to development standards in order to facilitate preservation of healthy, significant trees.

The City's objective is to retain as many viable trees as possible on a developing site while still allowing the development proposal to move forward in a timely manner. This section includes provisions that allow development standards to be modified in order to retain viable significant trees.

The requirement to meet a minimum tree density applies to new single-family and duplex developments and major redevelopments, and new residential subdivisions and short subdivisions. If such a site falls below the minimum density with existing trees, supplemental planting is required. A tree density for existing trees to be retained is calculated to see if new trees are required in order to meet the minimum density for the site. Supplemental tree location priority is set as well as minimum size of supplemental trees to meet the density.

The importance of effective protection of retained trees during construction is emphasized with specific protection standards in the last part of this section. These standards must be adhered to and included on demolition, grading and building plans as necessary.

2. Tree Plan Required.

a. Requirement Established. An applicant for a tree removal permit must submit a tree plan that complies with this section. A qualified professional may be required to prepare certain components of a tree plan at the applicant's

expense. If proposed development activities call for more than one tree plan level, the tree plan level with the more stringent requirements shall apply; provided, that the Planning Official may require a combination of tree plan components based on the nature of the proposed development activities. If proposed activity is not clearly identified in this chapter, the Planning Official shall determine the appropriate tree plan.

b. Tree Plan and Retention Requirements. The following sets forth the different tree plans required for development activities or removal requests requiring a tree removal permit. Applicants for development are encouraged to confer with City staff as early in the design process as possible so that the applicable tree planting and retention concepts can be incorporated into the design of the subject property. Each plan sets forth the required components and retention standards for each tree plan. The Planning Official may waive a component for a tree plan, if he or she determines that the information is not necessary.

1) Tree Plan I. Tree Plan I is required for a development permit or land surface modification resulting in site disturbance for one or two attached, detached, or stacked dwelling units.

a) Tree Plan I – Major and Minor.

i. Tree Plan I – Major shall be required for new development, redevelopment, or development in which the total square footage of the proposed improvements is more than 50 percent of the total square footage of the existing improvements on the subject property.

ii. Tree Plan I – Minor shall be required for all proposed development activities and site disturbance for which Tree Plan I – Major does not apply.

b) Tree Plan Requirements. The tree plan shall include the following:

i. Accurate location of significant trees and their driplines measured relative to visible site features (surveyed locations may be required);

ii. Size (DBH) and type or species of these trees; and

iii. General health of these trees.

iv. Approximate trunk location and measure dripline of significant trees that are on adjacent property with driplines extending over the subject property line.

v. For Tree Plan I – Minor, the above tree information shall be required only for trees potentially impacted by proposed development activity, and surveyed tree locations shall not be required.

vi. For Tree Plan I – Major, assessment by a qualified professional shall be required if any significant trees are in required yards or within 10 feet of any side property line on the subject property.

c) Additional Applicant Requirements.

i. If existing trees impacted by site disturbance are being retained, tree protection shall be shown on the grading or demolition plan and may require assistance of a qualified professional.

ii. The applicant shall provide a final plan showing retained trees and any required trees in order to meet tree density or minimum number of trees as outlined in subsections (2)(b)(1)(d) and (2)(b)(1)(e) of this section.

iii. The applicant shall enter into all required tree preservation and maintenance agreements pursuant to KZC 95.50.

iv. For lots from a short subdivision, subdivision or planned unit development with an approved Tree Plan III, the tree information shall be transferred over and the applicant must comply with the applicable Tree Plan III requirements.

d) Site Design and Retention Requirements.

i. For Tree Plan I – Major, the applicant shall retain and protect Type 1 trees, as defined in subsection (4)(a)(1) of this section, in all required yards to the maximum extent possible. To retain Type 1 trees in required yards, the applicant shall pursue, where feasible, applicable variations in the development standards of this code as outlined in subsections (4)(a)(2) and (4)(a)(3) of this section. The applicant shall be encouraged to retain viable trees in other areas on-site.

ii. For Tree Plan I – Minor, the applicant is encouraged to retain viable trees and pursue applicable variations to development.

e) Tree Density Requirements.

i. For Tree Plan I – Major, the minimum tree density applies and shall comply with the process set forth in subsection (5) of this section.

ii. For Tree Plan I – Minor, a minimum of two trees must be on the lot following the requirement set forth in subsection (2)(b)(4)(b)(iv) of this section.

2) Tree Plan II. A Tree Plan II is required for a development permit or land surface modification resulting in site disturbance and impact to a significant tree in required yards and areas for required landscaping for three or more detached, attached, or stacked dwelling units; or any use other than residential.

a) Tree Plan Requirements. The tree plan shall include the following:

i. A site map depicting accurate location of significant trees and their driplines measured relative to visible site features (a survey may be required) and approximate location of significant trees on adjacent property with driplines extending over the subject property; and

ii. A report by a qualified professional stating the size (DBH), species, and assessment of health and determination of viable trees in the areas of required landscaping;

iii. The above tree information shall be required only for trees potentially impacted by proposed development activity as determined by the Planning Official.

b) Additional Applicant Requirements.

i. Demolition and grading plans shall depict tree protection measures, as recommended by a qualified professional, if existing trees are to be retained and their dripline is within the area of disturbance.

ii. Landscape plans shall show all retained trees.

iii. The applicant shall enter into all required tree preservation and maintenance agreements pursuant to KZC 95.50.

c) Site Design and Retention Requirements. The applicant shall pursue applicable variations to development, as outlined in subsections (4)(a)(2) and (4)(a)(3) of this section, for the retention of Type 1 trees, as defined in subsection (4)(a)(1) of this section, where feasible in the required yards and landscaping areas. If removal of a Type 1 tree in required landscaping areas is proposed, the applicant shall provide reasons for the proposed removal that may require assistance from a qualified professional.

d) Tree Plan II sites shall not have a minimum tree density requirement but shall comply with the required landscaping pursuant to KZC 95.40. Preserved trees in required landscaping areas shall apply toward required landscaping requirements.

3) Tree Plan III. A Tree Plan III is required for new residential short plats or subdivisions and related land surface modification applications.

a) Tree Plan Requirements. The tree plan shall include the following:

i. Surveyed location of all significant trees.

ii. A tree inventory prepared by a qualified professional including a numbering system of existing significant trees (with corresponding tags on trees), measured driplines, size (DBH), species and tree status (removed or retained) based on criteria in subsection (2)(c) of this section for all significant trees. The inventory shall include approximate trunk location and measured dripline of significant trees that are on adjacent property with driplines extending over the subject property line.

iii. A report from a qualified professional detailing:

(A) An indication, for each tree, of whether it is proposed to be retained or removed, based on health, risk of failure and suitability of species;

(B) Limits of disturbance around viable trees;

(C) Special instruction for work within their critical root zone; and

(D) Location and type of protection measures for these trees.

iv. A site plan utilizing the information from the tree survey, inventory and report, showing:

(A) The proposed development activity;

(B) Location and limits of disturbance of viable trees to be retained according to the tree inventory and report; and

(C) Trees being removed for proposed development or trees being removed that are not viable.

b) Additional Applicant Requirements.

i. A description and location of tree protection measures during construction for trees to be retained must be shown on demolition and grading plans. Protection measures must be in accordance with subsection (6) of this section.

ii. Prior to permit approval, the applicant shall provide a plan showing tree density calculations pursuant to subsection (5) of this section, retained trees, trees to be removed, and any required supplemental trees to meet the minimum density. The plan must describe the details of site preparation, the installation of new trees and the maintenance measures necessary for the long-term survival and health of all trees on-site pursuant to KZC 95.45 and 95.50.

iii. The applicant shall submit a preservation and maintenance agreement pursuant to KZC 95.50, for approval prior to final plat.

c) Site Design and Retention Requirements. The Planning Official will determine tree types as outlined in subsection (4)(a)(1) of this section, and the applicant shall pursue applicable variations to development, as outlined in subsections (4)(a)(2) and (4)(a)(3) of this section for the retention of Type 1 trees throughout the life of the project.

d) Tree Density Requirements. The minimum tree density shall apply to the site and shall comply with the process set forth in subsection (5) of this section.

4) Tree Plan IV. Tree Plan IV is for tree removal on a property on which no development activity is proposed or in progress. Activity requiring a Tree Plan IV includes but is not limited to: hazard or nuisance tree removal not exempt under KZC 95.20(1); tree removal in areas dedicated to ensure protection of vegetation, critical areas and their buffers; removal of one or both of the last two significant trees on a developed site; and requests to remove hazard or nuisance trees on undeveloped property. The plan can be developed by the applicant but may require assistance of a qualified professional.

a) Tree Plan Requirements. The tree plan shall include the following:

i. A site plan showing the approximate location of significant trees, their size (DBH) and their species, along with the location of structures, driveways, access ways and easements.

ii. For required replacement trees, a planting plan showing location, size and species of the new trees in accordance to standards set forth in subsection (5)(c) of this section.

b) Additional Applicant Requirements.

i. An arborist report explaining how the tree(s) fit the criteria in

subsection (4)(b) or (4)(c) of this section if removal is based on nuisance or hazard and the nuisance or hazard condition is not obvious.

ii. For nuisance or hazard trees in critical areas or their buffers, the planting plan must propose action to mitigate the hazard or nuisance in accordance to standards set forth in subsection (4) of this section.

iii. Tree removal on undeveloped property shall be approved only for hazard or nuisance trees pursuant to the criteria in subsections (4)(c) and (4)(d) of this section. The tree removal exemptions in KZC 95.20 are not applicable to undeveloped property.

iv. If the removal request is for one or both of the last two trees, even if nuisance or hazard, a one-for-one replacement is required as set forth in subsection (5)(c)(2) of this section.

5) Tree Plan V. Tree Plan V is a Forest Management Plan for developed, significantly wooded sites of at least 35,000 square feet in size in which tree removal is requested that is not exempt under Section 95.20 of this Chapter. A Forest Management Plan must be developed by a qualified professional. The Tree Plan shall include the following:

a) A plan depicting the location of all significant trees (a tree survey is not required) with a numbering system of the trees (with corresponding tags on trees in the field). The plan shall include size (DBH), species, and condition of each tree;

b) Identification of trees to be removed, including reasons for their removal and a description of low impact removal techniques pursuant to subsection (4)(e) of this section;

c) A reforestation plan that includes location, size, species, and timing of installation;

d) A narrative report of prescribed, long-term maintenance activity for the site as outlined in subsection (4)(e)(8) of this section.

c. Qualified Professional Reports. Reports prepared by a qualified professional shall contain the following, unless waived by the Planning Official:

1) A complete description of each tree's health and viability. If a tree is not viable for retention, the reason(s) must be soundly based on health, high risk of failure due to structure, defects, unavoidable isolation (windfirmness), or suitability of species and for which no reasonable alternative action is possible (pruning, cabling, etc.). The impact of necessary tree removal to remaining trees, including those in a grove or on adjacent properties, must also be discussed.

2) The location of limits of disturbance around all trees potentially impacted by site disturbances and any special instructions for work within that protection area (hand-digging, tunneling, root pruning, maximum grade change).

3) For development applications, a discussion of timing and installation of tree protection measures that must include fencing and be in accordance with the tree protection standards as outlined in subsection (6) of this section.

4) The suggested location and species of supplemental trees to be used when required. The report shall include planting and maintenance specifications pursuant to KZC 95.45 and 95.50.

3. Tree Plan Review Procedure and Appeals.

a. When an applicant proposes a development activity or project that requires a Tree Plan Level I, II or III, the tree plan shall be reviewed as part of the applicable permit application or process.

b. Applicants for a Level IV or V tree plan must submit a completed permit application on a form provided by the City. Within 21 calendar days, the Planning Official shall review the application and either approve, approve with conditions or modifications, deny the application or request additional information. Any decision to deny the application shall be in writing along with the reasons for the denial and the appeal process.

c. With respect to Level IV and Level V Tree Plans, an applicant may appeal an adverse determination to the Hearing Examiner. A written notice of appeal shall be filed with the Planning Department within 14 calendar days following the postmark date of distribution of a Planning Official's decision. The office of the Hearing Examiner shall give notice of the hearing to the applicant at least 17 calendar days prior to the hearing. The applicant shall have the burden of proving that the Planning Official made an incorrect decision. Based on the Hearing Examiner's findings and conclusions, he or she may affirm, reverse or modify the decision being appealed.

4. Tree Plan Review Standards.

a. Site Design for Development. Tree retention shall be pursuant to this chapter; provided, that such tree retention will not reduce the applicant's development potential (lot coverage, floor area ratio, and density) allowed by the Kirkland Zoning Code. Tree plans shall comply with all tree retention requirements in the KZC, including but not limited to those in Chapter 85 KZC, Geologically Hazardous Areas, and Chapter 90 KZC, Drainage Basins.

1) Tree Retention Standards.

a) Based on the tree plan information submitted by the applicant and the Planning Official's evaluation of the trees and proposed development on subject property, the Planning Official will designate each tree as:

i. Type 1, a viable tree that meets at least one of the criteria set forth in subsection (4)(a)(1)(b) of this section;

ii. Type 2, a viable tree that is to be retained if feasible; or

iii. Type 3, a tree that is either (1) not viable or (2) is in an area where removal is unavoidable due to the anticipated development activity.

b) Tree retention efforts shall be directed to the following trees if they are determined to be healthy and windfirm by a qualified professional, and provided the trees can be safely retained when pursuing alternatives to development standards in subsections (4)(a)(2) and (4)(a)(3) of this section:

i. Landmark trees;

ii. Specimen trees;

iii. Tree groves and associated vegetation that are to be set aside as preserved groves pursuant to KZC 95.50(3);

iv. Trees on slopes of at least 10 percent; or

v. Trees that are a part of a grove that extends into adjacent property, such as in a public park, open space, sensitive area buffer or otherwise preserved group of trees on adjacent private property. If significant trees must be removed in these situations, an adequate buffer of trees may be required to be retained or planted on the edge of the remaining grove to help stabilize.

2) Incentives and Variations to Development Standards. In order to retain trees, the applicant should pursue provisions in Kirkland's codes that allow development standards to be modified. Examples include but are not limited to number of parking stalls, right-of-way improvements, lot size reduction under Chapter 22.28 KMC, lot line placement when subdividing property under KMC Title 22, Planned Unit Developments, and required landscaping, including buffers for lands use and parking/driving areas.

Requirements of the Kirkland Zoning Code may be modified by the Planning Official as outlined below when such modifications would further the purpose and intent of this chapter as set forth in KZC 95.05 and would involve Type 1 trees.

a) Common Recreational Open Space. Reductions or variations of the area, width, or composition of required common recreational open space, may be granted.

b) Parking Areas and Access. Variations in parking lot design and/or access driveway requirements may be granted when the Public Works and Planning Officials both determine the variations to be consistent with the intent of City policies and codes.

c) Required Yards. Initially, the applicant shall pursue options for placement of required yards as permitted by other sections of this code, such as selecting one front required yard in the RSX zone and adjusting side yards in any zone to meet the 15-foot total as needed for each structure on the site. The Planning Official may also reduce the front or side required yards provided that:

i. No required side yard shall be less than five feet; and

ii. The required front yard shall not be reduced by more than five feet in residential zones. There shall not be an additional five feet of reduction beyond the allowance provided for covered entry porches.

d) Stormwater. Requirements pertaining to stormwater may be varied if approved by the Public Works Official under KMC 15.52.060.

3) Additional Variations. In addition to the variations described above, the Planning Official is authorized to require site plan alterations to retain Type 1 trees. Such alterations include minor adjustments to the location of building footprints, adjustments to the location of driveways and access ways, or adjustment to the location of walkways, easements or utilities. The Planning

Official and the applicant shall work in good faith to find reasonable solutions.

b. Nuisance Tree Criteria. A nuisance tree must meet the following criteria:

1) Tree is causing obvious, physical damage to private or public structures, including but not limited to: sidewalk, curb, road, driveway, parking lot, building foundation, roof;

2) Tree has been damaged by past maintenance practices, that cannot be corrected with proper arboricultural practices; or

3) The problems associated with the tree must be such that they cannot be corrected by any other reasonable practice. Including but not limited to the following:

a) Pruning of the crown or roots of the tree and/or small modifications to the site including but not limited to a driveway, parking lot, patio or sidewalk to alleviate the problem.

b) Pruning, bracing, or cabling to reconstruct a healthy crown.

c. Hazard Tree Criteria. A hazard tree must meet the following criteria:

1) The tree must have a combination of structural defects and/or disease which makes it subject to a high probability of failure and is in proximity to moderate-high frequency of persons or property; and

2) The hazard condition of the tree cannot be lessened with reasonable and proper arboricultural practices nor can the target be removed.

d. Trees in Critical Areas or Critical Area Buffers. The intent of preserving vegetation in and near streams and wetlands and in geologically hazardous areas is to support the functions of healthy sensitive areas and sensitive area buffers (see Chapter 90 KZC) and/or avoid disturbance of geologically hazardous areas (see Chapter 85 KZC). The property owner must submit a Level IV Tree Plan to City Planning and Community Development Department to trim or remove any tree from a critical area or critical area buffer. If a tree is considered a nuisance or hazard in a critical area or its buffer, the priority action is to create a “snag” or wildlife tree with the subject tree. If creation of a snag is not feasible, then the felled tree shall be left in place unless the Planning Official permits its removal in writing. The removal of any tree will require the planting of a native tree of a minimum of six feet in height in close proximity to where the removed tree was located. Selection of native species and timing of installation shall be coordinated with the Planning Official.

e. Forest Management Plan. For properties proposing tree removal requiring a forest management plan, the following standards shall apply:

1) Trees to remain should be dominant or co-dominant in the stand, healthy and wind-firm.

2) No removal of trees from critical areas and their buffers, unless otherwise permitted by this chapter.

3) No removal of landmark or specimen trees, unless otherwise permitted by this chapter.

4) No removal of healthy trees that would cause trees on adjacent properties to become hazardous.

5) The reforestation plan ensures perpetuity of the wooded areas. The size of planted trees for reforestation shall be a minimum of three feet tall.

6) Logging operations shall be conducted so as to expose the smallest practical area of soil to erosion for the least possible time. To control erosion, native shrubs, ground cover and stumps shall be retained where feasible. Where not feasible, appropriate erosion control measures to be approved by the City shall be implemented.

7) Removal of tree debris shall be done pursuant to Kirkland Fire Department standards.

8) Recommended maintenance prescription for retained trees with a specific timeline for such management.

5. Tree Density Requirement.

a. Minimum Tree Density Requirement Established. The required minimum tree density is 30 tree credits per acre for development requiring a Tree Plan I – Major and Tree Plan III. For individual lots in a short subdivision or subdivision with an approved Tree Plan III, the tree density shall be calculated based on the entire short plat or subdivision. The tree density may consist of existing trees pursuant to the priority established in subsection (4)(a)(1) of this section, or supplemental trees or a combination of existing and supplemental trees pursuant to subsection (5)(c) of this section. Existing trees transplanted to an area on the same site shall not count toward the required density unless approved by the Urban Forester based on transplant specifications provided by a qualified professional that will ensure a good probability for survival.

b. Tree Density Calculation. For the purpose of calculating required minimum tree density, City right-of-way, and areas to be dedicated as City right-of-way shall be excluded from the area used for calculation of tree density.

Tree density calculation for existing individual trees:

1) Diameter breast height (DBH) of the tree shall be measured in inches.

2) The tree credit value that corresponds with DBH shall be found in Table 95.35.1.

Table 95.35.1

Tree Density for Existing Significant Trees

(Credits per minimum diameter – DBH)

DBH	Tree Credits	DBH	Tree Credits	DBH	Tree Credits
3 – 5"	0.5				
6 – 10"	1	24"	8	38"	15
12"	2	26"	9	40"	16
14"	3	28"	10	42"	17

16"	4	30"	11	44"	18
18"	5	32"	12	46"	19
20"	6	34"	13	48"	20
22"	7	36"	14	50"	21

Example: a 7,200-square-foot lot would need five tree credits (7,200/43,560 = 0.165 X 30 = (4.9) or five). The density for the lot could be met with a 16-inch tree and one six-inch tree existing on-site.

c. Supplemental Trees Planted to Meet Minimum Density Requirement. For sites and activities requiring a minimum tree density and where the existing trees to be retained do not meet the minimum tree density requirement, supplemental trees shall be planted to achieve the required minimum tree density.

1) Tree Location. In designing a development and in meeting the required minimum tree density the trees shall be planted in the following order of priority:

a) On-Site. The preferred locations for new trees are:

i. In preserved groves, critical areas or their buffers.

ii. Adjacent to stormwater facilities as approved by Public Works under KMC 15.52.060.

iii. Entrance landscaping, traffic islands and other common areas in residential subdivisions.

iv. Site perimeter.

v. On individual residential building lots.

b) Off-Site. When room is unavailable for planting the required trees on-site, then they may be planted at another approved location in the City.

c) City Forestry Account. When the Planning Official determines on-site and off-site locations are unavailable, then the applicant shall pay an amount of money approximating the current market value of the supplemental trees into the City forestry account.

2) Minimum Size and Tree Density Value for Supplemental Trees. The required minimum size of the supplemental tree worth one tree credit shall be six feet tall for a conifer and two-inch caliper for deciduous or broad-leaf evergreen tree. Additional credits may be awarded for larger supplemental trees. The installation and maintenance shall be pursuant to KZC 95.45 and 95.50 respectively.

6. Tree Protection during Development Activity. Prior to development activity or initiating tree removal on the site, vegetated areas and individual trees to be preserved shall be protected from potentially damaging activities pursuant to the following standards:

a. Placing Materials near Trees. No person may conduct any activity within the protected area of any tree designated to remain, including, but not limited to, operating or parking equipment, placing solvents, storing building material or soil deposits, or dumping concrete washout or other chemicals. During construction, no person shall attach any object to any tree designated for protection.

b. Protective Barrier. Before development, land clearing, filling or any land alteration, the applicant shall:

1) Erect and maintain a readily visible temporary protective tree fencing along the limits of disturbance which completely surrounds the protected area of all retained trees or groups of trees. Fences shall be constructed of chain link and be at least four feet high, unless other type of fencing is authorized by the Planning Official.

2) Install highly visible signs spaced no further than 15 feet along the entirety of the protective tree fence. Said sign must be approved by the Planning Official and shall state at a minimum "Tree Protection Area, Entrance Prohibited" and provide the City phone number for code enforcement to report violations.

3) Prohibit excavation or compaction of earth or other potentially damaging activities within the barriers; provided, that the Planning Official may allow such activities approved by a qualified professional and under the supervision of a qualified professional retained and paid for by the applicant.

4) Maintain the protective barriers in place until the Planning Official authorizes their removal.

5) Ensure that any approved landscaping done in the protected zone subsequent to the removal of the barriers shall be accomplished with light machinery or hand labor.

6) In addition to the above, the Planning Official may require the following:

a) If equipment is authorized to operate within the critical root zone, cover the areas adjoining the critical root zone of a tree with mulch to a depth of at least six inches or with plywood or similar material in order to protect roots from damage caused by heavy equipment.

b) Minimize root damage by excavating a two-foot-deep trench, at edge of critical root zone, to cleanly sever the roots of trees to be retained.

c) Corrective pruning performed on protected trees in order to avoid damage from machinery or building activity.

d) Maintenance of trees throughout construction period by watering and fertilizing.

c. Grade.

1) The grade shall not be elevated or reduced within the critical root zone of trees to be preserved without the Planning Official's authorization based on recommendations from a qualified professional. The Planning Official may allow coverage of up to one half of the area of the tree's critical root zone with light soils (no clay) to the minimum depth necessary to carry out grading or landscaping plans, if it will not imperil the survival of the tree. Aeration devices may be required to ensure the tree's survival.

2) If the grade adjacent to a preserved tree is raised such that it could slough or erode into the tree's critical root zone, it shall be permanently stabilized to

prevent suffocation of the roots.

3) The applicant shall not install an impervious surface within the critical root zone of any tree to be retained without the authorization of the Planning Official. The Planning Official may require specific construction methods and/or use of aeration devices to ensure the tree's survival and to minimize the potential for root-induced damage to the impervious surface.

4) To the greatest extent practical, utility trenches shall be located outside of the critical root zone of trees to be retained. The Planning Official may require that utilities be tunneled under the roots of trees to be retained if the Planning Official determines that trenching would significantly reduce the chances of the tree's survival.

5) Trees and other vegetation to be retained shall be protected from erosion and sedimentation. Clearing operations shall be conducted so as to expose the smallest practical area of soil to erosion for the least possible time. To control erosion, it is encouraged that shrubs, ground cover and stumps be maintained on the individual lots, where feasible.

d. Directional Felling. Directional felling of trees shall be used to avoid damage to trees designated for retention.

e. Additional Requirements. The Planning Official may require additional tree protection measures that are consistent with accepted urban forestry industry practices.

95.40 Required Landscaping

1. User Guide. Chapters 15 through 60 KZC containing the use zone charts assign a landscaping category to each use in each zone. This category is either "A," "B," "C," "D," or "E." If you do not know which landscaping category applies to the subject property, you should consult the appropriate use zone chart.

Requirements pertaining to each landscaping category are located throughout this chapter, except that Landscaping Category E is not subject to this section.

Landscape Categories A, B, C, D, and E may be subject to additional related requirements in the following other chapters:

a. Various use zone charts, in Chapters 15 through 60 KZC, establish additional or special buffering requirements for some uses in some zones.

b. Chapter 85 KZC, Geologically Hazardous Areas, addresses the retention of vegetation on steep slopes.

c. Chapter 90 KZC, Drainage Basins, addresses vegetation within sensitive areas and sensitive area buffers.

d. Chapter 110 KZC and Chapter 19.36 KMC address vegetation within rights-of-way, except for the I-405, SR-520, and Burlington Northern rights-of-way.

e. KZC 115.135, Sight Distance at Intersections, which may limit the placement of landscaping in some areas.

f. Chapter 22 KMC addresses trees in subdivisions.

2. Use of Significant Existing Vegetation.

   a. General. The applicant shall apply subsection KZC 95.35(4) to retain existing trees and vegetation in areas subject to the landscaping standards of this section. The Planning Official shall give substantial weight to the retained trees and vegetation when determining the applicant's compliance with this section.

   b. Supplement. The City may require the applicant to plant trees, shrubs, and groundcover according to the requirements of this section to supplement the existing vegetation in order to provide a buffer at least as effective as the required buffer.

   c. Protection Techniques. The applicant shall use the protection techniques described in KZC 95.35(6) to ensure the protection of significant existing vegetation.

3. Landscape Plan Required. In addition to the tree plan required pursuant to KZC 95.35(2), application materials shall clearly depict the quantity, location, species, and size of plant materials proposed to comply with the requirements of this section, and shall address the plant installation and maintenance requirements set forth in KZC 95.45 and 95.50. Plant materials shall be identified with both their scientific and common names. Any required irrigation system must also be shown.

4. Minimum Land Use Buffer Requirements. The applicant shall comply with the provisions specified in the following chart and with all other applicable provisions of this chapter. Land use buffer requirements may apply to the subject property, depending on what permitted use exists on the adjoining property or, if no permitted use exists, depending on the zone that the adjoining property is in.

LANDSCAPING CATEGORY ↓	ADJOINING PROPERTY ↓	***Public park or low density residential use or if no permitted use exists on the adjoining property then a low density zone.**	**Medium or high density residential use or if no permitted use exists on the adjoining property then a medium density or high density zone.**	**Institutional or office use or if no permitted use exists on the adjoining property then an institutional or office zone.**	**A commercial use or an industrial use or if no permitted use exists on the adjoining property then a commercial or industrial zone.**
A		Must comply with KZC 95.40 (6)(a) (Buffering Standard 1)	Must comply with KZC 95.40 (6)(a) (Buffering Standard 1)	Must comply with KZC 95.40 (6)(b) (Buffering Standard 2)	
B		Must comply with KZC 95.40 (6)(a) (Buffering Standard 1)	Must comply with KZC 95.40 (5), (6)(a) (Buffering Standard 1)		
C		Must comply with KZC 95.40 (6)(a) (Buffering Standard 1)	Must comply with KZC 95.40 (6)(b) (Buffering Standard 2)		
		Must comply			

D	with KZC 95.40 (6)(b) (Buffering Standard 2)			
E				
Footnotes:	*If the adjoining property is zoned Central Business District, Juanita Business District, North Rose Hill Business District, Rose Hill Business District, Totem Center or is located in TL 5, KZC 95.40(6) does not apply.			

5. Supplemental Plantings.

a. General. The applicant shall provide the supplemental landscaping specified in subsection (5)(b) of this section in any area of the subject property that:

1) Is not covered with a building, vehicle circulation area or other improvement; and

2) Is not a critical area, critical area buffer, or in an area to be planted with required landscaping; and

3) Is not committed to and being used for some specific purpose.

b. Standards. The applicant shall provide the following at a minimum:

1) Living plant material which will cover 80 percent of the area to be landscaped within two years. If the material to be used does not spread over time, the applicant shall re-plant the entire area involved immediately. Any area that will not be covered with living plant material must be covered with nonliving groundcover.

2) One tree for each 1,000 square feet of area to be landscaped. At the time of planting, deciduous trees must be at least two inches in caliper and coniferous trees must be at least five feet in height.

3) If a development requires approval through Process I, IIA, IIB or III as described in Chapters 145, 150, 152 and 155 KZC, respectively, the City may require additional vegetation to be planted along a building facade if:

a) The building facade is more than 25 feet high or more than 50 feet long; or

b) Additional landscaping is necessary to provide a visual break in the facade.

4) In RHBD varieties of rose shrubs or ground cover along with other plant materials shall be included in the on-site landscaping.

5) If development is subject to Design Review as described in Chapter 142, the City will review plant choice and specific plant location as part of the Design Review approval. The City may also require or permit modification to the required plant size as part of Design Review approval.

6. Land Use Buffering Standards. The chart in subsection (4) of this section establishes which buffering standard applies in a particular case. The following subsections establish the specific requirement for each standard:

a. For standard 1, the applicant shall provide a 15-foot-wide landscaped strip with a six-foot-high solid screening fence or wall. Except for public utilities, the fence or wall must be placed on the outside edge of the land use buffer or on the property line when adjacent to private property. For public utilities, the fence or wall may be placed either on the outside or inside edge of the landscaping strip. A fence or wall is not required when the land use buffer is adjacent and parallel to a public right-of-way that is improved for vehicular use. See KZC 115.40 for additional fence standards. The land use buffer must be planted as follows:

1) Trees planted at the rate of one tree per 20 linear feet of land use buffer, with deciduous trees of two and one-half inch caliper, minimum, and/or coniferous trees eight feet in height, minimum. At least 70 percent of trees shall be evergreen. The trees shall be distributed evenly throughout the buffer, spaced no more than 20 feet apart on center.

2) Large shrubs or a mix of shrubs planted to attain coverage of at least 60 percent of the land use buffer area within two years, planted at the following sizes and spacing, depending on type:

a) Low shrub – (mature size under three feet tall), one- or two-gallon pot or balled and burlapped equivalent);

b) Medium shrub – (mature size from three to six feet tall), two- or three-gallon pot or balled and burlapped equivalent);

c) Large shrub – (mature size over six feet tall), five-gallon pot or balled and burlapped equivalent).

3) Living ground covers planted from either four-inch pot with 12-inch spacing or one-gallon pot with 18-inch spacing to cover within two years 60 percent of the land use buffer not needed for viability of the shrubs or trees.

b. For standard 2, the applicant shall provide a five-foot-wide landscaped strip with a six-foot-high solid screening fence or wall. Except for public utilities, the fence or wall must be placed on the outside edge of the land use buffer or on the property line when adjacent to private property. For public utilities, the fence or wall may be placed either on the outside or inside edge of the landscaping strip. A fence or wall is not required when the land use buffer is adjacent and parallel to a public right-of-way that is improved for vehicular use. See KZC 115.40 for additional fence standards. The landscaped strip must be planted as follows:

1) One row of trees planted no more than 10 feet apart on center along the entire length of the buffer, with deciduous trees of two inch caliper, minimum, and/or coniferous trees at least six feet in height, minimum. At least 50 percent of the required trees shall be evergreen.

2) Living ground covers planted from either four-inch pot with 12-inch spacing or one-gallon pot with 18-inch spacing to cover within two years 60 percent of the land use buffer not needed for viability of the trees.

c. Plant Standards. All plant materials used shall meet the most recent American Association of Nurserymen Standards for nursery stock: ANSI Z60.1.

d. Location of the Land Use Buffer. The applicant shall provide the required buffer along the entire common border between the subject property and the adjoining

property.

e. Multiple Buffering Requirement. If the subject property borders more than one adjoining property along the same property line, the applicant shall provide a gradual transition between different land use buffers. This transition must occur totally within the area which has the less stringent buffering requirement. The specific design of the transition must be approved by the City.

f. Adjoining Property Containing Several Uses. If the adjoining property contains several permitted uses, the applicant may provide the least stringent land use buffer required for any of these uses.

g. Subject Property Containing Several Uses. If the subject property contains more than one use, the applicant shall comply with the land use buffering requirement that pertains to the use within the most stringent landscaping category that abuts the property to be buffered.

h. Subject Property Containing School. If the subject property is occupied by a school, land use buffers are not required along property lines adjacent to a street.

i. Encroachment into Land Use Buffer. Typical incidental extensions of structures such as chimneys, bay windows, greenhouse windows, cornices, eaves, awnings, and canopies may be permitted in land use buffers as set forth in KZC 115.115(3)(d); provided, that:

1) Buffer planting standards are met; and

2) Required plantings will be able to attain full size and form typical to their species.

j. Modification. The applicant may request a modification of the requirements of the buffering standards of subsection (6) of this section. The Planning Official may approve a modification if:

1) The owner of the adjoining property agrees to this in writing; and

2) The existing topography or other characteristics of the subject property or the adjoining property, or the distance of development from the neighboring property decreases or eliminates the need for buffering; or

3) The modification will be more beneficial to the adjoining property than the required buffer by causing less impairment of view or sunlight; or

4) The Planning Official determines that it is reasonable to anticipate that the adjoining property will be redeveloped in the foreseeable future to a use that would require no, or a less intensive, buffer; or

5) The location of pre-existing improvements on the adjoining site eliminates the need or benefit of the required landscape buffer.

k. Outdoor use, activity, and storage (KZC 115.105(2)) must comply with required land use buffers for the primary use, except that the following outdoor uses and activities, when located in commercial or industrial zones, are exempt from KZC 115.105(2)(c)(1) and (2)(c)(2) as stated below:

1) That portion of an outdoor use, activity, or storage area which abuts another outdoor use, activity, or storage area which is located on property zoned for commercial or industrial use.

2) Outdoor use, activity, and storage areas which are located adjacent to a fence or structure which is a minimum of six feet above finished grade; and do not extend outward from the fence or structure more than five feet; provided, that the total horizontal dimensions of these areas shall not exceed 50 percent of the length of the facade or fence (see Plate 11).

3) If there is an improved path or sidewalk in front of the outdoor storage area, the outdoor use, activity or storage area may extend beyond five feet if a clearly defined walking path at least three feet in width is maintained and there is adequate pedestrian access to and from the primary use. The total horizontal dimension of these areas shall not exceed 50 percent of the length of the facade of the structure or fence (see Plate 11).

4) Outdoor dining areas.

5) That portion of an outdoor display of vehicles for sale or lease which is adjacent to a public right-of-way that is improved for vehicular use; provided, that it meets the buffering standards for driving and parking areas in subsections (7)(b)(1)(a) and (7)(b)(1)(b) of this section; and provided further, that the exemptions of subsection (7)(b)(2) of this section do not apply unless it is fully enclosed within or under a building, or is on top of a building and is at least one story above finished grade.

6) Outdoor Christmas tree lots and fireworks stands if these uses will not exceed 30 days, and outdoor amusement rides, carnivals and circuses, and parking lot sales which are ancillary to the indoor sale of the same goods and services, if these uses will not exceed seven days.

7. Landscaping and Buffering Standards for Driving and Parking Areas.

a. Landscaping – General.

1) The following internal parking lot landscape standards apply to each parking lot or portion thereof containing more than eight parking stalls.

a) The parking lot must contain 25 square feet of landscaped area per parking stall planted pursuant to subsections (7)(a)(1)(b) and (c) of this section;

b) The applicant shall arrange the landscaping required in subsection (7)(a)(1)(a) of this section throughout the parking lot to provide landscape islands or peninsulas to separate groups of parking spaces (generally every eight stalls) from one another and each row of spaces from any adjacent driveway that runs perpendicular to the row. This island or peninsula must be surrounded by a six-inch-high vertical curb, be of similar dimensions as the adjacent parking stalls and planted pursuant to the standards in subsection (7)(a)(1)(c) of this section:

c) Landscaping shall be installed pursuant to the following standards:

1) At least one deciduous tree, two inches in caliper or a coniferous tree five feet in height.

2) Groundcover shall be selected and planted to achieve 60 percent coverage within two years.

d) Exception. The requirements of this subsection do not apply to any area that is fully enclosed within or under a building.

2) Rooftop Parking Landscaping. For a driving or parking area on the top level of a structure that is not within the CBD zone or within any zone that requires design regulation compliance, one planter that is 30 inches deep and five feet square must be provided for every eight stalls on the top level of the structure. Each planter must contain a small tree or large shrub suited to the size of the container and the specific site conditions, including desiccating winds, and is clustered with other planters near driving ramps or stairways to maximize visual effect.

3) If development is subject to Design Review as described in Chapter 142 KZC, the City will review the parking area design, plant choice and specific plant location as part of the Design Review approval. The City may also require or permit modification to the required landscaping and design of the parking area as part of Design Review approval.

b. Buffering for Driving and Parking Areas.

1) Perimeter Buffering – General. Except as specified in subsection (7)(b)(2) of this section, the applicant shall buffer all parking areas and driveways from abutting rights-of-way and from adjacent property with a five-foot-wide strip along the perimeter of the parking areas and driveways planted as follows (see Figure 95.40.A):

a) One row of trees, two inches in caliper and planted 30 feet on center along the entire length of the strip.

b) Living groundcover planted to attain coverage of at least 60 percent of the strip area within two years.

2) Exception. The requirements of subsection (7)(b)(1) of this section do not apply to any parking area that:

a) Is fully enclosed within or under a building; or

b) Is on top of a building and is at least one story above finished grade; or

c) Serves detached dwelling units exclusively; or

d) Is within any zone that requires design regulation compliance. See below for Design District requirements.

3) Design Districts. If subject to design review, each side of a parking lot that abuts a street, through-block pathway or public park must be screened from that street, through-block pathway or public park by using one or a combination of the following methods (see Figures 95.40.A, B, and C):

a) By providing a landscape strip at least five feet wide planted consistent with subsection (7)(b)(1) of this section, or in combination with the following. In the RHBD Regional Center a 10-foot perimeter landscape strip along NE 85th Street is required planted consistent with subsection

(7)(b)(1) of this section.

b) The hedge or wall must extend at least two feet, six inches, and not more than three feet above the ground directly below it.

c) The wall may be constructed of masonry or concrete, if consistent with the provisions of KZC 92.35(1)(g), in building material, color and detail, or of wood if the design and materials match the building on the subject property.

d) In JBD zones:

1) If the street is a pedestrian-oriented street, the wall may also include a continuous trellis or grillwork, at least five feet in height above the ground, placed on top of or in front of the wall and planted with climbing vines. The trellis or grillwork may be constructed of masonry, steel, cast iron and/or wood.

2) If the wall abuts a pedestrian-oriented street, the requirements of this subsection may be fulfilled by providing pedestrian weather protection along at least 80 percent of the frontage of the subject property.

e) If development is subject to Design Review as described in Chapter 142 KZC, the City will review plant choice and specific plant location as part of the Design Review approval. The City may also require or permit modification to the required plant size as part of Design Review approval.

4) Overlapping Requirements. If buffering is required under subsection (6) of this section, Land Use Buffering Standards, and by this subsection, the applicant shall utilize the more stringent buffering requirement.

Perimeter Parking Lot Landscaping

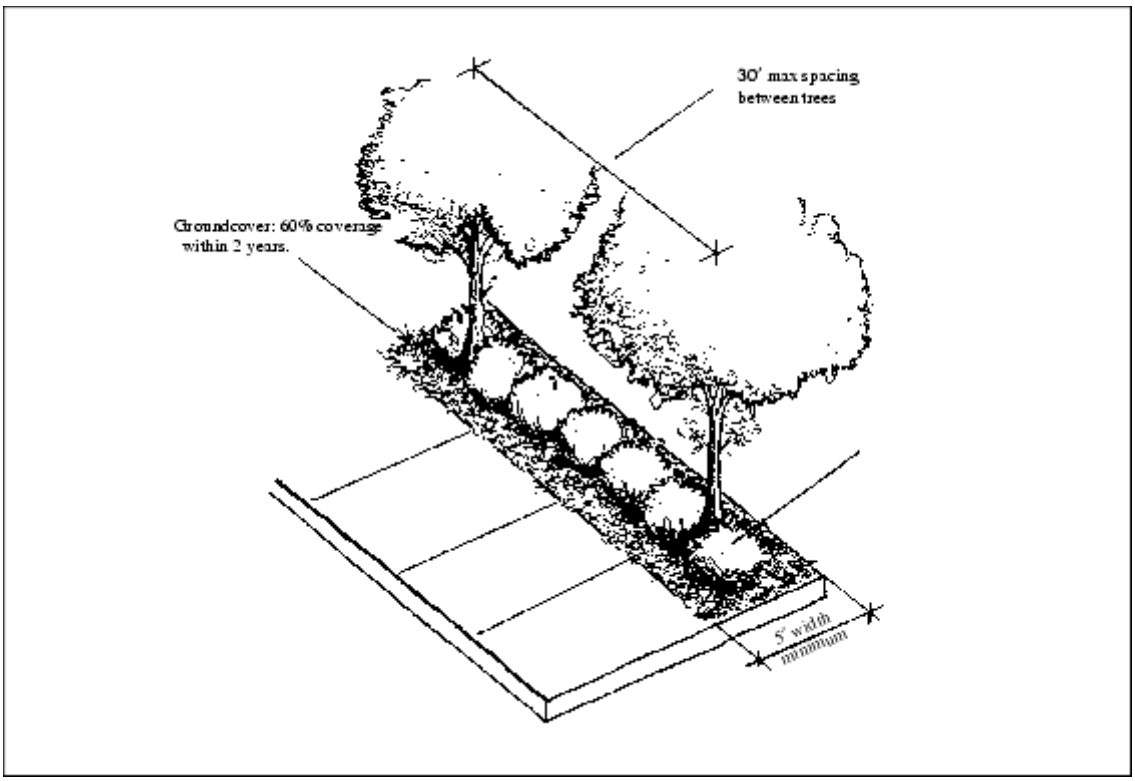

FIGURE 95.40.A

Perimeter Parking – Examples of Various Screen Wall Designs

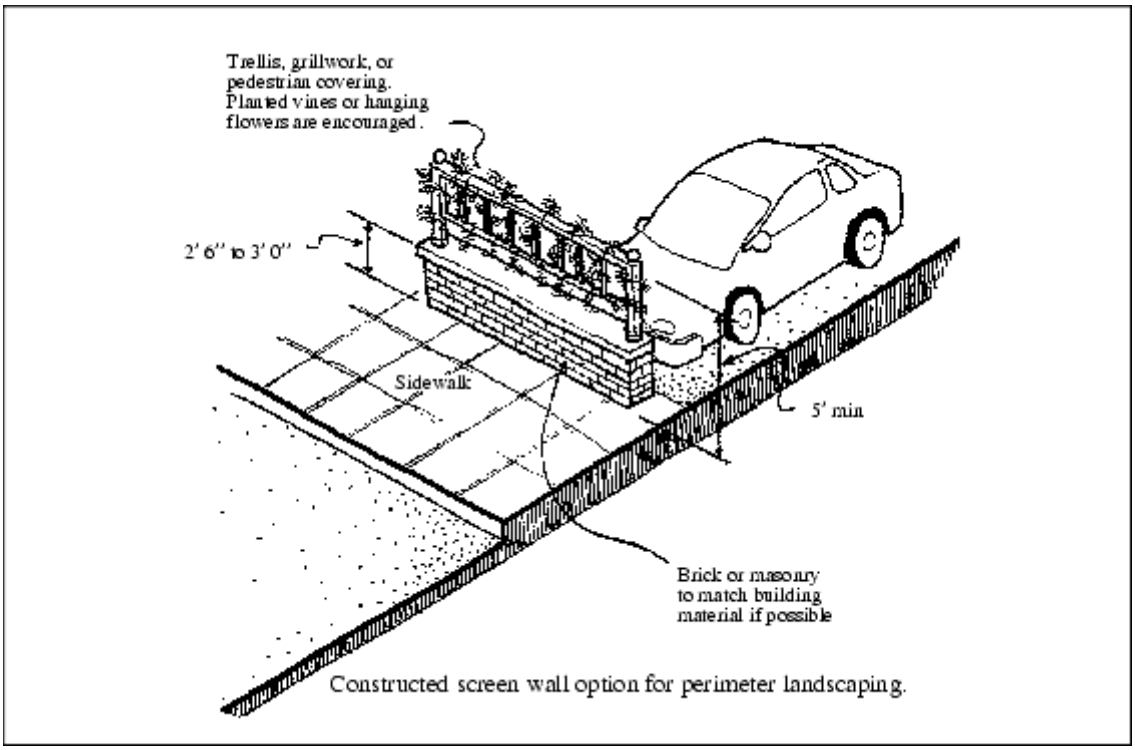

FIGURE 95.40.B

Perimeter Parking – Examples of Various Screen Wall Designs

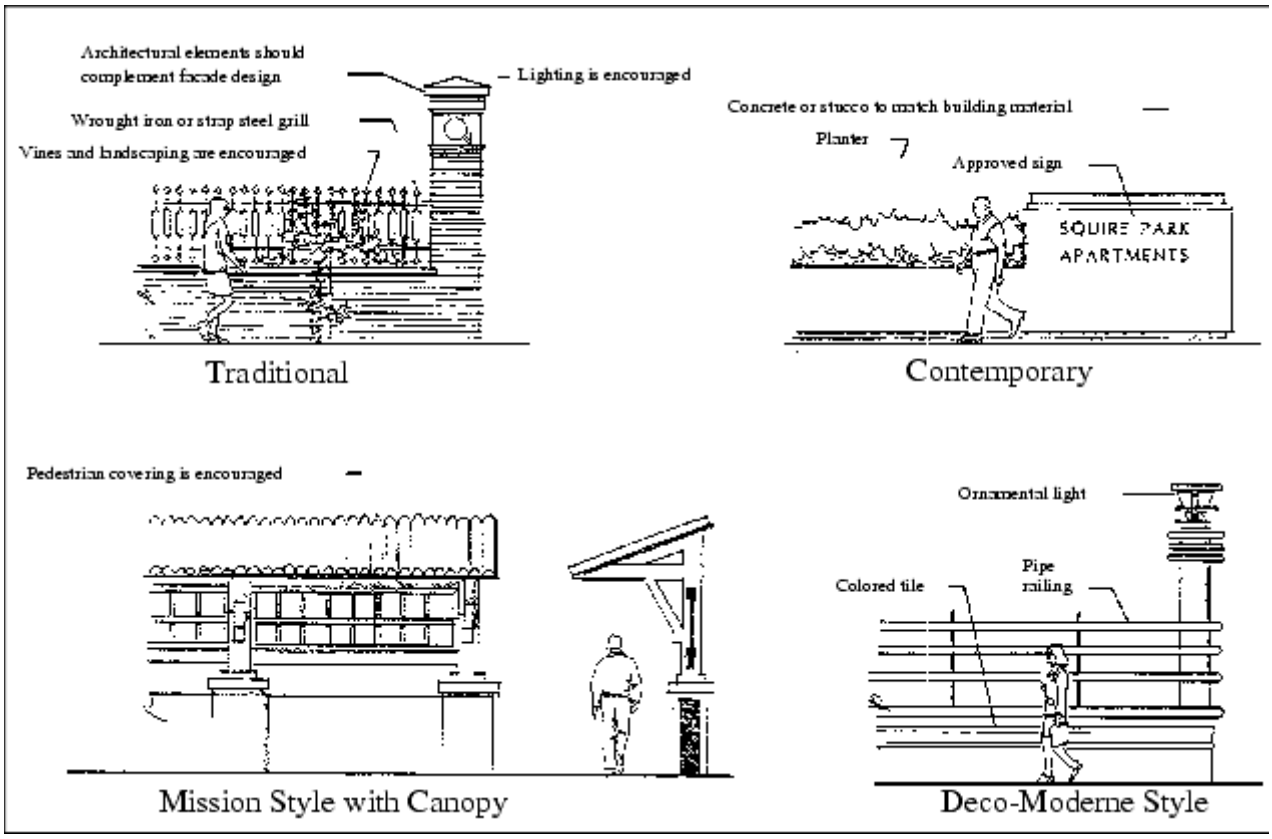

FIGURE 95.40.C

c. Modifications of Landscaping and Buffering Standards for Driving and Parking Areas.

1) Authority to Grant and Duration.

a) If the proposed development of the subject property requires approval through Design Review or Process I, IIA, IIB, or III, described in Chapters 142, 145, 150, 152, and 155 KZC, respectively, a request for a modification will be considered as part of that process under the provisions of this section. The City must find that the applicant meets the criteria listed in subsection (7)(c)(2) of this section. If granted under Design Review or Process I, IIA, IIB, or III, the modification is binding on the City for all development permits issued for that development under the building code within five years of the granting of the modification.

b) If subsection (7)(1)(a) of this section does not apply, the Planning Official may grant a modification in writing under the provisions of this section.

2) Modifications.

a) For a modification of subsection (7)(a) of this section, the landscape requirements may be modified if:

i. The modification will produce a landscaping design in the parking

area comparable or superior to that which would result from adherence to the adopted standard; or

ii. The modification will result in increased retention of significant existing vegetation; or

iii. The purpose of the modification is to accommodate low impact development techniques as approved by the Planning Official.

b) For a modification to subsection (7)(b) of this section, the buffering requirements for parking areas and driveways may be modified if:

i. The existing topography of or adjacent to the subject property decreases or eliminates the need for visual screening; or

ii. The modification will be of more benefit to the adjoining property by causing less impairment of view or sunlight; or

iii. The modification will provide a visual screen that is comparable or superior to the buffer required by subsection (7)(b) of this section; or

iv. The modification eliminates the portion of the buffer that would divide a shared parking area serving two or more adjacent uses, but provides the buffer around the perimeter of the shared parking area.

8. Nonconforming Landscaping and Buffers.

a. The landscaping requirements of subsections (5) and (7) of this section must be brought into conformance as much as is feasible, based on available land area, in either of the following situations:

1) An increase of at least 10 percent in gross floor area of any structure; or

2) An alteration to any structure, the cost of which exceeds 50 percent of the replacement cost of the structure.

b. Land use buffers must be brought into conformance with subsection (6) of this section in either of the following situations:

1) An increase in gross floor area of any structure (the requirement to provide conforming buffers applies only where new gross floor area impacts adjoining property); or

2) A change in use on the subject property and the new use requires larger buffers than the former use.

95.45 Installation Standards for Required Plantings

All required trees and landscaping shall be installed according to sound horticultural practices in a manner designed to encourage quick establishment and healthy plant growth. All required landscaping shall be installed in the ground and not in above-ground containers, except for landscaping required on the top floor of a structure. When an applicant proposes to locate a subterranean structure under required landscaping that appears to be at grade, the applicant will: (1) provide site-specific documentation prepared by a qualified expert to establish that the design will adequately support the long-term viability of the required landscaping; and (2) enter into an agreement with the City, in a form acceptable to the City Attorney, indemnifying the City from any damage resulting from development activity on the subject property which is related to the physical condition of the property. The applicant shall record this agreement with the King County Department of Elections and Records.

1. Street Trees. Street trees are not subject to the regulations of this chapter and are not counted toward any landscaping required by this chapter. Street trees are regulated by Chapter 110 KZC and Chapter 19.36 KMC.

2. Compliance. It is the applicant's responsibility to show that the proposed landscaping complies with the regulations of this chapter.

3. Timing. All landscaping shall be installed prior to the issuance of a certificate of occupancy, except that the installation of any required tree or landscaping may be deferred during the summer months to the next planting season, but never for more than six months. Deferred installation shall be secured with a performance bond pursuant to Chapter 175 KZC prior to the issuance of a certificate of occupancy.

4. Grading. Berms shall not exceed a slope of two horizontal feet to one vertical foot (2:1).

5. Soil Specifications. Soils in planting areas shall have adequate porosity to allow root growth. Soils which have been compacted to a density greater than one and three-tenths grams per cubic centimeters shall be loosened to increase aeration to a minimum depth of 24 inches or to the depth of the largest plant root ball, whichever is greater. Imported topsoils shall be tilled into existing soils to prevent a distinct soil interface from forming. After soil preparation is completed, motorized vehicles shall be kept off to prevent excessive compaction and underground pipe damage. The organic content of soils in any landscape area shall be as necessary to provide adequate nutrient and moisture-retention levels for the establishment of plantings. See subsection (8) of this section for mulch requirements.

6. Plant Selection.

   a. Plant selection shall be consistent with the Kirkland Plant List, which is produced by the City's Natural Resource Management Team and available in the Department of Planning and Community Development.

   b. Plants shall be selected and sited to produce a hardy and drought-resistant landscape area. Selection shall consider soil type and depth, the amount of maintenance required, spacing, exposure to sun and wind, the slope and contours of the site, and compatibility with existing native vegetation preserved on the site. Preservation of existing vegetation is strongly encouraged.

   c. Prohibited Materials. Plants listed as prohibited in the Kirkland Plant List are prohibited in required landscape areas. Additionally, there are other plants that may not be used if identified in the Kirkland Plant List as potentially damaging to sidewalks, roads, underground utilities, drainage improvements, foundations, or when not provided with enough growing space.

   d. All plants shall conform to American Association of Nurserymen (AAN) grades and standards as published in the "American Standard for Nursery Stock" manual.

   e. Plants shall meet the minimum size standards established in other sections of the KZC.

   f. Multiple-stemmed trees may be permitted as an option to single-stemmed trees for required landscaping provided that such multiple-stemmed trees are at least 10 feet in height and that they are approved by the Planning Official prior to installation.

7. Fertilization. All fertilizer applications to turf or trees and shrubs shall follow Washington State University, National Arborist Association or other accepted agronomic or horticultural standards.

8. Irrigation. The intent of this standard is to ensure that plants will survive the critical establishment period when they are most vulnerable due to lack of watering. All required plantings must provide an irrigation system, using either Option 1, 2, or 3 or a combination of those options. For each option irrigation shall be designed to conserve water by using the best practical management techniques available. These techniques may include, but not be limited to: drip irrigation to minimize evaporation loss, moisture sensors to prevent irrigation during rainy periods, automatic controllers to insure proper duration of watering, sprinkler head selection and spacing designed to minimize overspray, and separate zones for turf and shrubs and for full sun exposure and shady areas to meet watering needs of different sections of the landscape. Exceptions, as approved by the Planning Official, to the irrigation requirement may be approved xeriscape (i.e., low water usage plantings), plantings approved for low impact development techniques, established indigenous plant material, or landscapes where natural appearance is acceptable or desirable to the City. However, those exceptions will require temporary irrigation (Option 2 and/or 3) until established.

   a. Option 1. A permanent built-in irrigation system with an automatic controller designed and certified by a licensed landscape architect as part of the landscape plan.

   b. Option 2. An irrigation system designed and certified by a licensed landscape architect as part of the landscape plan, which provides sufficient water to ensure that the plants will become established. The system does not have to be permanent if the plants chosen can survive adequately on their own, once established.

   c. Option 3. Irrigation by hand. If the applicant chooses this option, an inspection will be required one year after final inspection to ensure that the landscaping has become established.

9. Drainage. All landscapes shall have adequate drainage, either through natural percolation or through an installed drainage system. A percolation rate of one-half inch of water per hour is acceptable.

10. Mulch.

   a. Required plantings, except turf or areas of established ground cover, shall be covered with two inches or more of organic mulch to minimize evaporation and runoff. Mulch shall consist of materials such as yard waste, sawdust, and/or manure that are fully composted.

   b. All mulches used in planter beds shall be kept at least six inches away from the trunks of shrubs and trees.

11. Protection. All required landscaped areas, particularly trees and shrubs, must be protected from potential damage by adjacent uses and development, including parking and storage areas. Protective devices such as bollards, wheel stops, trunk guards, root guards, etc., may be required in some situations.

12. Mitigation and Restoration Plantings in Critical Areas and Critical Area Buffers. Plants intended to mitigate for the loss of natural resource values are subject to the following requirements in addition to the other requirements of KZC 95.45. Where

these requirements conflict with other requirements of this chapter, these requirements take precedence. Refer to Chapters 85 and 90 KZC for additional requirements for these areas.

a. Plant Source. Plant materials must be native and selected from the Kirkland Plant List. Seed source must be as local as possible, and plants must be nursery propagated unless transplanted from on-site areas approved for disturbance. These requirements must be included in the Mitigation Plan specifications.

b. Installation. Plant materials must be supported only when necessary due to extreme winds at the planting site. Where support is necessary, stakes, guy wires, or other measures must be removed as soon as the plant can support itself, usually after the first growing season. All fertilizer applications to turf or trees and shrubs shall follow Washington State University, National Arborist Association or other accepted agronomic or horticultural standards.

c. Fertilizer Applications. Fertilizers shall be applied in such a manner as to prevent its entry into waterways and wetlands and minimize its entry into storm drains. No applications shall be made within 50 feet of a waterway or wetland, or a required buffer as established by the City codes (such as Chapter 90 KZC) or Kirkland Shoreline Master Program (SMP, KMC Title 24), whichever is greater, unless specifically authorized in an approved mitigation plan or otherwise authorized in writing by the Planning Official.

95.50 Tree and Landscape Maintenance Requirements

The following maintenance requirements apply to all trees and other vegetation required to be planted or preserved by the City:

1. Responsibility for Regular Maintenance. Required trees and vegetation, fences, walls, and other landscape elements shall be considered as elements of the project in the same manner as parking, building materials, and other site details. The applicant, landowner, or successors in interest shall be responsible for the regular maintenance of required landscaping elements. Plants that die must be replaced in kind.

2. Maintenance Duration. Maintenance shall be ensured in the following manner except as set forth in subsections (3) and (4) of this section:

   a. All required landscaping shall be maintained throughout the life of the development. Prior to issuance of a certificate of occupancy, the proponent shall provide a final as-built landscape plan and an agreement to maintain and replace all landscaping that is required by the City.

   b. Any existing tree or other existing vegetation designated for preservation on a Tree Plan I – Major, a Tree Plan II, or a Tree Plan III shall be maintained for a period of five years following issuance of the certificate of occupancy for the individual lot or development. After five years, all trees on the property are subject to KZC 95.20 unless:

      1) The tree and associated vegetation are in a grove that is protected pursuant to subsection (3) of this section; or

      2) The tree or vegetation is considered to be a public benefit related to approval of a planned unit development; or

      3) The tree or vegetation was retained to partially or fully meet requirements of

KZC 95.40, Required Landscaping.

3. Maintenance of Preserved Grove. Any applicant who has a grove of trees identified for preservation on an approved tree plan pursuant to KZC 95.35(4)(a)(1)(b) shall provide prior to occupancy the legal instrument acceptable to the City to ensure preservation of the grove and associated vegetation in perpetuity, except that the agreement may be extinguished if the Planning Official determines that preservation is no longer appropriate.

4. Maintenance of Critical Area and Critical Area Buffers. In critical areas and their buffers, native vegetation is not to be removed without City approval pursuant to KZC 95.35(4)(e). However, it is the responsibility of the property owner to maintain critical areas and their buffers by removing non-native, invasive, and noxious plants in a manner that will not harm critical areas or their buffers. See also subsection (6) of this section and Chapters 85 and 90 KZC for additional requirements for trees and other vegetation within critical areas and critical area buffers.

5. Non-Native Invasive and Noxious Plants. It is the responsibility of the property owner to remove non-native invasive plants and noxious plants from the vicinity of any tree or other vegetation that the City has required to be planted or protected. Removal must be performed in a manner that will not harm the tree or other vegetation that the City has required to be planted or protected.

6. Pesticides, Herbicides, and Fertilizer. The use of plant material requiring excessive pesticide or herbicide applications to be kept healthy and attractive is discouraged. Pesticide, herbicide, and fertilizer applications shall be made in a manner that will prevent their unintended entry into waterways, wetlands, and storm drains. No application shall be made within 50 feet of a waterway or wetland or a required buffer as established by City codes, whichever is greater, unless done so by a state certified applicator with approval of the Planning Official, and is specifically authorized in an approved mitigation plan or otherwise authorized in writing by the Planning Official.

7. Landscape Plans and Utility Plans. Landscape plans and utility plans shall be coordinated. In general, the placement of trees and large shrubs should adjust to the location of required utility routes both above and below ground. Location of plants shall be based on the plant's mature size both above and below ground. See the Kirkland Plant List for additional standards.

8. Tree Pruning. Topping or pruning to the extent defined by tree removal in KZC 95.10, is not allowed. If a required tree smaller than six inches in diameter is topped, it must be replaced pursuant to the standards in KZC 95.55(8). If a tree six inches or larger in diameter is topped, the owner must have a qualified professional develop and carry out a five-year pruning schedule.

95.52 Prohibited Vegetation

Plants listed as prohibited in the Kirkland Plant List shall not be planted in the City.

For landscaping not required under this chapter, this prohibition shall become effective on February 14, 2008. The City may require removal of prohibited vegetation if installed after this date. Residents and property-owners are encouraged to remove pre-existing prohibited vegetation whenever practicable.

95.55 Enforcement and Penalties

1. Intent. These enforcement and penalty provisions have several purposes. First, they are intended to discourage damage or removal of significant trees above and beyond what is permitted under this chapter. Second, these enforcement and

penalty provisions are intended to provide complete and effective restoration of areas in which violations of this chapter occur. Finally, these regulations are intended to provide a clear and efficient process for addressing violations of this chapter.

The City may utilize one or more of several remedies when responding to violations of this chapter. In almost all cases where a violation has occurred, the City will issue a civil citation that describes the nature of the violation, the actions necessary to remedy the violation, and the amount of any civil penalty, among other things. If the acts that constitute a violation appear to be ongoing, the City may also issue a notice of cease and desist. Failure to adhere to a notice to cease and desist will result in imposition of additional civil penalties. If there is a pending development or building permit, the City may also issue a stop work order or withhold issuance of permit approval or a certificate of occupancy. Finally, additional fines may be imposed if a violator does not follow through in a timely manner with restoration work or other compliance issues.

2. General Requirements. Enforcement shall be conducted in accordance with procedures set forth in Chapter 170 KZC. Special enforcement provisions related to tree conservation are set forth below. To the extent there is a conflict between the provisions of this section and Chapter 170 KZC, this section shall control.

3. Authority. It shall be the duty of the Planning Official to administer the provisions of this chapter. The Planning Official shall have authority to enforce and carry out the provisions of this chapter.

4. Cease and Desist. The Planning Official may issue a notice to cease and desist using the procedure set forth in KZC 170.30 if the Planning Official finds that a violation of this code has occurred. Continued illegal tree activity following issuance of a cease and desist from the City for the tree activity shall result in fines of $1,000 per day of continued activity.

5. Stop Work Order. If a violation of this chapter or an approved tree plan occurs on property on which work is taking place pursuant to a City of Kirkland development or building permit, the Building Official may suspend some or all of the work as appropriate through issuance of a stop work order. The Building Official shall remove the stop work order when the City determines that the violation has been corrected or when the City has reached an agreement with the violator regarding rectification of the violation. Any stop work order issued under this section may be appealed using the procedures set forth in Chapter 21.06 KMC.

6. Civil Citation. The City's Code Enforcement Officer shall notify a person who violates this chapter by issuance of a civil citation. The civil citation shall be in writing, and issued by certified mail with return receipt requested, or by personal service. The civil citation shall contain the following:

   a. The name and address of the property owner or other person to whom the civil citation is directed;

   b. The street address or description sufficient for identification of the land upon which the violation has occurred or is occurring;

   c. A description of the violation and a reference to the provisions of this chapter that have been violated;

   d. A statement of the restoration action required to be taken to correct the violation as determined by the Planning Official;

   e. A statement of the civil penalty incurred for each violation;

f. A statement that the person to whom the civil citation is issued must correct the violation through restoration described in subsection (8) of this section and may pay the civil penalty or may appeal the civil citation as provided in this section.

Note: Section 95.55 continues on page 636.23.

7. Civil Penalty.

a. A person who fails to comply with the requirements of this chapter or the terms of a permit issued hereunder, who undertakes an activity regulated by this chapter without obtaining a permit, or fails to comply with a cease and desist or stop work order issued under this chapter shall also be subject to a civil penalty as set forth in Table 95.55.1. Each unlawfully removed or damaged tree shall constitute a separate violation.

b. Any person who aids or abets in the violation shall be considered to have committed a violation for purposes of the civil penalty.

c. The amount of the penalty shall be assessed in accordance with Table 95.55.1. The Planning Official may elect not to seek penalties if he or she determines that the circumstances do not warrant imposition of civil penalties in addition to restoration.

Table 95.55.1 – Penalties

Types of Violations	Allowable Fines per Violation
1. Removal of tree(s) approved to be removed, but prior to final tree plan approval or issuance of a City tree removal permit	$100.00 per tree
2. Removal or damage of tree(s) that are or would be shown to be retained on an approved tree plan or any other violation of approved tree protection plan	$1,000 per tree
3. Removal of tree(s) without applying for or obtaining a required City permit	$1,000 per tree

8. Tree Restoration.

a. Violators of this chapter or of a permit issued thereunder shall be responsible for restoring unlawfully damaged areas in conformance with a plan, approved by the Planning Official, which provides for repair of any environmental and property damage, and restoration of the site; and which results in a site condition that, to the greatest extent practical, equals the site condition that would have existed in the absence of the violation(s). In cases where the violator intentionally or knowingly violated this chapter or has committed previous violations of this chapter, restoration costs may be based on the City-appraised tree value of the subject trees in which the violation occurred, utilizing the industry standard trunk formula method in the current edition of Guide for Plant Appraisal. If diameter of removed tree is unknown, determination of the diameter size shall be made by the Planning Official by comparing size of stump and species to similar trees in similar growing conditions. The amount of costs above the approved restoration plan will be paid into the City forestry account.

b. Restoration Plan Standards. The restoration plan shall be in accordance to the following standards:

1) The number of trees required to be planted is equal to the number of tree credits of illegally removed trees according to Table 95.35.1.

2) The minimum size for a tree planted for restoration is 12-foot-tall conifer and three-inch caliper deciduous or broadleaf evergreen tree. The City may approve smaller restoration tree sizes at a higher restoration ratio, provided the site has capacity for the additional trees and the results of restoration at a higher restoration ratio is as good or better than at the normal ratio. The smallest allowable alternatives to the normal restoration requirements shall be two eight-foot conifers for one 12-foot conifer or two two-inch caliper deciduous for one three-inch caliper deciduous tree.

3) In the event the violators cannot restore the unlawfully removed or damaged trees, the violators shall make payment to the City forestry account. Unless otherwise determined to base the restoration costs on appraised value, the amount paid will be the City's unit cost for a restoration tree multiplied by the number of outstanding tree credits. The City's unit cost is based on the current market cost of purchase, installation and three-year maintenance for a minimum-sized tree for restoration.

4) The restoration plan shall include a maintenance plan and an agreement or security to ensure survival and maintenance of restoration trees for a three-year period unless the violation was on a site with an approved tree plan in which case, the maintenance period is five years.

9. Failure to Restore or Pay Fines.

a. Prohibition of Further Approvals. The City shall not approve any application for a subdivision or any other development permit or approval, or issue a certificate of occupancy for property on which a violation of this chapter has occurred until the violation is cured by restoration or other means accepted by the Planning Official and by payment of any penalty imposed for the violation.

b. Fines. A property owner or occupant who fails to restore or otherwise cure property on which a violation of this chapter has occurred shall be assessed a fine of $100.00 per day for each day that restoration is incomplete. Prior to assessing fines under this subsection, the City shall issue a written notice to the property owner or that restoration has not been completed. The notice shall include the following information: (1) a description of the nature of the violation; (2) a description of what actions are required to bring the property into compliance; and (3) a date by which compliance shall be required (the "compliance date"). The compliance date shall be no less than 30 days from the date the notice is served on the property owner or occupant. If the property owner or occupant does not, in the determination of the City, bring the property into compliance by the compliance date, then the City may issue an order imposing $100.00 per day fines at any time after the compliance date. The fines shall continue to accrue until the violation has been certified to be corrected by the Planning Department. The property owner or occupant may appeal the order imposing fines to the hearing examiner using the procedures set forth in subsection 10 of this section.

10. Appeal to Hearing Examiner.

a. A person to whom a civil citation or order imposing fines is directed may appeal the civil citation, including the determination that a violation exists or the amount of any monetary penalty imposed, to the Hearing Examiner.

b. A person may appeal the civil citation or order imposing fines by filing a written notice of appeal with the Department of Planning and Community Development

within 14 calendar days of the date of service of the civil citation or order imposing fines.

c. Fines that accrue on a daily basis shall not be imposed while an appeal is pending unless the Hearing Examiner determines that the appeal is frivolous or imposed solely for the purpose of delay.

d. If both a civil citation and an order to cease and desist have been issued in the same case, and both the civil citation and the order to cease and desist have been appealed, the appeals shall be consolidated for hearing.

e. The office of the Hearing Examiner shall give notice of the hearing to the appellants at least 17 calendar days prior to the hearing.

f. The Hearing Examiner shall conduct a hearing on the appeal pursuant to the rules of procedure provided for in the Administrative Procedures Act (Chapter 34.05 RCW) and in accordance with any rules for hearings promulgated by the Hearing Examiner. The City and the appellant may participate as parties in the hearing and each may call witnesses. The City shall have the burden of proof by a preponderance of the evidence that a violation has occurred.

11. Hearing Examiner Decision.

a. The Hearing Examiner shall determine whether the City has proven by a preponderance of the evidence that a violation has occurred and shall affirm, vacate, suspend, or modify the amount of any monetary penalty imposed by the civil citation, with or without written conditions.

b. In the event that the Hearing Examiner determines that a violation has occurred, the Hearing Examiner shall also consider the following in making his or her decision: (1) whether the appeal is frivolous or intended to delay compliance; (2) whether the appellant exercised reasonable and timely effort to comply with applicable development regulations; and (3) any other relevant factors.

c. The Hearing Examiner shall mail a copy of his or her decision to the appellant, by certified mail, postage prepaid, return receipt requested.

d. The decision of the Hearing Examiner may be reviewed in King County Superior Court using the standards set forth in RCW 36.70C.130. The land use petition must be filed within 21 calendar days of the issuance of the final land use decision by the Hearing Examiner (see Chapter 36.70C RCW for more information).

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March 15, 2007

Bruce Knowlton
CamWest Development, Inc.
9720 NE 120th Pl. Suite 100
Kirkland, WA
98034

CITY OF KIRKLAND ARBORIST
LAND USE PERMIT
P*P # ZON07-00022
ADDRESS 400 STATE ST S
PROJECT CAMWEST PUD - HISTORIC OVERLAY
APPLICANT CAMWEST FIFTH AVE. LLC
DATE SUBMITTED 6/26/07
RESPOND BY 7/10/07
RETURN TO (PLANNER) JLS
REVIEWED BY

RE: Tree Condition Evaluation Report
The Nettleton Property

Bruce:

This report is provided to you as a means of addressing the conditions of the trees on the Nettleton Property as required by the City of Kirkland, WA. This report presents results of condition evaluations and a site assessment conducted in late February, 2006. The purposes of the site visit and tree evaluations, and this report are as follows:

- To provide information on the tree conditions as pertaining to those that are viable or non-viable for preservation;
- To specify the acceptable limits of disturbance (LOD) for each of the trees as specified by the City of Kirkland;
- To make recommendations for limits of disturbance for each of the viable trees as they relate to several criteria including existing site parameters, tree species, tree health, type and degree of impact and timing of impacts.

You also requested that I evaluate which trees are appropriate to be transplanted. The trees which are good candidates to be transplanted, by virtue of their size, species and health, are identified on the Tree Evaluation Data forms. Whether or not transplanting trees is allowable, however, is an issue that will need to be addressed with the city.

I. Summary of this Report

This report addresses the conditions of 77 significant trees located on the subject property. In my opinion, thirteen significant trees on the projects site are, by virtue of their condition or health, not viable for retention.

II. Site Conditions

The project site is currently developed with four buildings including a large home, used as a funeral home, a chapel, a garage, two smaller buildings and a significant amount of asphalt parking area. The remainder of the site is well maintained and landscaped with a mixture of native and ornamental trees and shrubs and a large amount of lawn area, however, the entire site is developed, certain portions more or less than others.

Because it is developed for moderate use, all of the trees can be considered to have been affected by impacts associated with a developed site, to varying degrees.

The arrangement and distribution of the trees varies from scattered singles to small clusters. The species of significant trees include the following:

- Box elder (*Acer negundo*)
- Common horsechestnut (*Aesculus hippocastanum*)
- Silver birch (*Betula pendula*)
- Deodar cedar (*Cedrus deodara*)
- Katsura (*Cercidophyllum japonicum*)
- Alaska cedar (*Chamaecyparis nootkatensis*)
- Hinoki cypress (*Chamaecyparis obtusa*)
- Boulevard cypress (*Chamaecyparis pisifera 'boulevard'*)
- Dogwood (*Cornus* species)
- Unidentified deciduous tree
- Common Beech (*Fagus sylvatica*)
- English holly (*Ilex aquifolium*)
- Sweetgum (*Liquidambar styraciflua*)
- Apple (*Malus* species)
- Colorado spruce (*Picea pungens*)
- Colorado blue spruce (*Picea pungens* 'glauca')
- Western white pine (*Pinus monticola*)
- Ornamental pine (*Pinus* species)
- Scot's pine (*Pinus sylvestris*)
- London plane (*Platanus x acerfolia*)
- Black cottonwood (*Populus trichocarpa*)
- Cherry laurel (*Prunus laurocerasus*)
- Ornamental cherry (*Prunus* species)
- Douglas fir (*Pseudotsuga menziesii*)
- Red oak (*Quercus rubra*)
- Chinese willow (*Salix babylonica*)
- Arborvitae (*Thuja occidentalis*)
- Western red cedar (*Thuja plicata*)
-

Significant trees range in size from several trees at 6" dbh to a black cottonwood at a very large 96" dbh.

III. Proposed Development and Constraints Affecting Tree Retention

The proposed development plan includes retaining the large residence, known as the Nettleton House, possibly relocating it to another location on the site and developing the remainder of the site with multi-family housing. CamWest had expressed interest in retaining as many of the trees as possible to enhance the appearance of the development.

IV. Tree Evaluation Methods and Results

Evaluations were conducted on 77 significant trees. The numbers of those indicated on the accompanying map have been assigned to each of the trees with orange, numbered flagging.

The species of all of the trees shown on the accompanying map were gathered during the site visit. For each tree, descriptive information, including dbh, crown spread and symmetry, live crown ratio, foliage condition, trunk and root defects and any other conditions warranting mention, was gathered during the investigation and is presented in this report. This information is used to assess the health and stability of the trees and in making recommendations for retention or removal based upon the current condition of each individual tree (i.e. viability due to condition and/or health). Chapter 95.10 of the Kirkland Zoning Code defines a "viable tree" as "A significant tree that a qualified professional has determined to be in good health, with a low risk of failure due to structural defects, is relatively windfirm if isolated or remains as part of a grove, and is a species that is suitable for it's location. Obvious symptoms or signs of poor health and potential high risk of failure include, but are not limited to, rot, extensive decay cavities, signs of decline (such as sparse crowns), past mechanical failure, epicormic branch development and insect or disease problems. All trees were evaluated according to the methods specified in *A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas*, 2nd Edition (Matheny and Clark).

IV.i. Tree Evaluation Results

Following are the results of the condition evaluations for the thirteen trees found to be in poor condition and those in good condition. Those found to be in poor condition possess one or more defects that either represent a considerable, non-repairable defect or, in the presence of new targets, namely houses, will pose a hazard and therefore are recommended to be removed. It should be noted that all of the trees had gone dormant prior to my assessment, therefore it wasn't possible to accurately quantify their live crown ratios. The main indicator of tree health for those that are deciduous and in dormancy is the length of new growth produced during the last growing season.

<u>Trees Found to be in Poor Condition (Not Viable)</u>

The following ten trees have been found to be in poor condition and therefore not viable:

1. Tree #16 – This is a small ornamental apple tree that possesses a considerable amount of trunk decay and branch dieback. While it is not large enough to pose a hazard, based upon condition alone, this tree is considered to be non-viable.
2. Trees #23 and #24 – Both very large black cottonwoods that are in very poor condition and health. Both have suffered previous leader failures, are experiencing dieback of the terminal and much re-growth from the point of failure. Because these trees are terribly large and possess obvious defects and symptoms of poor health, in my opinion, they would pose considerable hazards and therefore are considered to be non-viable.

3. Tree #25 – This is Scot's pine that has been topped at least once to provide clearance for the power lines. Topping, particularly for evergreen species with excurrent[1] form, results in poor architecture and the creation of a large wound in a location that does not readily heal. Therefore, in my opinion this tree is non-viable.
4. Tree #26 – This is a western white pine that has also been topped to provide clearance for the power lines above. For same reason tree #25 is determined to be non-viable, this tree is also found to be such.
5. Tree #32 – An unidentified deciduous tree that has been topped and has an extensive trunk decay column, therefore considered to be non-viable.
6. Tree #33 – This western white pine has also been topped drastically reducing its height. For the same reasons that trees #25 and #26 are considered to be non-viable, this tree is also considered to be such.
7. Tree #38 – Also an unidentified deciduous tree that has developed extensive trunk decay and appears to be dead. For these reasons, this tree is considered to be non-viable.
8. Tree #44 – This tree is a Douglas fir that shows symptoms of poor health and decline in the form of extensive branch dieback in the upper portions of the crown and sparse foliage/crown and smaller than normal needle size. Smaller than normal leaf size, and twig and branch dieback are mentioned as signs of decline in *Evaluation of Hazard Trees in Urban Areas* (Matheny and Clark, 1994). In my opinion, this tree is not in good health and therefore considered to be non-viable.
9. Trees #51, 52 and 53 – These three Douglas firs are located in the center of the site, surrounded by impervious surfaces, both asphalt and a building. The crowns of these trees show symptoms of extremely elevated stress levels, indicative of trees that are declining. The crowns are very sparse, the foliage is chlorotic and I noted branch dieback. The conditions of these trees have deteriorated to a point where they will not be capable of recovery. Therefore, these trees are considered to be non-viable.
10. Tree #64 – This Douglas fir has been topped, and therefore considered to be non-viable for the same reasons as the other topped trees.

Because these trees are found to be non-viable, I recommend that they are all removed. The remaining 64 significant trees were found to be in suitable conditions for retention. Please see section VII of this report for discussions of these trees and the recommended limit of disturbance.

V. Tree Preservation and Protection Measures

The following tree protection measures are specified by the City of Kirkland in section 35.6 of chapter 95 of the Kirkland Zoning Code. The City requires establishment of a protection area referred to as the "limits of disturbance (LOD)," defined in 95.10 as the boundary between the area of minimum protection around a tree and the allowable site disturbance as determined by a qualified professional." Please see the accompanying Tree Evaluation Map for visual representations of the recommended limits.

Tree Protection during Development Activity. Prior to development activity or initiating tree removal on the site, vegetated areas and individual trees to be preserved shall be protected from potentially damaging activities pursuant to the following standards:

a. Placing Materials near Trees. No person may conduct any activity within the protected area of any tree designated to remain, including, but not limited to, operating or parking equipment, placing solvents, storing building material or soil deposits, or dumping concrete washout or other chemicals. During construction, no person shall attach any object to any tree designated for protection.

b. Protective Barrier. Before development, land clearing, filling or any land alteration, the applicant shall:

1) Erect and maintain a readily visible temporary protective tree fencing along the limits of disturbance which completely surrounds the protected area of all retained trees or groups of trees. Fences shall be constructed of chain link and be at least four feet high, unless other type of fencing is authorized by the Planning Official.

2) Install highly visible signs spaced no further than 15 feet along the entirety of the protective tree fence. Said sign must be approved by the Planning Official and shall state at a minimum "Tree Protection Area, Entrance Prohibited" and provide the City phone number for code enforcement to report violations.

3) Prohibit excavation or compaction of earth or other potentially damaging activities within the barriers; provided, that the Planning Official may allow such activities approved by a qualified professional and under the supervision of a qualified professional retained and paid for by the applicant.

4) Maintain the protective barriers in place until the Planning Official authorizes their removal.

5) Ensure that any approved landscaping done in the protected zone subsequent to the removal of the barriers shall be accomplished with light machinery or hand labor.

6) In addition to the above, the Planning Official may require the following:

a) If equipment is authorized to operate within the critical root zone, cover the areas adjoining the critical root zone of a tree with mulch to a depth of at least six inches or with plywood or similar material in order to protect roots from damage caused by heavy equipment.

b) Minimize root damage by excavating a two-foot-deep trench, at edge of critical root zone, to cleanly sever the roots of trees to be retained.

c) Corrective pruning performed on protected trees in order to avoid damage from machinery or building activity.

d) Maintenance of trees throughout construction period by watering and fertilizing.

c. Grade.

1) The grade shall not be elevated or reduced within the critical root zone of trees to be preserved without the Planning Official's authorization based on recommendations from a qualified professional. The Planning Official may allow coverage of up to one half of the area of the tree's critical root zone with light soils (no clay) to the minimum depth necessary to carry out grading or landscaping plans, if it will not imperil the survival of the tree. Aeration devices may be required to ensure the tree's survival.

2) If the grade adjacent to a preserved tree is raised such that it could slough or erode into the tree's critical root zone, it shall be permanently stabilized to prevent suffocation of the roots.

3) The applicant shall not install an impervious surface within the critical root zone of any tree to be retained without the authorization of the Planning Official. The Planning Official may require specific construction methods and/or use of aeration devices to ensure the tree's survival and to minimize the potential for root-induced damage to the impervious surface.

4) To the greatest extent practical, utility trenches shall be located outside of the critical root zone of trees to be retained. The Planning Official may require that utilities be tunneled under the roots of trees to be retained if the Planning Official determines that trenching would significantly reduce the chances of the tree's survival.

5) Trees and other vegetation to be retained shall be protected from erosion and sedimentation. Clearing operations shall be conducted so as to expose the smallest practical area of soil to erosion for the least possible time. To control erosion, it is encouraged that shrubs, ground cover and stumps be maintained on the individual lots, where feasible.

d. Directional Felling. Directional felling of trees shall be used to avoid damage to trees designated for retention.

e. Additional Requirements. The Planning Official may require additional tree protection measures that are consistent with accepted urban forestry industry practices.

VI. Construction Activities Likely to Occur within the LOD
Development of this project site with multi-family residences will require several forms of impacts. I anticipate the following forms of impacts and disturbances will be proposed within, or just beyond, the LOD of some of the retained trees:

- Grading;
- Excavation;
- Trenching;

- Site clearing;
- Construction and
- The introduction of impervious surfaces.

Some of the retained trees are likely to be affected by these impacts to varying degrees. The extent to which the trees are impacted depends upon several factors including, but not limited to depth of cuts for grading, excavation and trenching, the distance between the trees' trunks and the disturbances, the time of year some of the activities take place and the amount of LOD area affected (one side of tree versus around entire tree) for grading, excavation and trenching. Depending upon the type, degree and location of the impacts, both the health and stability of the trees can be affected.

Reducing the degree of impacts the trees suffer can be achieved through two approaches. They are proposing alternative development actions and using alternative means of developing the project.

Following are examples of alternative development actions:

- Eliminating impacts within the LOD;
- Reducing the use (and thereby the impacts) with the LOD, and
- Selecting impacts within LOD that have less of an impact upon the retained trees.

Following are examples of alternative forms of impacts that have less of an impact upon the retained trees:

- Tunneling for utility trenches within the LOD;
- Using piling/pier foundations within the LOD;
- Implementing measures designed to increase the permeability through impervious surfaces within the LOD;
- Implementing soil protection measures to limit compaction during site work within the LOD, and
- Hand-dig for trenches and foundations within the LOD and hand cut roots (as opposed to tearing them with soil excavation equipment).

Discussions of the acceptable limits of disturbance for each tree found to be viable, as it relates to these activities, is discussed in the next section.

VII. Limits of Disturbance

The City of Kirkland requires that the limits of disturbance be established at the specified LODs of the trees found to be in a condition and health status appropriate for retention. In many cases, the required protection zone is very broad. In my opinion, for many of the trees with such broad LODs, work can be done within it's perimeter while still providing sufficient protection for the trees. Limits of disturbance are determined by factoring in several criteria, which include the following:

- Species of tree
- Size/age of tree
- Condition and health of tree
- Extent of dripline
- Existing conditions within the dripline and just beyond its perimeters (such as existing features {i.e., buildings or impervious surface}, compacted soils or other factors that my restrict root growth

Following are the recommended LODs for all of the trees found to be viable based upon the existing site parameters/conditions. All of the recommended LODs are the location of minimum disturbance for these trees. For most trees, a range is specified, between the perimeter of no disturbance and the minimum LOD wherein the impacts are to be lessened through implementation of the alternative practices previously discussed. For others the perimeter of the no disturbance zone is enough to provide complete protection and doesn't require additional distance wherein the impacts should be lessened through the implementation of alternative construction practices;

Tree# and LOD Recommendations

1 This tree is a sweetgum that is in very good condition and health, and by virtue of it's size, is considered to be young and vigorous. Presently, there is impervious surface within it's dripline to the west and a rockwall to the east. The dripline spread, at a narrow 12 feet from the trunk, is unlikely to restrict the development, while still providing sufficient protection, is recommended as the LOD;

2 This tree is a red oak that is is in very good condition and health, and by virtue of it's size, is considered to be young and vigorous. Presently, there is impervious surface within it's dripline to the west and a rockwall to the east. The dripline spread, at a narrow 12 feet from the trunk, is unlikely to restrict the development, while still providing sufficient protection, is recommended as the LOD

3 This tree is an apple that is in generally good condition, but, by virtue of its size, is considered mature. It's dripline has a spread of 25'. Presently there is impervious surface well within it's dripline to the north and well-used lawn area to the south east and west, which is likely moderately compacted. The tree is small in height and not likely to pose a hazard. Because the low crown would require pruning if impacts, such as structures were proposed within the dripline, the recommended LOD for this tree is 13 feet from the trunk which should provide sufficient protection, particularly given the existing impacts therein;

4 This tree is a blue spruce that is in very good condition and health, and by virtue of it's size, is considered to be young and vigorous. Presently, there is a structure within it's dripline to the west and a rockwall to the west. The dripline spread, at 10 feet from the trunk, is unlikely to restrict the

development, while still providing sufficient protection, is recommended as the LOD;

5 This tree is also a blue spruce that is in very good condition and health, and by virtue of it's size, is considered to be young and vigorous. Presently, there is a structure within it's dripline to the west and a rockwall to the west. The dripline spread, at 10 feet from the trunk, is unlikely to restrict the development, while still providing sufficient protection, is recommended as the LOD;

6 This tree is another apple that is in generally good condition, but, by virtue of its size, is considered mature. It's dripline has a spread of 20'. Presently there is well-used lawn area, which is likely moderately compacted, throughout it's entire dripline. The tree is small in height and not likely to pose a hazard. Because the low crown would require pruning if impacts, such as structures were proposed within the dripline, the recommended LOD for this tree is the dripline at 10 feet from the trunk which should provide sufficient protection, particularly given the existing impacts therein;

7 This tree is a multi-trunked cherry laurel that, generally, is in good condition and health. It's crown spread is approximately 30 feet. The surrounding landscape is largely unimpacted. Because the crown is so low, any impacts proposed within the dripline would require extensive pruning. Therefore, the recommended LOD a distance of approximately 15 feet from the trunk which should provide sufficient protection;

8 This is a silver birch that appears to be in very good health and condition. The surrounding landscape is largely unimpacted. Its crown spread is approximately 40 feet. The tree is very near to the eastern property boundary, close enough that if this tree is retained, it is unlikely that the portion of the property between it and the property boundary will not be developed. Therefore, it is my opinion that a minor reduction of the dripline on the west side of the tree, to a distance of 15 feet, is acceptable for the LOD of this tree;

9 This tree is a deodar cedar that is in good condition and health, however, by virtue of its size, it's considered to be mature. The crown spread is 25 feet. Presently, there is a deck and a sidewalk within the dripline of this tree, however, each of these impact is minor as the deck is raised and the sidewalk is a small amount of impervious surface. For a tree of this size, the dripline is rather narrow, therefore, I recommend establishing the LOD an additional 2.5 feet beyond the edge of the dripline for a total of 15 feet from the base of the tree;

10 This tree is a blue spruce. that is in good condition and health, however, by virtue of its size, it's considered to be mature. The crown spread is 25 feet. Presently, there is a raised deck within the its dripline, however, because it is raised, represents an existing feature with minor impact upon the tree. Like number 9, for a tree of this size, the dripline is rather narrow, therefore, I also recommend establishing the LOD of this tree an additional 2.5 feet beyond the edge of the dripline for a total of 15 feet from the base of the tree;

11 This is a red oak that is in good condition and health. The surrounding landscape includes planting beds and lawn area. It is likely that the soils beneath the lawn area area moderately compacted. Given the existing surrounding site conditions, the dripline of the tree, at 13 feet from the trunk, will provide adequate protection as the LOD;

12 Tree #12 is a katsura that is in good health and condition. It's immediately adjacent to tree #11 and surrounded by the same site conditions. However, it's dripline is narrower at a spread of 15'. While this species' growth habit produces narrow driplines, in my opinion, it is not adequate to provide protection for this tree. I recommend establishing the LOD at an additional 2.5' beyond the dripline at a distance of 10 feet from the trunk;

13 This tree is a London plane that is in good condition and health. The surrounding site conditions are the same as that for #s 11 and 12. The dripline, at 25 feet, is rather limited for a tree of this size. Therefore, I recommend establishing the LOD at an additional 2.5 feet beyond the dripline at a distance of 15 feet from the trunk around the entire tree;

14 This tree is a red oak that is in good condition and health. It's dripline has a total spread of 35 feet. The surrounding landscape is the same as that for trees 11, 12 and 13, that being moderately impacted. A distance equal to the dripline, or approximately 18 feet from the trunk, is adequate to provide protection and therefore is recommended as the LOD;

15 Another red oak that is in good condition and health that also has a dripline spread of 35 feet and is in the same location and under the same conditions as number 14. Also like number 14, a distance equal to the dripline, or approximately 18 feet, is adequate to provide protection as the LOD for this tree;

16 Poor condition, non-viable and not recommended to be retained;

17 This tree is a multi-trunked cherry laurel that, generally, is in good condition and health. It's crown spread is approximately 30 feet. The surrounding landscape is largely unimpacted. Because the crown is so low, any impacts proposed within the dripline would require extensive pruning. Therefore, the recommended LOD is a distance equal to the dripline, or approximately 10 feet from the trunk, which should provide sufficient protection;

18 This tree is an ornamental cherry that is in good condition and health. The surrounding site conditions are relatively unimpacted. The dripline, at an approximate distance of 15 feet from the trunk, is adequate to provide protection for this tree and is recommended as the LOD;

19 This tree is an English holly that is in good condition and health. The surrounding site conditions are relatively unimpacted. The dripline, at a dustance of 15 feet, is more than adequate to provide protection for a tree of this size and species. Establishing the LOD at a distance of 15 feet from the tree and is enough to provide sufficient protection;

20 This tree is a multi-trunked cherry laurel that, generally, is in good condition and health. It's crown spread is approximately 25 feet. The surrounding landscape is largely unimpacted. Because the crown is so low, any impacts

proposed within the dripline would require extensive pruning. Therefore, the recommended LOD is the dripline, or a distance of approximately 13 feet, which should provide sufficient protection, and because the spread is so broad for a tree of this size and species, there is no additional protection beyond this distance required;

21 This tree is another multi-trunked cherry laurel that, generally, is in good condition and health. It's crown spread is approximately 25 feet. The surrounding landscape is largely unimpacted. Because the crown is so low, any impacts proposed within the dripline would require extensive pruning. Therefore, the recommended LOD is the dripline, or a distance of approximately 13 feet, which should provide sufficient protection, and because the spread is so broad for a tree of this size and species, there is no additional protection beyond this distance required;

22 This tree is an ornamental cherry that is generally in good condition and health. The surrounding landscape is largely unimpacted. Given the condition of this tree and that of the surrounding landscape, the dripline, at a distance of approximately 18 feet, is recommended as the LOD;

23 Poor condition, non-viable and not recommended to be retained;

24 Poor condition, non-viable and not recommended to be retained;

25 Poor condition, non-viable and not recommended to be retained;

26 Poor condition, non-viable and not recommended to be retained;

27 A portion of this box elder has been topped to provide clearance for the overhead utility lines, however, the remainder of the tree looks healthy. To the south is a public right-of-way and to the north is lawn. The dripline of this tree is rather narrow at a spread of approximately 15 feet. The recommended LOD is a distance of 10 feet from the trunk and no additional protection is necessary;

29 This western white pine is in good condition and health, bordered by the public right-of-way to the south and lawn to the north. The recommended LUD for this tree is an additional 2.5 feet beyond the dripline to approximately 15 feet from the trunk;

30 This is a young and vigorous deodar cedar that is in very good health and condition. At present, it's dripline is very narrow; approximately 8 feet from the trunk. As this tree grows, it will need more space for its crown. To meet this need, the LUD is an additional 2 feet from the trunk for a distance of approximately 10 feet from the trunk, but additional protection beyond the LUD is not necessary;

31 This is a very large and mature deodar cedar that is also in very good health and condition and bordered by public right-of-way to the south and lawn area to the north. Because there will no impacts to the south of the tree, the LOD is recommended to be at a distance of 18 feet from the trunk;

32 Poor condition, non-viable and not recommended to be retained;

33 Poor condition, non-viable and not recommended to be retained;

34 This tree is a multi-trunked cherry laurel that, generally, is in fair condition and health. It's crown spread is approximately 15 feet. The surrounding

landscape is largely unimpacted. Because the crown is so low, any impacts proposed within the dripline would require extensive pruning. Therefore, the recommended LOD is the dripline, or a distance of approximately 8 feet from the trunk, which should provide sufficient protection without any additional protection beyond the LOD;

35 This western red cedar is in fair condition and surrounded by relatively impacted landscape. At a total spread of 20 feet, the dripline is rather narrow for a tree of this size with its rooting habit. The LOD should be located an additional 5 feet for a total distance of 15 feet from the trunk;

36 This western white pine is in fair condition and surrounded by relatively unimpacted landscape. At a distance from the trunk of 15 feet, the dripline is broad enough to provide sufficient protection for the tree as the LOD;

37 This is common beech tree that is in very good health and condition, however, it also has a narrow crown spread (30 feet) for its size. As with tree #35, the LOD for this tree should also be located an additional feet beyond the edge of the dripline for a total distance of 15 feet from the trunk;

38 Poor condition, non-viable and not recommended for retention;

39 The Douglas fir is generally in good condition and surrounded by relatively unimpacted lawn area. Given the surface rooting habit of this species, the dripline, at a distance of 15 feet from the trunk, is broad enough to provide sufficient protection as the LOD;

40 Another common beech that is in good condition and health, also with a rather narrow crown for a tree of this size. The recommended LOD is an additional 2.5 feet from the trunk beyond the dripline for a total distance of 20 feet from the trunk, which should provide sufficient protection without any additional protection beyond the LOD;

41 A rather large western red cedar that is generally in good condition, and surrounded by relatively unimpacted lawn area. The dripline, at a distance of approximately 10 feet from the trunk, is sufficient to provide protection without any additional protection beyond the LOD;

42 This red oak is considerably large and in very good health and condition; it is in the same location as tree #41. The crown spread is broad at approximately 50 feet. Because it is so broad, the LOD can be within the dripline while still providing adequate protection for the tree. The LOD is recommended to be approximately 18 feet from the base of the tree.

43 The Douglas fir is generally in good condition and surrounded by relatively unimpacted lawn area. Given the size of this tree and the surface rooting habit of this species, the dripline, at a distance of 18 feet from the trunk, is broad enough to provide sufficient protection as the LOD;

44 Poor condition, non-viable and not recommended for retention;

45 This is a large Chinese willow with a very broad dripline at 32.5 feet from the trunk. The surrounding landscape is relatively unimpacted with lawn area. Because the crown spread/dripline is so broad, the LOD can be placed nearer to the tree and still provide adequate protection for the tree. I recommend a distance of 25 feet between the trunk and the LOD;

46 This is a small ornamental cherry in a planting bed. It appears to be in good condition and health. Its dripline at approximately 10 feet is adequate to provide protection, and is therefore recommended as the LOD;

47 This tree is a rather large silver birch that is in good condition and health. It's surrounded by relatively unimpacted lawn area. The crown spread of 45 feet is rather broad, more than sufficient to provide adequate protection. The LOD can be within the dripline and still provide adequate protection. I recommend a distance of 20 feet from the base of the tree;

48 This is rather small pine tree that is in very good health and condition. There is a building immediately to its east and impervious surface near the tree to the west. Because of the existing impacts to the east, the LOD on that side can stay where the building is, while the those on all other sides of the tree should stay at the dripline, approximately 10 feet from the trunk, which should provide sufficient protection without any additional protection beyond the LOD;

49 This is medium-sized boulevard cypress that is in very good health and condition. There is a building immediately to its east and impervious surface near the tree to the west. Because of the existing impacts to the east, the LOD on that side can stay where the building is, while the those on all other sides of the tree should stay at the dripline, approximately 8 feet from the trunk which should provide sufficient protection without any additional protection beyond the LOD;

50 This is a Douglas fir that is in fair condition and health. It is also immediately bordered by the building to the east and much impervious surface to the north and east. It's likely that the fair condition of the tree is due to the stresses associated with the existing parameters. This tree could benefit from some additional protection. The recommended LOD is at its dripline, approximately 15 feet from the trunk, which, given the existing site conditions, should provide sufficient protection without any additional protection beyond the LOD;

51 This is another Douglas fir that is in fair condition and health, which is probably associated with the stresses associated with the adjacent site parameters as it is also immediately bordered by the building to the east and much impervious surface to the north and east. It's likely that the fair condition of the tree is due to the stresses associated with the existing parameters. This tree could benefit from some additional protection, as well. The recommended LOD is at its dripline, 15 feet from the trunk which, given the existing site conditions, should provide sufficient protection without any additional protection beyond the LOD;

52 Another Douglas fir that is in fair condition and health, also likely related to the stresses associated with the adjacent site parameters as it is also immediately bordered by the building to the east and much impervious surface to the north and east. It's likely that the fair condition of the tree is due to the stresses associated with the existing parameters. This tree could also benefit from some additional protection. The recommended LOD is at its

dripline, 15 feet from the trunk which, given the existing site conditions, should provide sufficient protection without any additional protection beyond the LOD;

53 Another Douglas fir that is in fair condition and health, also likely related to the stresses associated with the adjacent site parameters as it is also immediately bordered by the building to the east and much impervious surface to the north and east. It's likely that the fair condition of the tree is due to the stresses associated with the existing parameters. This tree could also benefit from some additional protection. The recommended LOD is 15 feet from the trunk around the entire tree which, given the existing site conditions, should provide sufficient protection without any additional protection beyond the LOD;

55 This hynoki cypress is relatively young and in good condition in health. It's completely surrounded by existing features including impervious surface and a building. It also has a very narrow dripline and should maintain this width for the remainder of its life. Therefore, the LOD can be set at the edge of the dripline, approximately 8 from the trunk, and given the existing site conditions, no additional protection beyond the LOD is necessary. This tree may be better served elsewhere on the site, and because of its size, is an excellent candidate for transplanting;

56 This deodar cedar is also relatively young and in good condition in health. It's completely surrounded by existing features including impervious surface and a building, as well. It also has a very narrow dripline, however, given the growth habit of this tree, it will increase over time, therefore it will need more cliearance. Therefore, the LOD should be set at least an additional five feet beyond the dripline for a total distance of 10 feet from the trunk which, given the existing site conditions, should provide sufficient protection without any additional protection beyond the LOD is necessary. This tree may also be better served elsewhere on the site, and because of its size, is an excellent candidate for transplanting;

57 This is an evergreen arborvitae that is in good condition and health and is completely surrounded by existing features including impervious surface and a building. It also has a very narrow dripline and should maintain this width for the remainder of its life. Therefore, the LOD can be set at the edge of the dripline, approximately 5 from the trunk. Given the existing site conditions, no additional protection beyond the LOD is necessary. This tree may be better served elsewhere on the site, and because of its size, is an excellent candidate for transplanting;

58 This is also an evergreen arborvitae that is in good condition and health and is completely surrounded by existing features including impervious surface and a building. It also has a very narrow dripline and should maintain this width for the remainder of its life. Therefore, the LOD can be set at the edge of the dripline, approximately 5 from the trunk. Given the existing site conditions, no additional protection beyond the LOD is necessary. This tree

may be better served elsewhere on the site, and because of its size, is an excellent candidate for transplanting;

59 This is a rather large Douglas fir that is in fair condition and health. While at present, there are features, namely impervious surface, within its dripline, if retained, it could benefit from some additional protection. I recommend establishing the LOD at least 15 feet from the trunk;

60 This is also a rather large Douglas fir that is in fair condition and health. At present, there are features, namely impervious surface, within the dripline of this tree as well. If retained, it could also benefit from some additional protection. I recommend establishing the LOD at least 15 feet from the trunk;

61 This is a pine that is in very good condition and health and is bordered by existing features (impervious surface) to the north and west. This tree has a relatively narrow spread and doesn't appear to be likely to need much additional crown clearance as it matures. I recommend an LOD of 8 feet from the trunk of this tree. Given the existing site conditions, no additional protection beyond the LOD is necessary;

62 This is young and vigorous weeping Alaska cedar that is in very good condition and health. It's completely surrounded by impervious surface. The crown spread of this species maintains a narrow form, therefore, the LOD can reflect that allowance. I recommend an LOD equal to 10 feet from the trunk. Given the existing site conditions, no additional protection beyond the LOD is necessary.;

63 This is young and vigorous Colorado Blue spruce that is in very good condition and health. It's completely surrounded by impervious surface. The crown spread of this species maintains a rather narrow form, therefore, the LOD doesn't need to broad to accommodate its developing crown. I recommend an LOD equal to 10 feet from the trunk. Given the existing site conditions, no additional protection beyond the LOD is necessary.;

64 Poor condition, non-viable and not recommended for retention;

65 This is a relatively young red oak that is in good condition and health. The only feature in its vicinity is a rockwall within its dripline to the east. Maintaining the LOD at a distance of 15 feet from the tree will provide adequate protection. Given the age and health of the tree, no additional protection beyond the LOD is necessary;

66 This is another relatively young red oak that is in good condition and health. The only feature in its vicinity is a rockwall within its dripline to the east. Maintaining the LOD at a distance of 15 feet from the tree will provide adequate protection. Given the age and health of the tree, no additional protection beyond the LOD is necessary;

67 This is relatively young katsura tree that is in good condition and health. The only feature in the vicinity of this tree is the rockwall within its dripline to the east. Maintaining the LOD at a distance of 15 feet from the tree will provide adequate protection without requiring any additional protection beyond the LOD;

68 This is a very young red oak that is in good condition and health. The rockwall is also within its dripline to the east. Maintaining the LOD at a distance of 10 feet from the tree will provide adequate protection without requiring any additional protection beyond the LOD;

69 This is another very young red oak that is in good condition and health. The rockwall is within its dripline to the east, as well. Maintaining the LOD at a distance of 10 feet from the tree will provide adequate protection without requiring any additional protection beyond the LOD;

70 This is another relatively young katsura tree that is in good condition and health. There are no features in its vicinity. Maintaining the LOD at a distance of 10 feet from the tree will provide adequate protection;

71 Yet another relatively young katsura tree that is in good condition and health with no features in its vicinity. Maintaining the LOD at a distance of 10 feet from the tree will provide adequate;

72 An unidentified deciduous tree that is young and in very good condition and health. Judging by its architecture, it doesn't appear as though its crown will require much additional space as it develops, therefore, establishing the LOD at the dripline of 10 feet from the trunk is recommended without requiring any additional protection beyond the LOD;

73 A young and vigorous cherry tree that is in good condition and health. Like #72, it doesn't appear as though its crown will require much additional space as it develops, therefore, establishing the LOD at the dripline of 10 feet from the trunk is recommended for this tree, as well, without requiring any additional protection beyond the LOD;

74 Another unidentified deciduous tree that is young and in very good condition and health. Judging by its architecture, it doesn't appear as though this tree's crown will require much additional space as it develops either, therefore, establishing the LOD at the dripline of 10 feet from the trunk is recommended without requiring any additional protection beyond the LOD;

75 A young katsura tree that is in good condition and health with no features in its vicinity. Being a species that doesn't produce a broad crown, maintaining the LOD at a distance of 10 feet from the tree will provide adequate protection and clearance for it as it matures without requiring any additional protection beyond the LOD;

76 A small ornamental cherry tree that's in good condition and health with no features in its vicinity. Establishing the LOD at a distance of 10 feet from its trunk will provide adequate protection without requiring any additional protection beyond the LOD;

77 A small, young and vigorous dogwood that's in very good condition and health. This tree should get too large, nor should it require much distance for protection. Establishing the LOD at 10 feet from the trunk should be adequate to provide sufficient protection without requiring any additional protection beyond the LOD;

78 A horsechestnut that is very young and vigorous. While it is small now this tree could reach a considerably large size at maturity. Because this tree is so

young, in terms of underground impacts, the limits could be as a distance from the trunk as little as 7.5 feet, however, in order to provide clearance the LOD between the tree and any structures should be at least 15 feet from the trunk, but no additional protection is necessary;

79 A young and vigorous English holly that is in very good condition and health. As the tree develops, the crown should not require too much space for clearance so an LOD of 10 feet from the trunk is acceptable without requiring any additional protection beyond the LOD.

For virtually all of the trees, the limits of disturbance have been set in locations where disturbance within them should not be necessary. In the case of most of the trees, extensive impacts are not recommended. In my opinion, in the case of all of the trees, the recommendations for work within the LOD apply to impacts and development within 10 feet of the recommended LODs. Therefore the limits, as specified above, are between the minimum distance where no, or very limited impacts should take place , to a location 10 feet beyond this point where impacts and structures are allowed but the measures in the next section should be employed.

VII. Work within the LOD

Measures employed for lessening impacts to trees while working within the LOD depend upon several factors. The location wherein these practices should be utilized is the added protection area beyond (outside of) the perimeter of the area of no disturbance, upon which the protective fencing barrier should be erected. The factors considered as contributors to the location of the LOD and the extent of work and impacts allowed within this area are as follows:

- Extent of LOD in terms of distance from trunk;
- Type of impacts/work to take place within the LOD;
- Amount of LOD to be disturbed (just one side of tree or around entire tree), and
- Condition of tree to be impacted.

These factors should be considered when planning the project and particularly, impacts within the LODs. For most of the trees, the LODs are close enough to the tree that impacts within this area should be limited, if at all necessary.

If work within the LOD of any tree is necessary, the following measures are recommended:

- Maintain the protection fencing around the tree during construction activity;
- If construction machinery is to be used within the LOD, apply a minimum of 6 inches of wood chip mulch over the area within the LOD where the machinery will be used;
- Replace the protection fencing to the required location immediately following construction activity within the LOD, and
- Hand cut all damaged roots larger than 1 inch in diameter.

VIII. Use of this Report

This report is provided as a means of addressing the conditions of the trees on the site of the Nettleton House property in the City of Kirkland, WA, and to make recommendations for retention or removal and protection through development.

This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. There are several conditions affecting a tree's health which are pre-existing and cannot necessarily be ascertained with a surface analysis. These conditions include root and stem rot, internal cracks or construction root damage which may be hidden beneath the soil. In addition, certain circumstances can cause a rapid deterioration of a tree's condition. While Arboricultural Consulting used every reasonable means to examine these trees, this report is an opinion and the condition of these trees cannot be guaranteed or warranted. Given these facts in combination with the fact that external factors, such as weather events (i.e. drought and windstorms) and construction damage, all of which can contribute to the decline and/or failure of a tree, it is impossible to determine the eventual failure of any given tree. Therefore, a recommendation for retention or removal was based upon the immediate conditions of the trees and whether or not that condition presented a hazardous condition warranting removal. The determination of the tree condition was based solely upon the outward appearance of the trees. This report does not guarantee against the failure of trees not recommended for removal as part of this report. No attempt has been made to determine hidden or concealed conditions. Reports may be adversely affected due to the physical condition of the site and the difficulty of access that may lead to observation or evaluation difficulties. The work for this report has conformed to the standard of care employed by ISA Certified Arborists. No other representation or warranty is made concerning the work or this report and any implied representation or warranty is disclaimed. Finally, this report is only intended to provide opinions and make recommendations and cannot guarantee against damage to the trees, damage to property or injury of the tree workers occurring during work on the trees.

Cordially,

Tony Shoffner

Tony Shoffner
Consulting Arborist, Horticulturist
ISA Certified Arborist #PN-0909

Trees and Development – A Technical Guide to Preservation of Trees During Land Development. Nelda Matheny and James R. Clark, 1998, International Society of Arboriculture.
A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas, 2nd Edition. Nelda Matheny and James R. Clark, 1994, International Society of Arboriculture.

TREE EVALUATION DATA
Nettleton Property

	Tree #	Tree Spp	Dbh (In)	Spread (Ft)	Limits of Disturbance	Condition Rating	Tree Condition Notes	Recommendation Per Condition	Transplantable Yes or No
1	1	LIST	10	20	12	1	Very good condition and health	Retain	Yes
1	2	QURU	12	20	12	1	Very good condition and health	Retain	Yes
3	3	MASP	20	25	13	2	Generally good condition and health	Retain	No
1	4	PIPU	10	20	10	1	Very good condition and health	Retain	Yes
1	5	PIPU	12	20	10	1	Very good condition and health	Retain	Yes
3	6	MASP	18	20	10	2	Generally good condition and health	Retain	No
3	7	PRLA	10	30	15	2	Generally good condition and health	Retain	No
1	8	BEPE	36	40	15	1	Very good condition and health	Retain	No
2	9	CEDE	22	25	15	1	Very good condition and health	Retain	No
2	10	PIPU	24	25	15	1	Very good condition and health	Retain	No
1	11	QURU	16	25	13	1	Very good condition and health	Retain	No
1	12	CEJA	16	15	10	1	Very good condition and health	Retain	No
2	13	PLxAC	26	25	15	1	Very good condition and health	Retain	No
2	14	QURU	16	35	18	1	Very good condition and health	Retain	No
1	15	QURU	20	35	18	1	Very good condition and health	Retain	No
3	16	MASP	12	10	N/A	4	Trunk decay and branch dieback	Remove	No
3	17	PRLA	10	20	10	2	Generally good condition and health	Retain	No
3	18	PRSP	24	30	15	2	Generally good condition and health	Retain	No
3	19	ILAQ	14	30	15	2	Generally good condition and health	Retain	No
3	20	PRLA	8	25	13	2	Generally good condition and health	Retain	No
3	21	PRLA	10	25	13	2	Generally good condition and health	Retain	No
3	22	PRSP	24	35	18	2	Generally good condition and health	Retain	No
3	23	POTR	96	45	N/A	4	Previous failure, terminal dieback, old	Remove	No
3	24	POTR	90	45	N/A	4	Previous failure, terminal dieback, old	Remove	No
3	25	PISY	18	15	N/A	4	Topped	Remove	No
3	26	PIMO	18	10	N/A	4	Topped	Remove	No
3	27	ACNE	16	15	10	3	A portion has been topped	Retain	No
2	29	PIMO	30	25	15	2	Generally good condition and health	Retain	No
3	30	CEDE	12	15	15	1	Very good condition and health	Retain	Yes
2	31	CEDE	42	35	18	1	Very good condition and health / lean	Retain	No
3	32	DEC	30	30	N/A	4	Extensive decay column, topped	Remove	No
3	33	PIMO	18	30	N/A	4	Topped	Remove	No
3	34	PRLA	12	15	8	3	Moderate trunk decay	Retain	No
2	35	THPL	36	20	15	3	Codominant leaders	Retain	No
2	36	PIMO	30	30	15	3	Somewhat sparse crown	Retain	No
1	37	FASY	28	30	15	1	Very good condition and health	Retain	No
3	38	DEC	34	35	N/A	4	Trunk decay, appears to be dead	Remove	No
2	39	PSME	30	30	15	2	Generally good condition and health	Retain	No
1	40	FASY	24	35	20	1	Very good condition and health	Retain	No
2	41	THPL	32	20	10	2	Generally good condition and health	Retain	No
1	42	QURU	54	50	18	1	Very good condition and health specimen	Retain	No
2	43	PSME	34	35	18	2	Generally good condition and health	Retain	No
3	44	PSME	36	30	N/A	4	Extensive upper branch dieback, sparse crown	Retain	No
2	45	SABA	34	65	25	1	Very good condition and health	Retain	No
2	46	PRSP	12	20	10	1	Very good condition and health	Retain	Yes
1	47	BEPE	34	45	20	1	Very good condition and health	Retain	No
-	48	PISP	12	20	10	1	Very good condition and health	Retain	Yes
2	49	CHPI	14	15	8	1	Very good condition and health	Remove	Yes

Arboricultural Consulting

51-53 junk piled on CRZ

TREE EVALUATION DATA
Nettleton Property

Tree #	Tree Spp	Diameter (In)	Spread (Ft)	Limits of Disturbance	Condition Rating	Tree Condition Notes	Recommendation Per Condition	Transplantable Yes or No
50	PSME	28	30	15	3	Symptoms of stress (low LCR)	Retain	No
51	PSME	24	30	15	4	Symptoms of decline (sparse & chlorotic crown)	Remove	No
52	PSME	28	30	15	4	Symptoms of stress (low live crown ratio)	Remove	No
53	PSME	38	25	15	4	Symptoms of stress (low live crown ratio)	Remove	No
55	CHOB	16	15	8	1	Very good condition and health	Retain	Yes
56	CEDE	10	10	10	1	Very good condition and health	Retain	Yes
57	THOC	12	10	5	1	Very good condition and health	Retain	Yes
58	THOC	12	10	5	1	Very good condition and health	Retain	Yes
59	PSME	52	35	15	3	Symptoms of stress (low live crown ratio)	Retain	No
60	PSME	36	35	15	3	Symptoms of stress (low live crown ratio)	Retain	No
61	PISP	16	10	8	1	Very good condition and health	Retain	Yes
62	CHNO	6	15	10	1	Very good condition and health	Retain	Yes
63	PIPU.GL	6	10	10	1	Very good condition and health	Retain	Yes
64	PSME	22	25	N/A	4	Topped	Remove	No
65	QURU	14	30	15	1	Very good condition and health	Retain	No
66	QURU	12	30	15	1	Very good condition and health	Retain	No
67	CEJA	12	25	15	1	Very good condition and health	Retain	No
68	QURU	6	20	10	1	Very good condition and health	Retain	Yes
69	QURU	8	20	10	1	Very good condition and health	Retain	Yes
70	CEJA	14	25	10	1	Very good condition and health	Retain	No
71	CEJA	10	20	10	1	Very good condition and health	Retain	No
72	DEC	8	20	10	1	Very good condition and health	Retain	Yes
73	PRSP	10	15	10	1	Very good condition and health	Retain	No
74	DEC	10	20	10	1	Very good condition and health	Retain	No
75	CEJA	8	15	10	1	Very good condition and health	Retain	Yes
76	PRSP	8	20	10	1	Very good condition and health	Retain	Yes
77	COSP	6	15	10	1	Very good condition and health	Retain	Yes
78	AEHI	8	20	15	1	Very good condition and health	Retain	Yes
79	ILAQ	8	15	10	1	Very good condition and health	Retain	Yes

Tree# - Corresponds to numbers as shown on map

Tree Species Codes -

ACNE=Acer negundo (box elder)
AEHI=Aesculus hippocastanum (horse chestnut)
BEPE=Betula pendula (silver birch)
CEDE=Cedrus deodara (deodar cedar)
CEJA=Cercidiphyllum japonicum (katsura)
CHNO=Chamaecyparis nootkatensis (Alaska cedar)
CHOB=Chamaecyparis obtusa (Hinoki cypress)
CHPI=Chamaecyparis pisifera 'boulevard' Boulevard cypress
COSP=Cornus species (dogwood)
DEC=Unidentified deciduous species
FASY=Fagus sylvatica (common beech)
ILAQ=Ilex aquifolium (English holly)
LIST=Liquidambar styraciflua (Sweetgum)
MASP=Malus species (apple)
PIPU=Picea pungens (Colorado spruce)
PIPU.GL=Picea pungens 'glauca' (Colorado blue spruce)
PIMO=Pinus monticola (western white pine)
PISP=Pinus species (ornamental pine)
PISY=Pinus sylvestris (Scot's pine)
PLxAC=Platanus x acerfolia (London plane)
POTR=Populus trichocarpa (black cottonwood)
PRLA=Prunus laurocerasus (cherry laurel)
PRSP=Prunus species (ornamental cherry)
PSME=Pseudotsuga menziesii (Douglas fir)
QURU=Quercus rubra (red oak)
SABA=Salix babylonica (Chinese willow)
THOC=Thuja occidentalis (arborvitae)
THPL=Thuja plicata (western red cedar)

Diameter - Diameter in inches at 4.5' above grade
Spread - Approximate average crown spread in feet
Limits of Disturbance - Recommended limits of disturbance

Arboricultural Consulting

* additional D. fir have condition.
53- tagged
52- tagged

TREE EVALUATION DATA
Nettleton Property

Condition Rating

1=Excellent Condition

2=Good Condition (viable), candidate for rention

3=Fair Condition (viable), candidate for retentionpotential targets

4=Poor condition, removal recommended

Recommendation Per Condition - Retain or remove based upon condition

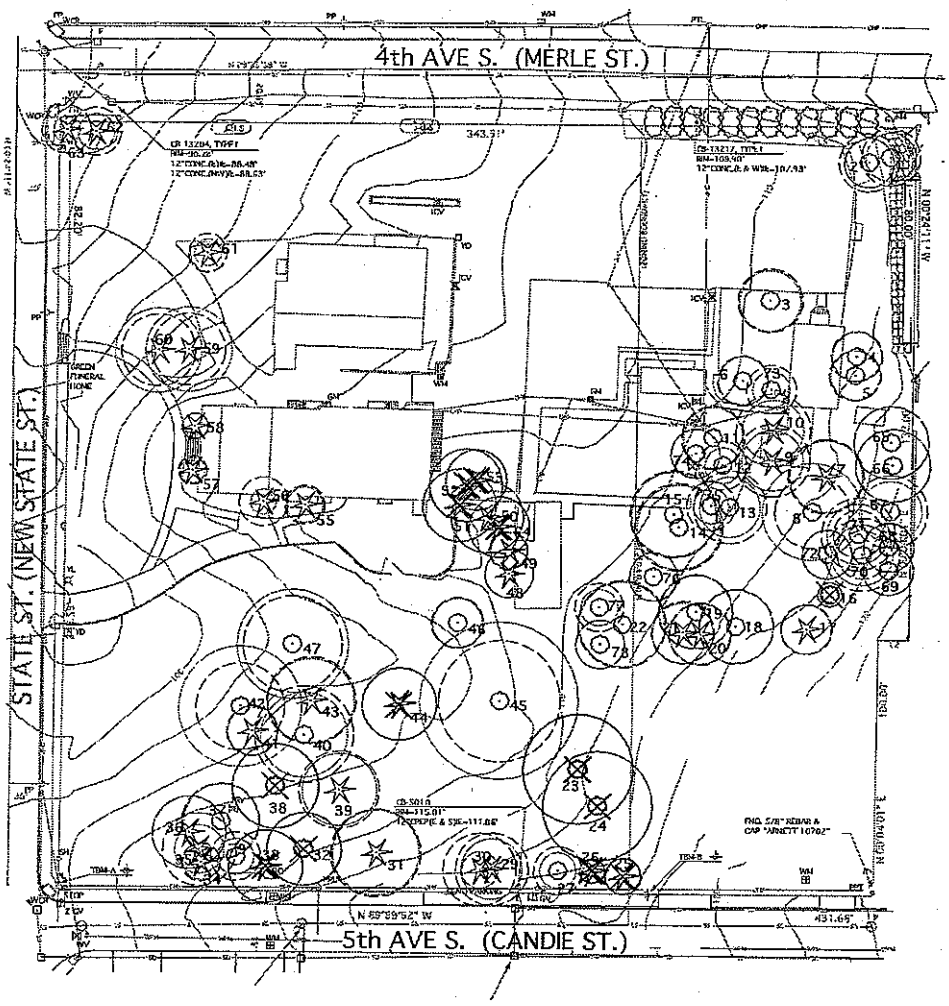
Transplantable - Whether or not the tree is transplantable based upon size and condition

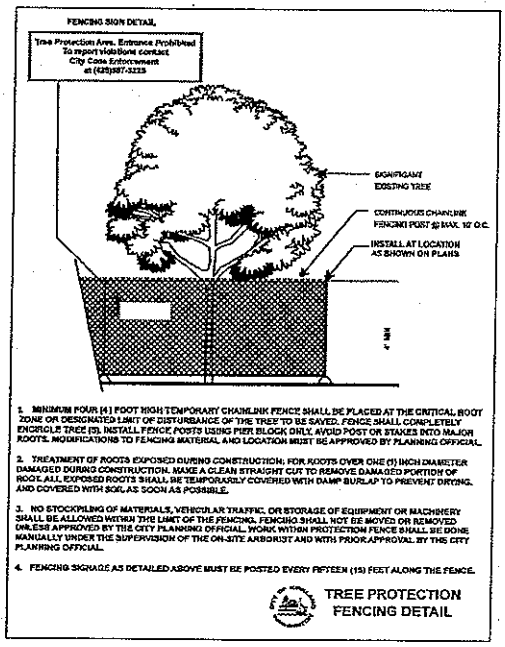
TREE CONDITION EVALUATION MAP

The Nettleton House Property

Scale 1" = 40'

0 20 40 60 80





LEGEND

Trees in Good Condition with dripline and limits of disturbance

Trees in Poor Condition

TREE CONDITION EVALUATION MAP
THE NETTLETON PROPERTY

CamWest Development, Inc.
9720 NE 120th Pl. Suite 100
Kirkland, WA 98034

Date: March 15, 2007
Anthony V. Shoffner,
ISA Certified Arborist #PN-0909A

Arboricultural Consulting
Tony Shoffner
Consulting Arborist, Horticulturist
ISA Certified Arborist #PN-0909
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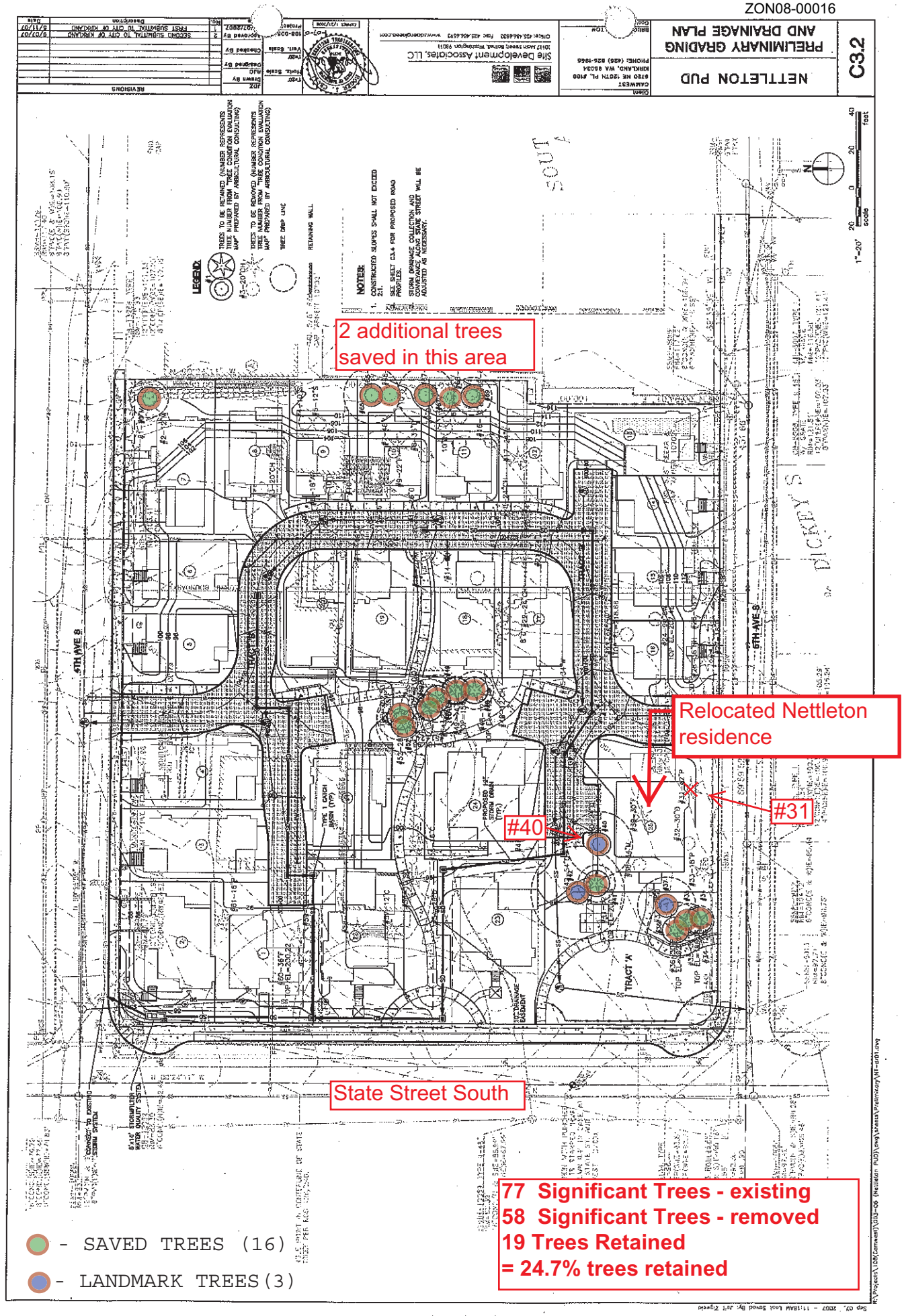
14823 10th Ave. SE
Mill Creek, WA 98012

Phone: (425) 338-0850 Mobile (206)755-2871
email: arboricultural.consulting@verizon.net


NETTLETON PUD
PRELIMINARY GRADING AND DRAINAGE PLAN
C3.2
Site Development Associates, LLC
2 additional trees saved in this area
Relocated Nettleton residence
#40
#31
State Street South
5TH AVE S
6TH AVE S
TRACT "A"
77 Significant Trees - existing
58 Significant Trees - removed
19 Trees Retained
= 24.7% trees retained
- SAVED TREES (16)
- LANDMARK TREES (3)

Chapter 95 – TREE MANAGEMENT AND REQUIRED LANDSCAPING

EXISTING CHAPTER OUTLINE

Sections:

- 95.05 Purpose and Intent
- 95.10 Definitions
- 95.15 Applicability – Permit Required
- 95.20 Exemptions
  1. Developed Property
  2. Emergency Tree Removal
  3. Utility Management
  4. Commercial Nurseries or Tree Farms
- 95.25 Alternative Compliance
- 95.30 City Forestry Account
- 95.35 Tree Retention, Protection and Density
  1. Introduction
  2. Tree Plan Required
     - b.1. Tree Plan I
     - b.2. Tree Plan II
     - b.3. Tree Plan III
     - b.4. Tree Plan IV
  3. Tree Plan Review Procedure and Appeals
  4. Tree Plan Review Standards
  5. Tree Density Requirement
  6. Tree Protection during Development Activity
- 95.40 Required Landscaping
  1. User Guide
  2. Use of Significant Existing Vegetation
  3. Landscape Plan Required
  4. Minimum Land Use Buffer Requirements
  5. Supplemental Plantings
  6. Land Use Buffering Standards
  7. Landscaping and Buffering Standards for Driving and Parking Areas
  8. Nonconforming Landscaping and Buffers
- 95.45 Installation Standards for Required Plantings
  1. Street Trees
  2. Compliance
  3. Timing
  4. Grading
  5. Soil Specifications
  6. Plant Selection
  7. Fertilization
  8. Irrigation
  9. Drainage
  10. Mulch
  11. Protection
  12. Mitigation and Restoration Plantings in Critical Areas and Critical Area Buffers
- 95.50 Tree and Landscape Maintenance Requirements
  1. Responsibility for Regular Maintenance
  2. Maintenance Duration
  3. Maintenance of Preserved Grove
  4. Maintenance of Critical Area and Critical Area Buffers
  5. Non-Native Invasive and Noxious Plants
  6. Pesticides, Herbicides, and Fertilizer

7. Landscape Plans and Utility Plans
8. Tree Pruning
95.52 Prohibited Vegetation
95.55 Enforcement and Penalties
1. Intent
2. General Requirements
3. Authority
4. Cease and Desist
5. Stop Work Order
6. Civil Citation
7. Civil Penalty
8. Tree Restoration
9. Failure to Restore or Pay Fines
10. Appeal to Hearing Examiner
11. Hearing Examiner Decision

Chapter 95 – TREE MANAGEMENT AND REQUIRED LANDSCAPING
CHAPTER REORGANIZATION - DRAFT

Sections:

95.05 Purpose and Intent
95.10 Definitions – Expand definitions to include KMC, SMP, and other KZC 95 terms such as nuisance trees and hazard trees
95.15 Applicability – Permit Required
95.20 Exemptions
- ~~1. Developed Property~~ – Move to Tree Removal Limitations section 95.21
- 1. Emergency Tree Removal
- 2. Utility Management
- 3. Commercial Nurseries or Tree Farms

95.21 Tree Removal Limitations – New section to clarify tree removal limits on private property and right-of-way trees.
~~95.25 Alternative Compliance~~ – Move to Tree Plan Required section 95.35
~~95.30 City Forestry Account~~ - Move to Enforcement and Penalties section 95.55
95.35 Tree Plan Required
- 1. Introduction
- 2. Alternative Compliance – Moved from 95.25
- 3. Tree Plan Review Procedure – Moved from subsection 5 below
- 4. Tree Plan Required (Create in matrix format) – Include reference to Tree Density Requirement
- 5. ~~Tree Plan Review Procedure and~~ Tree Plan Appeals - Move review procedure to subsection 3 above
- 6. Tree Plan Review Standards
- ~~7. Tree Density Requirement~~ – Move to new section 95.37
- ~~8. Tree Protection during Development Activity~~ – Move to new section 95.38

95.37 Tree Density Requirement – New section from 95.35.7
95.38 Tree Protection during Development Activity – New section from 95.35.8
95.40 Required Landscaping
- 1. User Guide
- 2. Use of Significant Existing Vegetation
- 3. Landscape Plan Required
- ~~4. Minimum Land Use Buffer Requirements~~ – Move to 95.42
- ~~5. Supplemental Plantings~~ – Move to 95.41
- ~~6. Land Use Buffering Standards~~ – Move to 95.43
- ~~7. Landscaping and Buffering Standards for Driving and Parking Areas~~ – Move to 95.44 and 95.45
- ~~8. Nonconforming Landscaping and Buffers~~ – Move to 95.47

95.41 Supplemental Plantings – New section from 95.40.5
95.42 Minimum Land Use Buffer Requirements – New section from 95.40.4
95.43 Outdoor Use, Activity, and Storage Landscape Requirements – New section from a subsection of 95.40.6
95.44 Internal Parking Lot Landscaping Requirements – New section from 95.40.7
95.45 Perimeter Landscaping for Parking Lot and Driveways – New section from 95.40.7
95.46 Modifications to Landscaping Standards – Combine modification criteria from various sections here
95.47 Nonconforming Landscaping and Buffers – New section from 95.40.8
95.50~~45~~ Installation Standards for Required Plantings
- 1. Street Trees
- 2. Compliance
- 3. Timing
- 4. Grading
- 5. Soil Specifications

DRAFT

6. Plant Selection
7. Fertilization
8. Irrigation
9. Drainage
10. Mulch
11. Protection
12. Mitigation and Restoration Plantings in Critical Areas and Critical Area Buffers

95.51~~50~~ Tree and Landscape Maintenance Requirements

1. Responsibility for Regular Maintenance
2. Maintenance Duration
3. Maintenance of Preserved Grove
4. Maintenance of Critical Area and Critical Area Buffers
5. Non-Native Invasive and Noxious Plants
6. Pesticides, Herbicides, and Fertilizer
7. Landscape Plans and Utility Plans
8. Tree Pruning

95.52 Prohibited Vegetation

95.55 Enforcement and Penalties

1. Intent
2. City Forestry Account – Moved from 95.30
3. General Requirements
4. Authority
5. Cease and Desist
6. Stop Work Order
7. Civil Citation
8. Civil Penalty
9. Tree Restoration
10. Failure to Restore or Pay Fines
11. Appeal to Hearing Examiner
12. Hearing Examiner Decision

DRAFT

Chapter 19.36
STREET TREES AND TREES ON CITY PROPERTY

Sections:

19.36.010 Purpose.
19.36.020 Definitions.
19.36.030 Alteration of street trees without prior approval is prohibited.
19.36.035 Standards and criteria for approval to remove street tree.
19.36.040 Removal or alteration of trees in public parks and other city property prohibited.
19.36.050 Civil penalties for violations.
19.36.060 Issuance of notice of violation.
19.36.070 Issuance of notice of civil infraction.
19.36.080 Civil infraction appeal procedures.
19.36.090 Criminal penalties for willful violations.
19.36.110 Remedies not exclusive.

19.36.010 Purpose.

The purpose of this chapter is to regulate, preserve and protect street trees, trees in public parks and trees on other city property. (Ord. 3866 § 1 (part), 2002)

19.36.020 Definitions.

Terms used in this title shall have the following meanings:

(a) "Hazard tree" is any tree with structural defects, disease, or both, which makes it subject to a high probability of failure in the opinion of a qualified professional retained or approved by the city.

(b) "Nuisance tree" is a tree which is causing physical damage to property or has been damaged by past maintenance practices, and for which accepted arboricultural practices cannot correct the problem.

(c) "Street tree" is a tree located within the street right-of-way; provided, that if the trunk of the tree straddles the boundary line of the street right-of-way and the abutting property, it shall be considered to be on the abutting property and subject to the provisions of the Kirkland zoning code. (Ord. 3891 § 1, 2003: Ord. 3866 § 1 (part), 2002)

19.36.030 Alteration of street trees without prior approval is prohibited.

Routine maintenance of street trees is the responsibility of the abutting property owner except in the city's central business district (CBD) zones and in any other specific right-of-way that may be identified by the city. Except for routine maintenance, it is unlawful for any person to prune, trim, modify, alter or damage a street tree without the prior approval of the director of public works or his or her designee; provided, that the city and utility crews may perform routine pruning and maintenance of street trees; and provided further, that an abutting property owner may perform routine pruning and maintenance in accordance with any landscape maintenance agreement or contract with the city. An application to prune, trim, modify or alter a street tree shall be granted only if the proposed action will improve the health and appearance of the tree. An

application to prune, trim, modify or alter a street tree shall not be granted if the sole or primary purpose of the proposed action is view enhancement. (Ord. 3891 § 2, 2003: Ord. 3866 § 1 (part), 2002)

19.36.035 Standards and criteria for approval to remove street tree.

An abutting property owner may apply for permission to remove a street tree by filing a written application with the department of public works. An application to remove a street tree shall be reviewed by the director of public works, or his or her designee. The director shall consider the following factors in determining whether to grant or deny the application: (1) whether the tree is a hazard tree or nuisance tree; (2) the location of the tree in the right-of-way; (3) the size and type of tree and whether it constitutes a "significant tree" as defined in the Kirkland zoning code; (4) whether the tree is now, or may be in the future, part of the city's plans for the right-of-way; (5) whether the property owner is willing to mitigate the consequences of removal of the tree by planting a new tree or trees in a more suitable location; and (6) any other factor that the director deems relevant or appropriate. Any failure by the applicant or his or her agents to adhere to conditions imposed on tree removal by the city under this chapter shall constitute a violation of this chapter and is subject to enforcement under this chapter. (Ord. 3891 § 3, 2003)

19.36.040 Removal or alteration of trees in public parks and other city property prohibited.

It is unlawful for any person to remove, prune, trim, modify, alter or damage a tree in a public park or on any other city property; provided, that the city may perform routine pruning and maintenance of such trees and take any actions it deems necessary with respect to trees on city property. (Ord. 3866 § 1 (part), 2002)

19.36.050 Civil penalties for violations.

(a) The director of public works or his or her designee shall be responsible for enforcing the provisions of this chapter with respect to street trees. The director of parks and community services or his or her designee shall be responsible for enforcing the provisions of this chapter with respect to city parks and other city property.

(b) When taking enforcement action under this chapter, the city's primary goal, if feasible, shall be full restoration of the area where the violation occurred. Each tree removed, pruned, trimmed, modified, altered or damaged in violation of this chapter shall constitute a separate violation for the purpose of assessing penalties under this chapter. Violations shall be deemed to be continuing in nature until the area where the violations occurred is fully restored to the condition it was in prior to the violations; provided, that the city, in its discretion, may suspend the accrual of daily penalties if the property owner is actively and diligently implementing a city-approved restoration plan. The costs of restoration shall not be more than the appraised value of the significant trees removed, according to the most recent edition of the Guide for Plant Appraisal.

(c) In addition to the costs of restoration, the amount of the monetary penalty per day for violation is as follows:

(1) First violation: two hundred dollars.

(2) Second violation: four hundred dollars.

(3) Third violation: six hundred dollars.

(d) Payment of a monetary penalty under this chapter does not relieve a person of the duty to correct the violation as ordered by the applicable department director. (Ord. 3866 § 1 (part), 2002)

19.36.060 Issuance of notice of violation.

If the applicable department director, or his or her designee, determines that any person has violated this chapter, he or she may issue a notice of violation. The notice of violation shall state:

(a) The name and address of the person to whom the notice of violation is directed;

(b) The street address or a description of the land sufficient for identifying where the violation occurred;

(c) A description of the violation and a reference to the provision of this chapter that has been violated;

(d) A statement of the action required to be taken to correct the violation and a date and time by which the correction is to be completed no less than seven days after issuance of the notice of violation; and

(e) A statement of the monetary penalty for each day on which the violation continues after the date set for correction.

The city shall serve the notice of violation on the person charged with violating this chapter personally or by certified mail. (Ord. 3866 § 1 (part), 2002)

19.36.070 Issuance of notice of civil infraction.

If a violation is not corrected in the time specified in the notice of violation, the city may issue a notice of civil infraction to the person charged with violating this chapter. The notice of civil infraction shall include the following:

(a) The name and address of the person to whom the notice of civil infraction is directed;

(b) The street address or a description of the land sufficient for identifying where the violation occurred;

(c) A description of the violation and a reference to the provision of this chapter that has been violated;

(d) A statement that the monetary penalty in the amount per day for each violation, as set forth in the notice of violation, is assessed against the person to whom the notice of civil infraction is issued; and

(e) A statement that the person to whom the notice of civil infraction was directed must complete correction of the violation and may pay the monetary penalty imposed to the city or may appeal the notice of civil infraction as provided in this chapter.

A notice of civil infraction represents a determination that a civil infraction has been committed. The determination is final unless appealed as provided in this chapter. The city shall serve the notice of violation on the person charged with violating this chapter personally or by certified mail. (Ord. 3866 § 1 (part), 2002)

19.36.080 Civil infraction appeal procedures.

(a) A person to whom a notice of civil infraction is directed may appeal the determination that a violation exists or the amount of any monetary penalty to the hearing examiner. A written notice of appeal must be filed with the city within seven calendar days from the date of service of the notice of civil infraction. The office of the

hearing examiner shall give notice of the hearing of the appeal no less than seventeen calendar days prior to the hearing date.

(b) The hearing examiner shall conduct a hearing on the appeal pursuant to the rules of procedure provided by the Administrative Procedure Act, Chapter 34.05 RCW, as well as any procedural rules and guidelines promulgated by the hearing examiner. The city and the appellant may participate as parties in the proceedings and each may call witnesses. The city shall have the burden of proving by a preponderance of the evidence that a violation has occurred.

(c) The hearing examiner shall determine whether the city has proven by a preponderance of the evidence that a violation has occurred and shall affirm, vacate, suspend or modify the amount of any monetary penalty with or without written conditions. The monetary penalty does not accrue during the pendency of the appeal; provided, that if the hearing examiner finds that the appeal is frivolous or intended solely to delay compliance, he or she may impose a daily monetary penalty from the date of service of the notice of civil infraction. The hearing examiner's decision shall be the city's final administrative ruling. The hearing examiner shall mail a copy of his decision to the appellant by certified mail, postage prepaid, return receipt requested.

(d) The monetary penalty is the personal obligation of the person to whom the notice of civil infraction was directed. Any monetary penalty assessed shall be paid to the city clerk within seven days of issuance of the notice of civil infraction, or, if an appeal was filed, within seven days of the hearing examiner's decision. The city attorney is authorized to collect the monetary penalty by use of appropriate legal remedies, the seeking or granting of which shall not stay or terminate accrual of additional per-day monetary penalties so long as the violation continues. (Ord. 3866 § 1 (part), 2002)

19.36.090 Criminal penalties for willful violations.

Any willful violation of this chapter is a gross misdemeanor punishable by imprisonment for not more than one year, or by a fine of not more than five thousand dollars, or both. The city may also seek criminal restitution for all costs and expenses incurred in replacing or restoring any trees and landscaping that were damaged or removed as a result of the violation. (Ord. 3866 § 1 (part), 2002)

19.36.110 Remedies not exclusive.

The remedies prescribed in this chapter are in addition to all other remedies provided for or authorized by law, including, but not limited to, RCW 64.12.030 which provides for treble damages for unlawful removal of trees. (Ord. 3866 § 1 (part), 2002)

Chapter 110 – REQUIRED PUBLIC IMPROVEMENTS

Sections:

110.05 User Guide
110.10 General
110.20 Right-of-Way Designation Map Adopted
110.22 Neighborhood Access Street Designations
110.25 Required Public Improvements
110.27 Alleys
110.30 R-20 Neighborhood Access Streets
110.35 R-24 Neighborhood Access Streets
110.38 R-28 Neighborhood Access Streets
110.40 Collector Streets
110.45 Minor Arterial Streets
110.50 Principal Arterial Streets
110.52 Sidewalks and Other Public Improvements in Design Districts
110.60 Additional Requirements
110.65 Engineering Standards
110.70 Modifications, Deferments and Waivers, and Construction-in-Lieu
110.75 Bonds

110.05 User Guide

This chapter establishes requirements for the improvements that an applicant must make within the public rights-of-way that abut the subject property. Consult the use zone charts in Chapters 15 through 60 KZC for regulations in certain zones regarding similar improvements.

110.10 General

The applicant shall comply with the provisions of this chapter if the applicant is granted a development permit unless:

1. The cost of the street improvements along the property frontage is greater than 20 percent of the cumulative building alterations in any five-year period according to the following:

   a. Street improvement costs shall include, but not be limited to, roadway asphalt, storm drainage, curb and gutter, landscape strip, street trees, and concrete sidewalk.

   b. For properties with multiple street frontages, the average length of the combined multiple street frontages will be used for the purposes of determining whether street improvements are required. If street improvements are required, the cost of the improvements along any of the multiple street frontages shall not exceed 20 percent of the cumulative building alterations in any five-year period.

   c. Street improvement costs shall be evaluated based on the most current edition of the City of Kirkland Department of Public Works Improvement Evaluation Packet (including engineering and administration costs).

   d. Building alteration costs shall be evaluated using the current Building Valuation Data charts published annually by the International Conference of Building Officials (ICBO) on file with the City Building Official. Any valuations not specified in that publication will be determined by the Building Official. Other site improvements such as driveways, sidewalks, utility lines, sheds, etc., will not be included in the valuation.

   e. The City shall track the cumulative building alterations in a five-year time period

using historical Building Permit information.

2. The applicant or previous owner of the subject property installed improvements in the adjacent right-of-way as part of a subdivision or discretionary land use permit approved within four years prior to the present development permit application.

110.20 Right-of-Way Designation Map Adopted

The Director is directed to produce and keep current a Rights-of-Way Designation Map, designating each improved right-of-way, including alleys, according to the following criteria. When an unimproved right-of-way is to be improved, the Public Works Director is directed to designate that right-of-way according to the following criteria based on projections for that right-of-way:

Street Designation	General Description	Average Daily Trips*
Alley	Public right-of-way providing service access to adjacent uses.	Less than 200
Neighborhood Access	Streets providing access to adjacent residences and to cul-de-sacs. KZC 110.22 establishes criteria for subcategories of neighborhood access streets.	Less than 1,500
Collector	Streets providing access to adjacent uses, linking neighborhoods and commercial areas together, and linking these areas to the arterial system.	Up to 10,000
Minor Arterial	Intra-community highways connecting community centers. Access to adjacent residences should not be permitted when acceptable alternate access is available.	5,000 – 25,000
Principal Arterial	Intra- and inter-community highways connecting major community centers; access to adjacent residences or single commercial sites should not be permitted when acceptable alternate access is available.	15,000 – 40,000

* “Average Daily Trips” is defined as the number of vehicles passing a given point, in either direction, during a 24-hour period, based on an average over seven consecutive days.

110.22 Neighborhood Access Street Designations

When public improvements to a neighborhood access street are required or proposed, the Public Works Director will designate that right-of-way according to the following criteria:

Street Designation	Designation Criteria	
R-20	1.	Provides access only to properties designated Low Density Residential in the Comprehensive Plan and/or those properties zoned RS 5.0 or RM 5.0.
	2.	Parking allowed one side only.*
	3.	Shall not be dead-ended if length exceeds 400 feet in length.
	4.	May only be used to improve an existing unimproved street if at least 300 feet or one full block face of matching improvements can be installed on both sides of the street, at present or in the future. Otherwise, an R-24 or R-28 shall be used.
R-24	1.	Provides access only to properties designated Low Density Residential in the Comprehensive Plan

		and/or those properties zoned RS 5.0 or RM 5.0.
	2.	Parking allowed on both sides.*
	3.	Dead-end streets over 400 feet in length.
	4.	May only be used to improve an existing unimproved street if at least 300 feet or one full block face of matching improvements can be installed on both sides of the street, at present or in the future. Otherwise, an R-28 shall be used.
R-28	Provides access to properties other than those designated Low Density Residential in the Comprehensive Plan.	

* If the Public Works Director determines that the street will not meet existing or projected parking demand, based on land use characteristics of the area and availability of on-site parking, a wider street (such as an R-24 or R-28 street) will be required.

110.25 Required Public Improvements

1. General – KZC 110.27 through 110.50 establish different improvements for the different classifications of rights-of-way listed in KZC 110.20 and 110.22. KZC 110.52 establishes specific sidewalk and other public improvement standards in Design Districts. Except as specified in subsections (2), (3) and (4) of this section, the applicant shall install the specified improvements from the center line of the right-of-way to the applicant's property line. The applicant may increase the dimensions of any required improvement or install additional improvements in the right-of-way with the written consent of the Public Works Director.

2. Half-Street Improvements – If the one-half of the right-of-way opposite the subject property has not been improved based on the provisions of this chapter, the applicant shall install improvements in the right-of-way as follows:

   a. Alleys. The applicant shall install the required improvements for the entire width of the alley.

   b. All Other Rights-of-Way.

      1) The applicant shall install the required improvements from his/her property line to and including the curb.

      2) The applicant shall grade to finished grade all the required driving and parking lanes in the entire right-of-way and a five-foot-wide shoulder on the side of the right-of-way opposite the subject property.

      3) The applicant shall pave outward 20 feet from the curb adjacent to his/her property or as required by the Public Works Director.

3. Required Paved Connection – In all cases except for alleys, if the access point for the subject site is not connected to an existing improved street by an improved hard surface, the applicant shall provide a hard surface improvement, of at least 20 feet in width, to the existing improved street. The applicant may request a modification, deferment or waiver of this requirement through KZC 110.70.

4. Capital Improvement Projects – If the City Council has approved a capital improvements plan for a particular public right-of-way, that plan will govern the improvements required for right-of-way. To the extent feasible, public projects shall be designed pursuant to the standards established for each Design District contained in the Public Works Pre-Approved Plans manual.

110.27 Alleys

The pavement width of an alley must be at least 12 feet but may be required to be increased by the Public Works Director or Fire Marshall. For all commercial, industrial, office, or multifamily projects, the applicant shall improve the alley abutting the subject property and extend it to the existing improved street, and may be required to improve an additional 30 feet past the property frontage to provide emergency turnaround. For single-family dwellings using the alley for primary vehicular access, the applicant shall pave a 12-foot-wide asphalt apron extending 20 feet from the nearest improved street toward the subject property. For all types of development permits, the Public Works Director shall determine the extent and nature of other improvements required in alleys on a case-by-case basis. Typical improvements include, but are not limited to, replacement of the alley driveway apron and curb, installation of storm drainage, repair of existing paving, and installation of crushed rock in gravel alleys.

Street Type	Minimum Requirements for Street Type	Minimum Right-of-Way	Parking	Curb and Gutter	Landscape Strip	Sidewalks
Alley*	1. May only be used if the property served by the alley is also served by another street. 2. 12-foot minimum paving required.	16 feet	No parking allowed	Not required Storm water collection and conveyance system required	Not required	Not required

* See Public Works Standards R-10 for standard alley cross-section.

Special Regulations:

a. The improvements shall generally be centered in the right-of-way (see chart on following page).

110.30 R-20 Neighborhood Access Streets

The chart below and diagrams on the next page establish the extent and nature of the improvements that must be provided in an R-20 street. See also KZC 110.60 through 110.75 for other requirements that apply to improvements in the right-of-way.

Street Type	Minimum Requirements for Street Type	Minimum Right-of-Way	Parking	Curb and Gutter	Landscape Strip	Sidewalks
20 feet (R-20)	1. Pavement width is 20 feet. 2. Cul-de-sacs shall have 70-foot pavement diameter. Center planter islands are not allowed. 3. Shall not be dead-ended if length exceeds 400 feet (present or future). 4. A cul-de-sac is required on dead-end streets, 200-400	30-45 feet 80-foot diameter for cul-de-sacs Right-of-way width determined by width of required improvements, rounded up to nearest interval of 5 feet.	Allowed one side only Cul-de-sacs posted “No Parking Anytime”	Required both sides Must install vertical curb, gutter, and storm water collection and conveyance systems.	4.5-foot width required both sides with or without sidewalk Shall include street trees 30 feet on center with grass sod or groundcover Shall be adjacent to the curb	1. 5-foot-wide sidewalks required on both sides of the street unless otherwise specified in the Comprehensive Plan, the Nonmotorized Transportation Plan, a design report for the specific street, elsewhere in this code, or as

	feet long. A vehicle hammerhead turnaround may be required on any street less than 200 feet long. 5. Alternate parking schemes such as parallel parking bump-outs may be proposed if it can be demonstrated that the alternate scheme will meet parking demand (existing and projected) and will not create safety problems.					a special condition of development. 2. For permanently dead-ended streets less than 300 feet long, no sidewalk required unless a pedestrian connection is available at the end of the street. 3. For permanently dead-ended street segments greater than 300 feet long, or any looped street, sidewalks are required on both sides. If the dead-end street is 300-400 feet long or the looped street is less than 1,000 feet long, one side of sidewalk can be substituted by participating in the sidewalk construction-in-lieu program. See KZC 110.70.

Special Regulations:

a. Pavement widths are measured from face of curb, and sidewalk and landscape strips are measured from back of curb.

b. The Fire Department may require a temporary emergency vehicle turnaround on streets which are longer than 200 feet and will be connected in the future.

c. If excess right-of-way exists or is created, the City may require wider planter strips.

d. The Public Works Director may require and allow special amenities such as wider planter strips, meandering sidewalks, and curb and gutter bump-ins to save significant trees and other natural features.

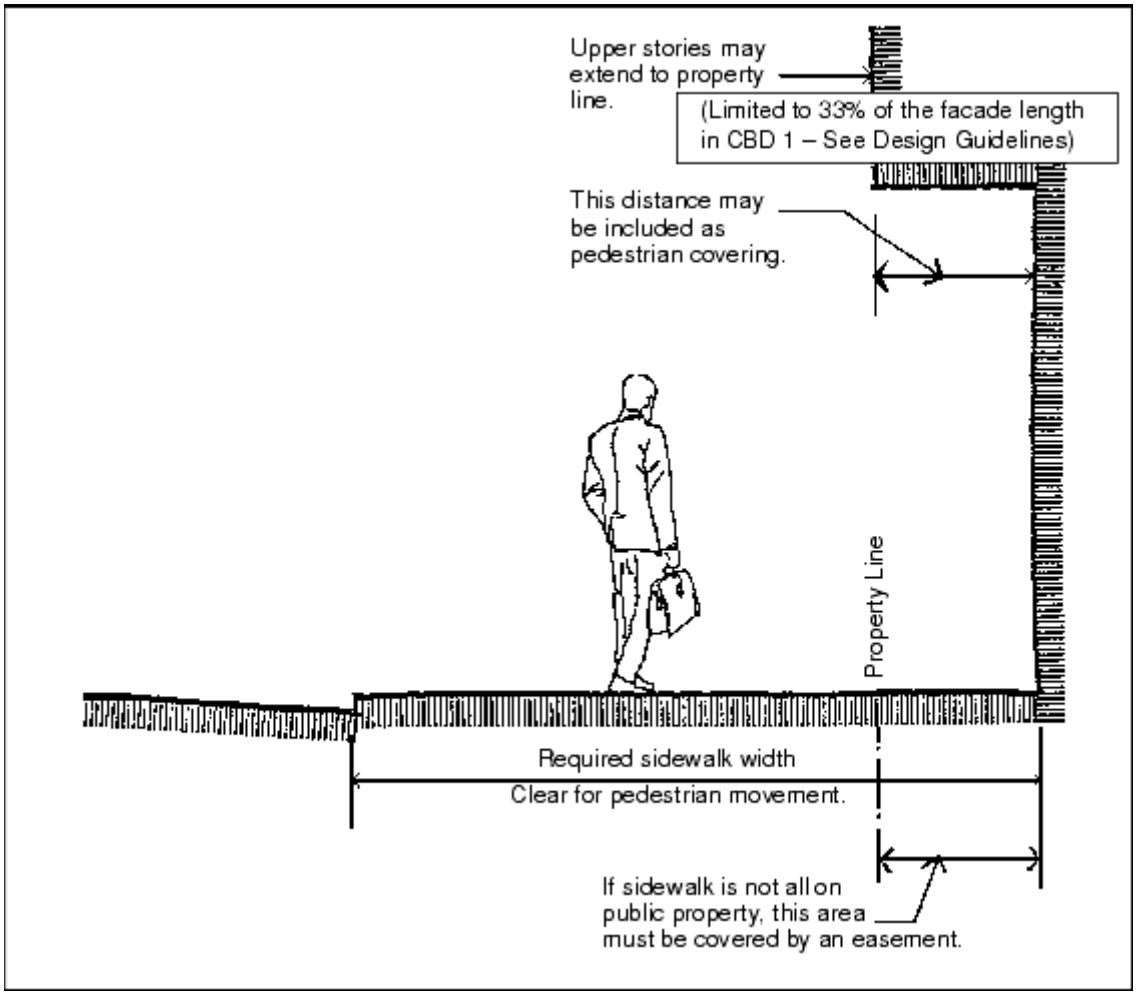
e. The improvements shall generally be centered in the right-of-way.

f. A landscape strip is not required if:

1) The average slope of the ground from the right-of-way to the front yard setback line is greater than 2:1 after the structures are completed on the project; or

2) The Public Works Director determines, in writing, that the frontage of the subject property is too short to provide a useful landscape strip; and it is unlikely that development on the adjacent property will increase this strip in the future.

g. If a landscape strip is not required, street trees planted 30 feet on-center, 2.5 feet behind the sidewalk, will be required where feasible.



110.35 R-24 Neighborhood Access Streets

The chart below and diagrams on the next page establish the extent and nature of the improvements that must be provided on an R-24 street. See also KZC 110.60 through 110.75 for other requirements that apply to improvements in the rights-of-way.

Street Type	Minimum Requirements for Street Type	Minimum Right-of-Way	Parking	Curb and Gutter	Landscape Strip	Sidewalks
24 feet (R-24)	1. Pavement width is 24 feet. 2. Cul-de-sacs shall have 70-foot pavement	30-50 feet 80-foot diameter for cul-de-sacs Right-of-way	Allowed both sides Cul-de-sacs posted "No	Required both sides Must install vertical curb, gutter, and	4.5-foot width required both sides with or without sidewalk	1. 5-foot-wide sidewalks required on both sides of the street

	diameter. Center planter islands are not allowed. 3. A cul-de-sac is required on dead-end streets exceeding 200 feet in length. A vehicle hammerhead turnaround may be required on any street less than 200 feet long.	width deter-mined by width of required improvements, rounded up to nearest interval of 5 feet.	Parking Anytime"	storm water collection and conveyance systems.	Shall include street trees 30 feet on center with grass sod or groundcover Shall be adjacent to the curb	unless otherwise specified in the Comprehensive Plan, the Nonmotorized Transportation Plan, a design report for the specific street, elsewhere in this code, or as a special condition of development. 2. For permanently dead-ended streets less than 300 feet long, no sidewalk required unless a pedestrian connection is available at the end of the street. 3. For permanently dead-ended street segments greater than 300 feet long, or any looped street, sidewalks are required on both sides. If the dead-end street is 300-1,000 feet long or the looped street is less than 1,000 feet long, one side of sidewalk can be substituted by participating in the sidewalk construction-in-lieu program. See KZC 110.70.

Special Regulations:

a. Pavement widths are measured from face of curb, and sidewalk and landscape strips are measured from back of curb.

b. The Fire Department may require a temporary emergency vehicle turnaround on streets which are longer than 200 feet and will be connected in the future.

c. If excess right-of-way exists or is created, the City may require wider planter strips.

d. The Public Works Director may require and allow special amenities such as wider planter strips, meandering sidewalks, and curb and gutter bump-ins to save significant trees and other natural features.

e. The improvements shall generally be centered in the right-of-way.

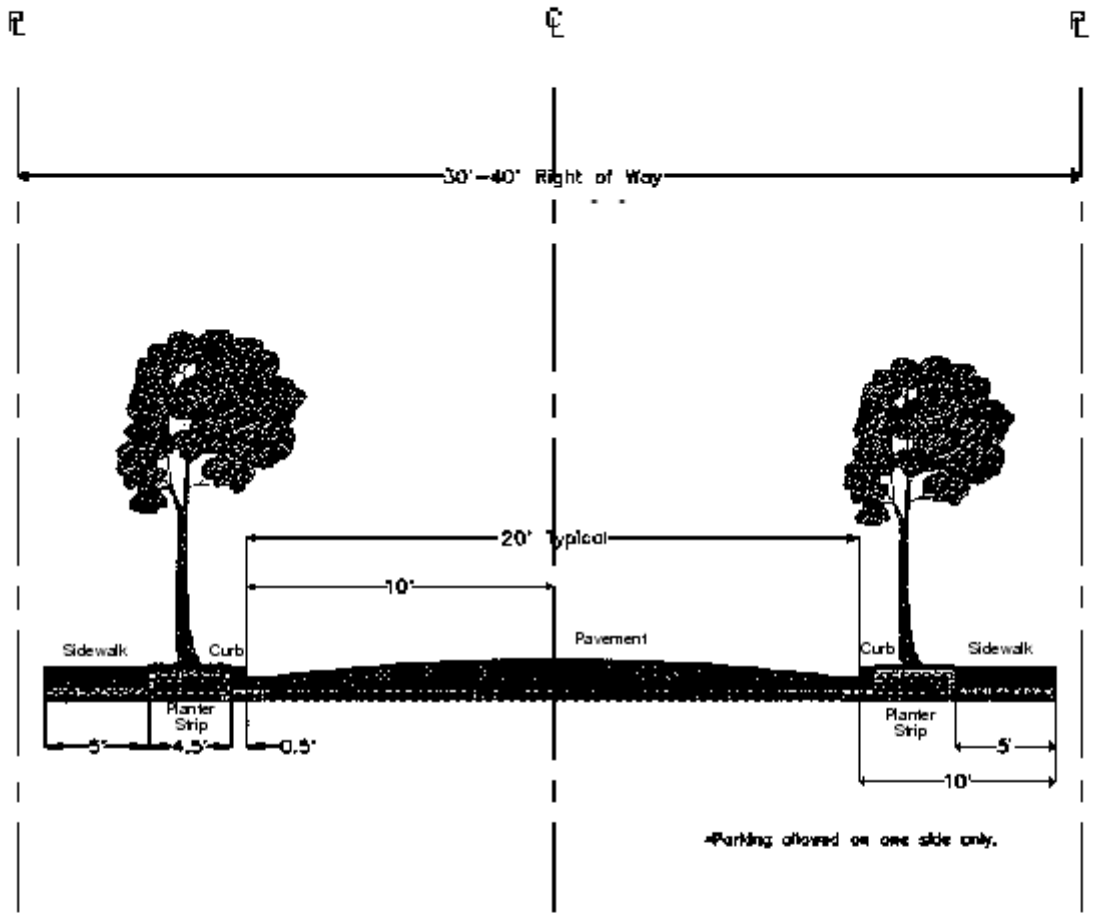
f. A landscape strip is not required if:

1) The average slope of the ground from the right-of-way to the front yard setback line is greater than 2:1 after the structures are completed on the project; or

2) The Public Works Director determines, in writing, that the frontage of the subject property is too short to provide a useful landscape strip; and it is unlikely that development on the adjacent property will increase this strip in the future.

g. If a landscape strip is not required, street trees planted 30 feet on-center, 2.5 feet behind the sidewalk, will be required where feasible.

ATTACHMENT 7
ZON08-00016



TYPICAL 20FT ROADWAY SECTION

110.38 R-28 Neighborhood Access Streets

The chart below and diagrams on the next page establish the extent and nature of the improvements that must be provided on an R-28 street. See also KZC 110.60 through 110.75 for other requirements that apply to improvements in the rights-of-way.

Street Type	Minimum Requirements for Street Type	Minimum Right-of-Way	Parking	Curb and Gutter	Landscape Strip	Sidewalks
28 feet (R-28)	1. Pavement width is 28 feet. 2. Cul-de-sacs shall have 70-foot pavement diameter. Center planter islands are not allowed. 3. A cul-de-sac is required on dead-end streets exceeding 200 feet in length. A vehicle hammerhead turnaround may be required on any street less than 200 feet long.	40-50 feet 80-foot diameter for cul-de-sacs Right-of-way width determined by width of required improvements, rounded up to nearest interval of 5 feet.	Allowed both sides Cul-de-sacs posted "No Parking Anytime"	Required both sides Must install vertical curb, gutter, and storm water collection and conveyance systems.	4.5-foot width required both sides with or without sidewalk Shall include street trees 30 feet on center with grass sod or groundcover Shall be adjacent to the curb	1. 5-foot-wide sidewalks required on both sides of the street unless otherwise specified in the Comprehensive Plan, the Nonmotorized Transportation Plan, a design report for the specific street, elsewhere in this code, or as a special condition of development. 2. For permanently dead-ended streets less than 300 feet long, no sidewalk required unless a pedestrian connection is available at the end of the street. 3. For permanently dead-ended street segments greater than 300 feet long, or any looped street, sidewalks are required on both sides. If the dead-end street is 300-1,000 feet long or the looped street is less than 1,000 feet

						long, one side of sidewalk can be substituted by participating in the sidewalk construction-in-lieu program. See KZC 110.70.

Special Regulations:

a. Pavement widths are measured from face of curb, and sidewalk and landscape strips are measured from back of curb.

b. The Fire Department may require a temporary emergency vehicle turnaround on streets which are longer than 200 feet and will be connected in the future.

c. If excess right-of-way exists or is created, the City may require wider planter strips.

d. The Public Works Director may require and allow special amenities such as wider planter strips, meandering sidewalks, and curb and gutter bump-ins to save significant trees and other natural features.

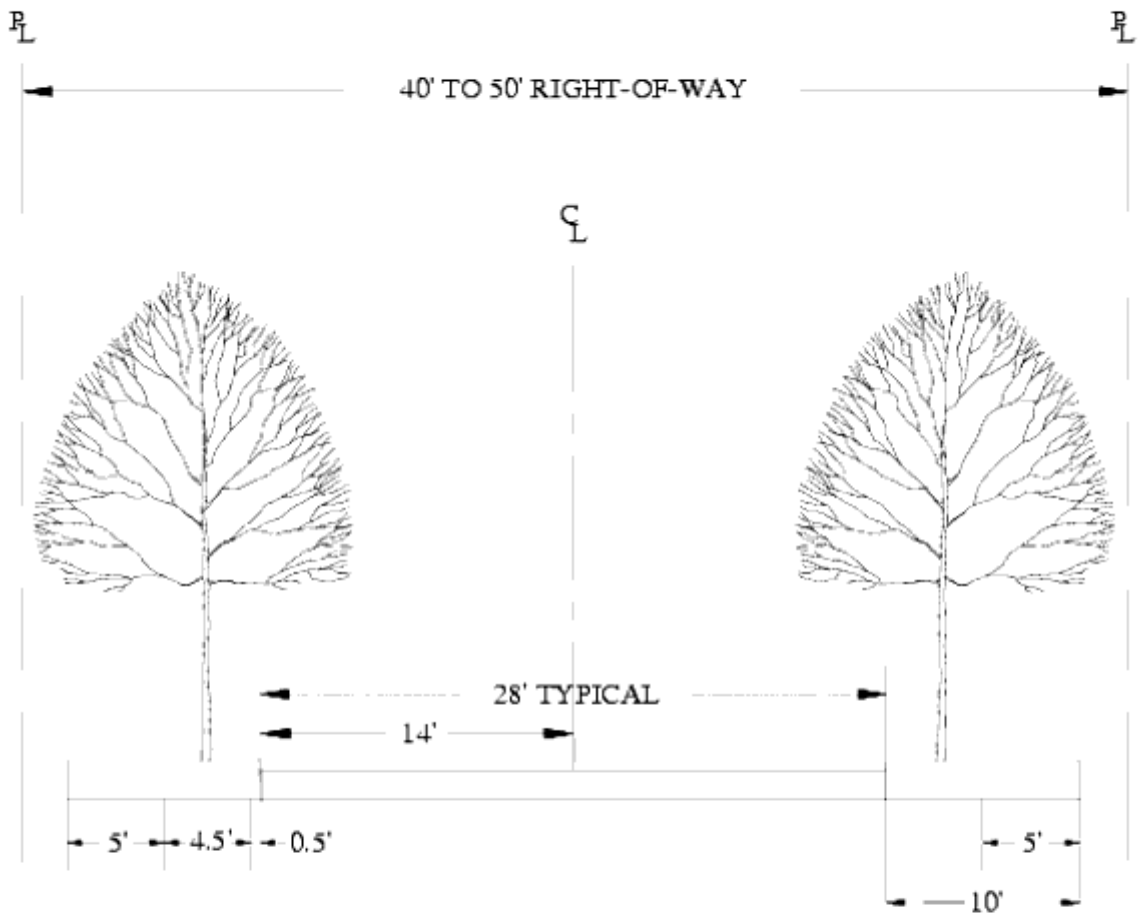
e. The improvements shall generally be centered in the right-of-way.

f. A landscape strip is not required if:

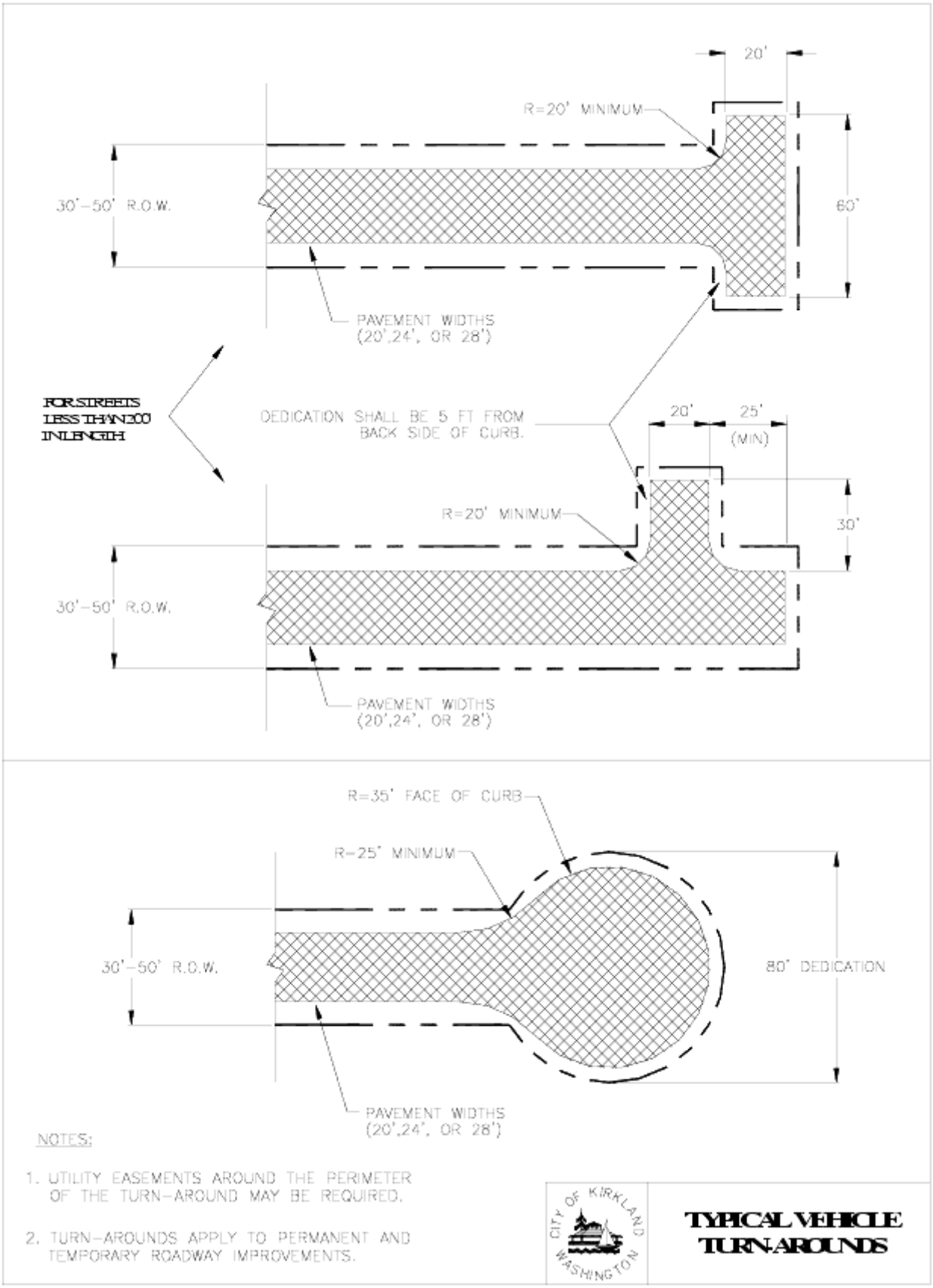
1) The average slope of the ground from the right-of-way to the front yard setback line is greater than 2:1 after the structures are completed on the project; or

2) The Public Works Director determines, in writing, that the frontage of the subject property is too short to provide a useful landscape strip; and it is unlikely that development on the adjacent property will increase this strip in the future.

g. If a landscape strip is not required, the Public Works Department will require street trees, planted 30 feet on-center 2.5 feet behind the sidewalk, where feasible.



TYPICAL 28 FOOT ROADWAY SECTION


20'
R=20' MINIMUM
30'–50' R.O.W.
60'
PAVEMENT WIDTHS
(20',24', OR 28')
FOR STREETS
LESS THAN 200
IN LENGTH
DEDICATION SHALL BE 5 FT FROM
BACK SIDE OF CURB.
20'
25'
(MIN)
R=20' MINIMUM
30'
30'–50' R.O.W.
PAVEMENT WIDTHS
(20',24', OR 28')
R=35' FACE OF CURB
R=25' MINIMUM
30'–50' R.O.W.
80' DEDICATION
PAVEMENT WIDTHS
(20',24', OR 28')
NOTES:
1. UTILITY EASEMENTS AROUND THE PERIMETER OF THE TURN-AROUND MAY BE REQUIRED.
2. TURN-AROUNDS APPLY TO PERMANENT AND TEMPORARY ROADWAY IMPROVEMENTS.
CITY OF KIRKLAND WASHINGTON
TYPICAL VEHICLE TURN-AROUNDS

110.40 Collector Streets

The chart below and diagrams on the next page establish the extent and nature of the improvements that must be provided in collector streets. See also KZC 110.60 through 110.75 for other requirements that apply to improvements in the right-of-way.

Street Type	Right-of-Way	Number of Lanes	Lane Width		Bicycle Lane Width	Parking	Landscape Strip	Curb and Gutter	Sidewalks
			Center	Thru					
Collector	60-foot minimum Right-of-way width determined by width of required improvements, rounded up to nearest interval of 5 feet.	2	11-12 feet	Two 11-foot lanes	Two Class II 5-foot bike lanes (See Special Regulation c.)	Allowed both sides	4.5-foot width required both sides with or without sidewalk Shall include street trees 30 feet on center with grass sod or groundcover Shall be adjacent to the curb	Required both sides Must install vertical curb, gutter, and storm water collection and conveyance systems.	5-foot-wide sidewalks required on both sides c the street unless otherwise specified in land use Comprehen Plan, the Nonmotoriz Transportat Plan, a desi report for th specific stre elsewhere i this code, o a specific condition of developmer

Special Regulations:

a. The standards listed above are minimum standards; specific standards for individual streets may be outlined in a design report for the subject street.

b. A two-way left-turn pocket may be added and the parking eliminated.

c. Bike lanes will be installed (constructed and striped) if identified in the City's Nonmotorized Transportation Plan.

d. Parking lane widths are six feet.

e. The Public Works Director may require or allow special amenities such as wider planter strips, meandering sidewalks, and curb and gutter bump-ins to save significant trees and other natural features.

f. Wider planter strips may be required with any sidewalk installation, if adequate right-of-way exists. Landscape strips of at least 6.5 feet in width should be required when the vehicle travel lane is adjacent to the curb.

g. An eight-foot sidewalk with street trees in tree grates 30 feet on-center may be required if the Public Works Director determines that a 4.5-foot planter strip cannot be accommodated.

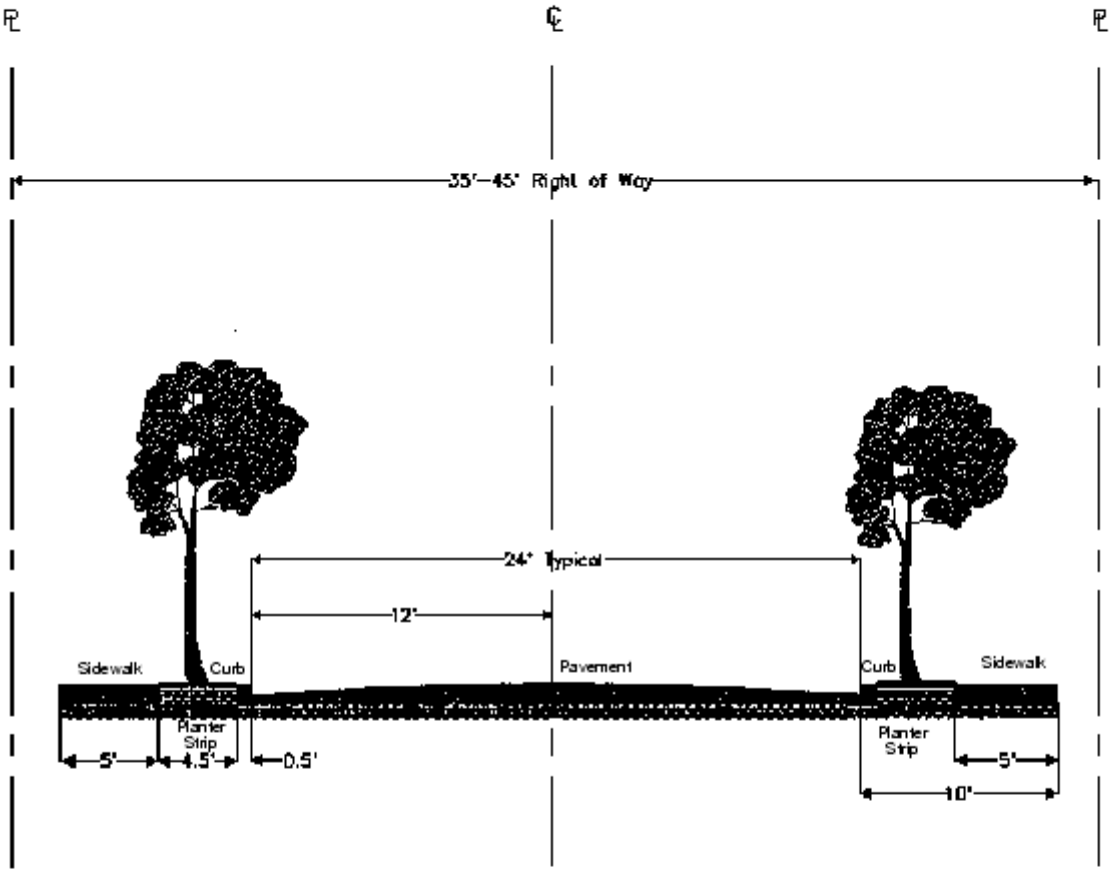
h. A landscape strip is not required if:

1) The average slope of the ground from the right-of-way to the front yard setback line is greater than 2:1 after the structures are completed on the project; or

2) The Public Works Director determines, in writing, that the frontage of the subject property is too short to provide a useful landscape strip; and it is unlikely that development on the adjacent property will increase this strip in the future.

i. If a landscape strip or street trees in tree grates is not required, the Public Works Department will require street trees, planted 30 feet on-center 2.5 feet behind the sidewalk, where feasible.

ATTACHMENT 7
ZON08-00016



CITY OF KIRKLAND WASHINGTON

TYPICAL 24FT ROADWAY SECTION

110.45 Minor Arterial Streets

The Public Works Director shall determine the extent and nature of other improvements required in minor arterial streets on a case-by-case basis. See also KZC 110.65 through 110.75 for other requirements that apply to improvements in the right-of-way.

110.50 Principal Arterial Streets

The Public Works Director shall determine the extent and nature of improvements required in principal arterial streets on a case-by-case basis. See also KZC 110.65 through 110.75 for other requirements that apply to improvements in the right-of-way.

110.52 Sidewalks and Other Public Improvements in Design Districts

1. This section contains regulations that require various sidewalks, pedestrian circulation and pedestrian-oriented improvements on or adjacent to properties located in Design Districts subject to Design Review pursuant to Chapter 142 KZC such as CBD, JBD, TLN, TC, RHBD, and NRHBD zones.

   The applicant must comply with the following development standards in accordance with the location and designation of the abutting right-of-way as a pedestrian-oriented street or major pedestrian sidewalk shown in Plate 34 of Chapter 180 KZC. See also Public Works Pre-Approved Plans manual for public improvements for each Design District. If the required sidewalk improvements cannot be accommodated within the existing right-of-way, the difference may be made up with a public easement over private property; provided, that a minimum of five feet from the curb shall be retained as public right-of-way and may not be in an easement. Buildings may cantilever over such easement areas, flush with the property line in accordance with the International Building Code as adopted in KMC Title 21. (See Figure 110.52.A and Plate 34).

2. Pedestrian-Oriented Street Standards – Unless a different standard is specified in the applicable use zone chart, the applicant shall install a 10-foot-wide sidewalk along the entire frontage of the subject property abutting each pedestrian-oriented street. (See Figure 110.52.A).

Required Sidewalk on Pedestrian-Oriented Streets and Major Pedestrian Sidewalks

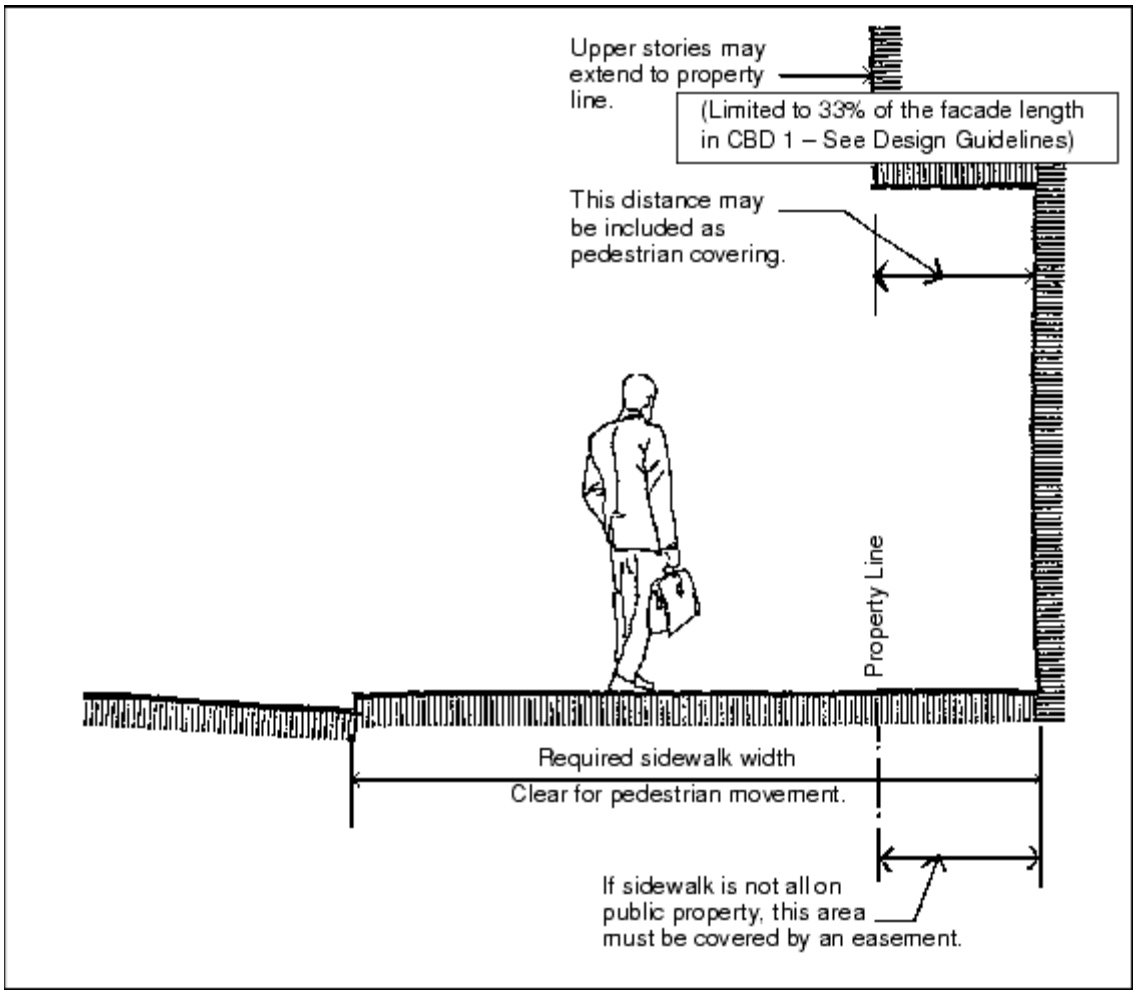


FIGURE 110.52.A

3. Major Pedestrian Sidewalk Standards – If the subject property abuts a street designated to contain a major pedestrian sidewalk in Plate 34, Chapter 180 KZC, the applicant shall install that sidewalk on and/or adjacent to the subject property consistent with the following standards:

   a. Install in the approximate location and make the connections shown in Plate 34;

   b. A sidewalk width of at least eight feet, unless otherwise noted in Plate 34;

   c. Have adequate lighting with increased illumination around building entrances and transit stops; and

   d. If parcels are developed in aggregate, then alternative solutions may be proposed.

4. Streets in the Totem Lake Neighborhood – Streets in the Totem Lake Neighborhood designated as major pedestrian sidewalks in Plate 34.E that are also shown to be within the landscaped boulevard alignment or "Circulator" in Plate 34.D in Chapter 180 KZC may have varied or additional requirements, such as wider sidewalks, widened and meandering planting areas, continuous and clustered tree plantings, special lighting, directional signs, benches, varying pavement textures and public art, as determined by the Director of Public Works.

5. NE 85th Street Sidewalk Standards – If the subject property abuts NE 85th Street, the applicant shall install a minimum 6.5-foot-wide landscape strip planted with street trees located adjacent to the curb and a minimum seven-foot-wide sidewalk along the property frontage. Where the public right-of-way lacks adequate width to meet the previous standard, a 10-foot-wide sidewalk with street trees in tree grates may be permitted or in an easement established over private property.

110.60 Additional Requirements

This section contains a series of requirements that apply to improvements required or proposed to be installed.

1. Dedication of Right-of-Way – If a right-of-way abutting the subject property is not wide enough to contain the required improvements, the applicant shall dedicate as right-of-way a strip of land adjacent to the existing right-of-way wide enough to encompass the required half-street improvements. The Public Works Director may require the applicant to make land available, by dedication, for new rights-of-way and utility infrastructure if this is reasonably necessary as a result of the development activity.

2. Fire Hydrants – The applicant shall install fire hydrants where and in the manner specified by the Department of Fire Services.

3. Incompatible Improvements – If improvements required by this chapter will connect with existing improvements in the same right-of-way that do not conform to this chapter, the following regulations apply:

   a. If the improvements will connect with existing improvements of a greater dimension, the new improvement must be built at the greater dimension unless the Public Works Director determines that the dimensions of the existing improvement will be decreased in the future.

   b. If the improvements will connect with existing improvements of a lesser dimension, the following regulations apply:

      1) If the Public Works Director determines that the dimensions of the existing improvements will not be increased in the future, the new improvement must be permanently flared or tapered to match the existing improvements.

      2) If the Public Works Director determines that the dimensions of the existing improvements will be increased in the future, the applicant shall install the required improvements in the full length of the right-of-way abutting the subject property with temporary flaring or tapering on the existing improvements.

4. Landscape Strip and Street Trees – Landscape strips are typically found between the curb and the sidewalk and are planted with grass and street trees spaced 30 feet on-center. When improving landscape strips, the following regulations apply:

   a. The applicant shall plant all landscape strips with vegetation approved by the City.

   b. Trees shall be planted per the details outlined in Public Works Pre-Approved Plans and Policies Notebook.

   c. The abutting property owner shall be responsible for keeping the sidewalk and landscaping abutting the subject property clean and litter-free, and any vegetation there shall be maintained. The City may require the owner of the subject property to sign a maintenance agreement in a form acceptable to the City Attorney, to run with the subject property. If an agreement is required, the

applicant shall record this agreement in the King County Bureau of Elections and Records.

d. It is a violation of this code to pave or cover the landscape strip with impervious material or to park motor vehicles on this strip.

e. If a landscape strip or street trees in tree grates is not required, street trees planted 30 feet on-center 2.5 feet behind the sidewalk will be required, where feasible.

f. All trees planted in the right-of-way must be approved as to species by the Public Works Director. In the vicinity of overhead lines, tree species shall be selected based on City guidelines that will not interfere with those lines in the future. All trees must be two inches in diameter at the time of planting as measured using the standards of the American Association of Nurserymen with a canopy that starts at least six feet above finished grade and does not obstruct any adjoining sidewalks or driving lanes.

5. Mailboxes – The applicant shall, to the maximum extent possible, group mailboxes for units or uses in the development. The mailbox location and type shall be approved by the Kirkland U.S. Post Master.

6. Street Signs and Traffic Control Devices – The applicant shall install all street signs and traffic control devices in the location and manner established by the Department of Public Works.

7. Utility Lines and Appurtenances

a. The location of sanitary sewer, storm drainage, and water main lines shall be as approved or required by the Public Works Director. All other utility lines, water meters and other utility appurtenances must be undergrounded within the utility strip, unless an alternate location is approved or required by the Public Works Director. Utility appurtenances must be no higher than finished grade unless this is determined by the Public Works Director to be infeasible.

b. All overhead service utility lines on the subject property must be undergrounded to the nearest primary source; undergrounding to a secondary service pole will not be allowed unless approved by the Public Works Director. All existing overhead utility lines in the public right-of-way adjacent to the subject site must be undergrounded unless the Public Works Director determines that this is infeasible. If undergrounding is determined to be infeasible, the property owner shall sign an agreement, in a form acceptable to the City Attorney, that waives the property owner's right to protest formation of a Local Improvement District (LID) for conversion of overhead utility lines to underground, in the public right-of-way adjacent to the subject property, consistent with RCW 35.43.182.

8. Engineering Design – The applicant shall do preliminary engineering and provide construction design for the improvements required by this chapter.

9. Other Necessary Improvements – The applicant shall install any other improvements that are necessary for the installation or proper operations or maintenance of the improvements required by this code.

10. Replacement of Damaged or Substandard Existing Street Improvements – For properties that have existing street improvements, the owner shall remove and replace any damaged or substandard improvements in conjunction with the development of the property. Replacement shall include, but not be limited to, cracked curb, gutter, landscape strip, sidewalk, storm drainage infrastructure, barrier free ramps at street intersections, and installation of street trees.

11. Entry or Gateway Features in Design Districts – In Design Districts, if the

Comprehensive Plan or Design Guidelines designate the subject property for an entry or gateway feature, then the applicant shall design and install an entry feature area on the subject property. The size of the entry feature area shall be at least 100 square feet, and may include landscaping, art, signage or lighting. The design shall be reviewed by the City and decided upon as part of the Design Review for the proposed development. The applicant shall provide an easement or dedication of property surrounding the entry feature.

110.65 Engineering Standards

The Public Works Director is directed to develop and keep current full engineering pre-approved plans and policies for all improvements in the right-of-way. The applicant shall comply with these standards and specifications for all improvements in the right-of-way. These standards and specifications are available for public inspection and copying in the Public Works Department during regular business hours or at www.ci.kirkland.wa.us.

110.70 Modifications, Deferments and Waivers, and Construction-in-Lieu

1. General – The provisions of this section establish under what circumstances the requirements of this chapter may be modified, deferred, waived, or provided for with a sidewalk construction-in-lieu.

2. Authority to Grant and Duration

   a. If the proposed development of the subject property requires approval through Process I, IIA, IIB or III, described in Chapters 145, 150, 152 and 155 KZC, respectively, or short plat or subdivision approval described in the subdivision ordinance, a request for a modification, deferment, waiver, or sidewalk construction-in-lieu, will be considered as part of this process under the provisions of this section. If granted under Process I, IIA, IIB or III, or through the short plat or subdivision processes, the modification, deferment, waiver, or sidewalk construction-in-lieu is binding on the City for all development permits issued for that development under the Building Code within five years of the granting of the modification, deferment, waiver, or sidewalk construction-in-lieu.

   b. If subsection (2)(a) of this section does not apply, the Public Works Director may grant a modification, deferment, waiver, or sidewalk construction-in-lieu in writing under the provisions of this section.

3. Modifications – The City may require or grant a modification to the nature or extent of any required improvement for any of the following reasons:

   a. If the improvement as required would not match the existing improvements.

   b. If unusual topographic or physical conditions preclude the construction of the improvements as required.

   c. If other unusual circumstances preclude the construction of the improvements as required.

   d. If the City and a neighborhood has agreed upon a modified standard for a particular street (see the Public Works Pre-Approved Plans and Policies Notebook for a description of the Neighborhood Access Street Improvement Modification and Waiver Process).

4. Deferment

   a. The City may require or permit that the required improvements be installed at a later time:

1) If the required improvement is part of a larger project that has been scheduled for implementation in the City's six-year Capital Improvement Program; or

2) If other unusual circumstances preclude the construction of the improvements as required.

b. If the applicant meets the above criteria for deferment, he/she is only obligated to install, at a future date, improvements from the center line of the right-of-way to the property line.

c. If the City approves a deferment, the applicant must sign a concomitant agreement to run with the property, in a form acceptable to the City Attorney, specifying that the applicant shall install or reimburse the City for construction of the deferred improvements as directed by the Public Works Director. The applicant must file this agreement with the King County Bureau of Elections and Records.

d. The applicant must grade the subject portion of the right-of-way as though the improvement were to be immediately installed and stabilize the graded area in a manner approved by the Public Works Director. The applicant may be exempted from this requirement if the Public Works Department determines that unusual circumstances preclude the grading.

5. Waiver – The City may waive and not require or allow installations of a required improvement under the following circumstances:

a. If the installation of the improvements will cause a safety hazard or an environmental impact that cannot be mitigated; or

b. If the project is for a single-family dwelling alteration that is less than $200,000 in value, based on building alteration costs in effect on January 1, 2006. This threshold shall be reviewed annually and adjusted by a percentage equal to the percentage of increase in building alteration costs, if any (see KZC 110.10(1)(d) for building alteration costs information); or

c. If the development project fronts on a neighborhood access type street in the RS 35, RSX 35 and Planned Area 16 zones within the Bridle Trails neighborhoods north of Bridle Trails State Park; or

d. If the City determines that the current level and extent of the improvement in the right-of-way adjacent to the subject property will not be changed in the future; or

e. If the City and a neighborhood have agreed upon a street improvement waiver for a particular street (see the Public Works Pre-Approved Plans and Policies Notebook for a description of the Neighborhood Access Street Improvement Modification and Waiver Process).

6. Sidewalk Construction-in-Lieu Program

a. This subsection establishes circumstances in which the applicant may propose an off-site sidewalk construction-in-lieu of installing on-site street improvements in the right-of-way abutting the subject property (e.g., KZC 110.30, 110.35, and 110.38). The City will not accept the applicant's proposed sidewalk construction-in-lieu if the Public Works Director determines that it is in the City's interest that the street improvements be installed abutting the subject property, taking into account such factors as the pedestrian safety impacts that result from the development. In addition to the criteria listed in KZC 110.30, 110.35, and 110.38, the City may accept a sidewalk construction-in-lieu of installing on-site sidewalks in the following circumstances:

1) If installation of the required improvement would require substantial off-site roadway modifications; or

2) If the Public Works Director determines that installation of the required improvement would result in a safety hazard; or

3) If other unusual circumstances preclude the construction of the improvements as required.

b. In each instance where the City approves a proposed sidewalk construction-in-lieu under the provisions of this section, the value of the sidewalk construction-in-lieu shall be 75 percent of the then-estimated cost of constructing the street improvements and right-of-way dedication that would otherwise be required under this chapter, based on information compiled and kept current by the Department of Public Works on the cost of street improvement construction.

c. After the value of the improvements has been determined, the Public Works Director shall determine the location of the off-site improvements. The improvements shall be located within the neighborhood of the subject development and directed toward sidewalks or other pedestrian improvements.

d. In each instance where the City accepts a sidewalk construction-in-lieu of installing sidewalk, the subject property will not be subject to participation in future sidewalk improvement costs (along the property frontage) unless redevelopment occurs to a more intense land use that what was occurring on the property at the time of the sidewalk construction-in-lieu payment.

7. Multiple Adjacent Rights-of-Way – When the subject property is adjacent to two or more rights-of-way, modifications, deferments, waivers, or sidewalk construction-in-lieu may be considered separately for each right-of-way. The highest level of improvement required must be constructed around the angle formed by the intersecting streets.

8. Appeals – The decision of the Public Works Director regarding deferments, modifications, waivers, and construction-in-lieu may be appealed using the appeal provisions, as applicable, of Process I of this code, KZC 145.60 through 145.110.

110.75 Bonds

The City may require or permit a bond under Chapter 175 KZC to ensure compliance with any of the requirements of this chapter

Last revised 01/2008

CITY OF KIRKLAND

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DEPARTMENT OF PUBLIC WORKS
PRE-APPROVED PLANS POLICY

Policy R-10: STREET TREE SELECTION LIST, AND PLANTING AND PRUNING PROCEDURES

Attached is the City of Kirkland's street tree selection list and planting and pruning procedures. This policy shall be adhered to when planting and pruning street trees in the public right-of-way.

STREET TREE SELECTION LIST, AND PLANTING & PRUNING PROCEDURES

PLANT APPLICATION & PLANTING PROCEDURES:

The City of Kirkland requires the planting and maintenance of trees along public streets. An adjacent property owner or tenant may plant a tree in a street-planting strip or near the road subject to City review and approval of the type of tree and the planting location. Contact the Public Works Department at 425-587-3800 for an application. After you receive approval to plant, you will be responsible for properly planting and maintaining the tree. This includes watering during the drier seasons, mulching, and pruning.

When private contractors, developers, and property owners are required to plant street trees as part of a private development or redevelopment project, standards of tree selection, location, planting, and a two-year maintenance bond are required.

Besides selecting a tree for aesthetics, please consider the following before you choose a tree and plant it:

1) In most cases, the planting of trees is required only when there is a curbed roadway and a minimum 4.5 foot wide planting strip.
2) Trees must be planted to the following standards:
   a) A minimum of 18 inches back from the face of the curb.
   b) 5 feet from underground utility lines if possible.
   c) 20 feet from street lights or other existing trees.
   d) 30 feet from most street intersections — 50 feet if it has a stop sign.
   e) **Before planting, you MUST call 72 hours in advance for underground utility locations. This is a toll free call @ 1-800-424-5555.** They will mark your planting strip for the location of your water, electric, gas, and power lines. Knowing these locations in advance may save you time and money by preventing an accident.
   f) Unless automatic irrigation is provided, trees must be planted between October and February.
   g) Deciduous trees shall be a minimum 2-inch caliper when planted. Conifer trees shall be a minimum of 6 to 8 feet tall when planted.
   h) Conifer trees are approved on a case-by-case basis. Safety and impact on maintenance workload will be primary considerations. Conifer trees are never allowed in center medians.
   i) For newly planted street trees there should be no branching from the trunk below 5 feet from the ground or walk provided that the branches do not encroach into the sidewalk or street.
   j) Trees that are naturally resistant to pests and produce little fruits are required.

TREE SELECTION:

This document refers to trees on public rights-of-way only.

Refer to the "Recommended Kirkland Street Tree Planting List" below for a listing of trees generally recommended for planting within the planting strip area. This list includes a variety of tree shapes and sizes that can be utilized in a variety of circumstances. Please be aware that this list concentrates on hardy and readily available tree species in the Kirkland area. Also, be aware that current industry belief is that species diversity is a major key to a healthy community/urban forest. It is now recommended that no one species account for more than 8% of the total number of trees in the forest. Therefore, certain trees may not be considered appropriate due to an existing overabundance of that species in a certain part of town. Contact the City of Kirkland Street Department at 425-587-3900 for details. (Specific tree species that are limited in certain neighborhoods include: Norway Maple, Crimson King Maple, Red Maple, Pin Oak, Sweetgum.)

Also please be aware that the list is updated every two years. Tree species may be added or removed from the list as information becomes available. This means that tree species you may see in and around Kirkland are no longer permitted to be planted. Or it may mean that certain species of trees were not readily available at the last review of the list. If there is a particular tree you are interested in that is not on the list, and is also not on the "Trees Not Recommended or Not Permitted along Kirkland Streets" below, you may provide the name of the tree and information for the City to consider with your application. The request and information will be reviewed in relation to the other demands of the right of way. You will then be informed of the decision.

When planting trees under utility lines, choose only small-scale trees that will remain small when mature.

Planting widths: The City Code requires that trees be planted 30 feet on center.

There is no need to meet a City staff representative on site. If you have specific concerns, you may note them on the planting application. Be specific and the City will address your concerns. If you have any questions you may call 425-587-3225 and talk with the permit technician. Staff will consider alternative species proposed on a case-by-case basis. If you are requesting permission to plant a tree species not on this list please provide information about the tree's growth habit, mature size, disease and insect resistance, and any other pertinent information that supports the inclusion of the tree.

PROHIBITED STREET TREES FOR THE CITY OF KIRKLAND:

City of Kirkland Code allows the City to prohibit the following trees from being planted on public rights-of-way. The trees may not be planted closer than the listed minimum planting distance to streets or sewers:

SPECIES:	MINIMUM PLANTING DISTANCE:
Populus trichocarpa, Black Cottonwood	40'
Populus deltoides, Eastern Cottonwood	40'
Populus nigra 'Italica', Lombardy Poplar	40'
Ailanthus altisima, Tree of Heaven	25'
Salix sp., Willow trees	25'
Ulmus americana, American Elm	40'
Sycamore	40'
London Plane	40'
Prunus sp., Cherry, stone fruits, etc (Malus, Crab Apple, WSU approved for western Washington only)	25'
Alnus rubra, Red Alder	25'
Robinia pseudoacacia, Black Locust	30'
Pinus sp., any Pine trees	30'

MAINTENANCE RESPONSIBILITY:

Trees planted or growing naturally on City of Kirkland rights-of-way are property of the City and require a permit to prune, cut, or remove. All pruning and trimming is to be done to current standards adopted by the International Society of Arboriculture or the National Arborist Association. Trees are to be pruned 8 feet above sidewalks and 14 feet above roadways. Newly planted street trees may have branching 5 feet from the ground or walk provided that the branches do not encroach into the sidewalk or street. Current City policy is that it is the responsibility of the adjacent property owner to perform maintenance on the trees. Maintenance includes watering, feeding, mulching, and protecting a street tree to help achieve its mature size and full environmental function.

If you have any questions about maintenance or about caring for street trees you can call the Streets Maintenance Division at 425-587-3900.

TREE PRUNING AND REMOVAL:

The pruning and removal of street trees and right-of-way trees is prohibited without a written permit from the City Department of Public Works obtained in advance. To request such a permit, contact Public Works at 425-587-3800 or use the website below:

http://www.ci.kirkland.wa.us

Under the **Most Requested** section, choose **Tree Regulations**.

ID	Common Name	Scientific Name	Cultivar	Height in ft	Width in ft	Shape	Leaf Color	Other Qualities	Considerations	Planting	Int	Toxic	Pest	Pest	Soil type
5	Service Berry	Amelanchier x grandiflora		10-25	15	upright spreading or gracefull spreading	red-orange in fal	pink/white flowers	edible fruit	4	No				W,Hi,L
6	Allegheny Serviceberry	Amelanchier laevis		25	15	oval/irregular	orange fall color	white flowers	edible fruit	4	No				W,Hi,L
7	Columnar Norway Maple	Acer plantanoides	'Columnar'	35	15	narrow	yellow fall color	stout branches		6	No				W,Hi,L
8	Armstrong Maple	Acer rubrum	'Armstrong'	45	15	narrow	yellow to orange	fast growing		6	No				W,Hi,L
10	Flame Maple	Acer ginnala		20	20	low branching	orange-red to red fall color	hardy/available		4	No				W,Hi,L
14	Paperbark Maple	Acer griseum		25	20	upright/round	red fall color	peeling brown bark		4	No				W,Hi,L
15	Allegheny Serviceberry	Amelanchier laevis		25	15	oval/irregular	orange fall color	white flowers	edible fruit	4	Yes				S,H,Ph
16	Pyramidal Hornbeam	Carpinus betulus pyramidalis		35-60	30	pyramidal	yellow in fal			8	Yes				S,P,Sa,W,P
17	Katsura Tree	Cercidiphyllum japonicum		40	40	pyramidal when young, rounded with age	yellow or orange	heart shaped leaves		6	No				W,M
18	Dogwood	Cornus florida cultivars		20-24	15-20	round/oval	red fall color	pink/white flowers	safety/visibility	6	No				W
19	Lavalle Hawthorn	Crataegus x lavalle		28	20	irregular/vase	bronze fall color	white flowers	orange friut	4	Yes				all types
20	Washington Hawthorn	Crataegus phaenopyrum		25	20	oval/rounded	orange to scarlet	white flowers	red fruit	4	Yes				all types
22	Dove Tree	Davidia involucrata		35	28	broad pyramidal	copper/no change	white bracts		6	Yes				H,P,
23	Dawyck Purple Beech	Fagus sylvatica	'Dawyck Purple'	40	12	columnar	purple leaves			6	No				L,W,H
24	Flowering Ash	Fraxinus ornus		30	15	Pyramidal/round	green/yellow in fal			6	Yes				P,M,H
26	Mountain Silverbel	Halesia monticola		40	25	conical/rounded	yellow in fal	white/bell flowers		4	No				M,W,H,T
31	Southern Magnolia	Magnolia grandiflora cultivars		25-30	15-20	pyramidal	dark green	creamy flowers	non-windy site	4	Yes				S,C,Ph
32	Floribunda Crabapple	Malus floribunda		18	25	irregular	green	pink flowers	yellow/red fruit	4	Yes				S,C,Ph
34	Tschonoskii Crabapple	Malus tschonoshi		28	15	narrowly ova	silver green	white flowers	greenish fruit	4	Yes				S,C,Ph
35	Snowdrift Crabapple	Malus snowdrift		20	20	spreading/round, uniform	glossy green	white flowers	orange fruit	4	Yes				S,C,Ph
36	Winter gold Crabapple	Malus	'Winter Gold'	25	20	pyramidal/oval	green	white, yellow fruit		4	Yes				S,C,Ph
40	Summer Glow Bird Cherry	Prunus padus	'DTR 117'	25	20	oval/round	green/redish purple	white flowers		4	No				W,H
41	Chokecherries	Runus maackii virginiana		30	25	rounded	purple	unusual bark		6	No				P,L,S,C
42	Columnar Sargent Cherry	Prunus sargenti	'Columnaris'	35	15	columnar/vase	orange to red in fal	pink flowers	mahogony bark	6	No				P,L,O
43	Autumn flowering cherry	Prunus subhirtella	'Autumnalis	25	20	spreading	yellow/bronze in fal	semi-double/flowers in Nov & spring		6	No				W,P
45	Blireiana Plum	Prunus x blireiana		20	20	widely vase	red/purple to green	double/pink flowers		4	No				W,P
46	Krauter Vesuvius Plum	Prunus cerasifera	'Krauter	20	15	upright	dark purple	light pink flowers	tolerates heat	4	Yes				H,O,Ph,C,S
47	Thundercloud Plum	Prunus cerasifera	'Thundercloud	20	20	upright/rounded	dark purple	light pink flowers		4	Yes				H,O,Ph,C,S
48	Redspire Pear	Pyrus calleryana	'Redspire'	35	25	pyramidal	bright red in fal	white flowers		4	Yes				P,L,C,O,H,
49	Skyrocket Oak	Quercus robar	'Fastigiata'	45	15	narrow/fastigiate	yellow-brown in fal			6	Yes				P,C,L,
51	Hupeh Rowan	Sorbus hupehensis		50	30	round	turn red in fal	fruits: pink or white		8	No				H,O,T,M
52	Japanese Stewartia	Stewartia pseudocamellia		30	20	pyramidal/oval	orange red to purple red in fal	white flowers	peeling bark	6	No				P,H,C,M,Sa
53	Japanese Snowbel	Styrax japonicus		25	25	rounded	yellow in fal	bell shaped flowers with yellow stamens		4	Yes				P,S,O,H,Ph
56	Hedge Maple	Acer campestre		30	30	rounded	yellowish in fal	low maintenance		4	Yes				P,L,H,Sa,W
60	Emerald Queen Maple	Acer platanoides	'Emerald	50	40	oval/upright	deep green/reddish	city air tolerance		6	No				W,Sa,HI
61	Summershade Maple	Acer platanoides	Summershade	42	40	broad/rounded	yellow in fal	fast growing		6	No				W,Sa,HI
62	other Norway Maples	Acer platanoides		40-90	25-60	rounded/dense	yellow in fal	yellow/green flower	shallow roots	8	No	nu		numer	W,Sa,Hi
63	Spaethii Maple	Acer pseudoplatanus	'Atropurpureum'	40	30	oval/upright	green/velvety purple	salt tolerant		6	No				P,W,Hi,Sa
64	Sycamore Maple	Acer pseudoplatunus		40	30	upright/rounded	yellow in fal	adapted to high pH soils and exposed site		6	Yes				O,S,C,P
65	Red Sunset Maple	Acer rubrum	'Franksred'	45	35	upright/ova	orange to red in fal	vigorous/symetrica		6	Yes				M,H,C,T,M,
66	October Glory Maple	Acer rubrum	'October Glory'	40	35	oval/round	red/reddish-purple in fal			6	No				PoD,W,Hi,L
67	Schlesinger Maple	Acer rubrum	'Schlesingeri	45	35	vase shaped	orange/orange-red in fal			6	No				PoD,W,Hi,L
68	other Red Maples	Acer rubrum		40-60	30-60	pyramidal/oval	reddish/yellow	red flowers	hoppers/borers	8	Yes				H,C,M,Sa
69	Green Mountain Maple	Acer saccharum	'Green	45	35	broadly oval	red/orange to red	hardy sugar maple		6	Yes				P,W,Sa
70	other Sugar Maples	Acer saccharum		50-70	35-45	strong spreading branches form oval to	gray/silver in summer	green/red flowers	insect/disease	8	Yes				P,W,Sa
71	California Buckeye	Aesculus californica		15-20	30	rounded	lustrous dark green	fragrant flowers		6	Yes				P,H,O,S,C,
72	Red Horse Chestnut	Aesculus carnea		30	35	rounded	large, dark green	long rosy cluster	small variety	6	No				P,H,O,S,C,
74	Jacquemontii Birch	Betula jacquemontii		40	30	upright/ova	yellow fall color	no leaf miner		6	No				H,O,C,T,M,
75	River Birch	Betula nigra		40	35	broadly pyramidal to rounded	yellow to gold in fal	no birch borer		6	No				H,O,C,T,M,
76	Paper Birch	Betula papyrifera		50	35	oval	yellow in fal			8	No				H,O,C,T,M,
77	European Hornbeam	Carpinus betulus		35	15-25	upright/ova	yellow in fal	catkins turn brown in novembe		6	Yes				S,Ph
78	American Hornbeam	Carpinus caroliniana		25	20	oval	yellow to bright orange	smooth gray trunk		4	No				S,Ph
79	Marshall Ash	Fraxinus pennsylvanica	'Marshall'	50	40	broadly oval	bright yellow in fal	tough/adaptable		6	Yes	aphi			all soil types
80	Golden Desert Ash	Fraxinus oxycarpa aureafolia		20	20	rounded	bright gold to green	golden twigs		4	Yes	aphi			all soil types
81	Summit Ash	Fraxinus pennsylvanica	'Summit'	45	25	narrowly ova	yellow in fal			6	Yes	aphi			all soil types
82	Rosehill Ash	Fraxinus americana	'Rosehill'	50	35	upright/ova	bronze/red to purple	strong leader		6	Yes	aphi			H,O,C,T,M,
84	Skyline Honeylocust	Gleditsia triacanthos	'Skycole'	45	35	broadly pyramida	golden in fal	tolerant of city air		6	Yes				all soil types
85	Shademaster Honeylocust	Gleditsia triacanthos	'Shademaster'	45	35	vase	yellow in fal	upright branching		6	Yes				all soil types
87	Sweetgum	Liquidambar		40-45	25	pyramidal	red/orange/purple	aromatic leaves	brittle	6	No				PoD,C,T,M,
89	Northern Japanese Magnolia	Magnolia kobus		30-40	25-30	rounded	green	red fruit		4	No				PoD,W,Ph
92	Kingan (seedless Mulberry	Morus alba		35	40	rounded	bright green/yellow	fruitless		6	Yes				PoD,Ph,S
93	Macho Cork Tree	Phellodendron amurense	'Macho'	40	30	vase shaped	yellow in fal	seedless		6	No				PoD,O,C,W
97	Akebono (Kwanza) Flowering	Prunus x yedoensis	'Akebono'	25	25	upright	yellow in fal	delicate pink flowers		6	No				L, Hi,W
101	Scarlet Oak	Quercus coccinea		50	40	upright/ova	glossy green, red in fal			6	Yes				PoD,O,H,W
102	Pin Oak	Quercus palustris		55	40	pyramidal	rusty/orange to red in fal	strong leader		6	Yes				H,O,C,T,M,
104	English Oak	Quercus robur		50	40	broadly/rounded	yellow-brown in fal	sturdy/various soils and climates		4	Yes				H,O,C,T,M,
105	Shumard Oak/Texas Red Oak	Quercus shumardi		50	40	upright/ova	red in fall			8	Yes				H,O,C,T,M,
108	Greenspire Linder	Tilia cordata		40	30	pyramidal	yellowish in fal	strong/uniform		6	Yes				PoD,W,Hi,L
111	Crimean Linden	Tilia euchlora		40	35	broadly pyramidal to ova	glossy green, yellow in fal	golden green twigs		6	No				PoD,W,Hi,L
113	Village Green Zelkova	Zelkova serrata	'Village Green'	40	38	vase shaped	rusty red in fal	clean appearance		6	No				PoD,W,Hi,L
114	Common Horsechestnut/European	Aesulus hippocastanum		50-75	40-70	upright ova	yellow/green when unfolding	very showy flowers have blotch of yellow to		8	No				PoD,M,W,H
121	Tulip Tree	Liriodendron tulipifera		60	30	oval	bright clear yellow in fal	yellow flowers		8	No				H,O,C,T,M,
123	Red Oak	Quercus rubra		50	45	rounded	red in fall	fast growing/large		8	No	scal			S,W,Hi,L,Ph
124	Sour Gum	Nyssa sylvatica		30-50	20-30	pyramidal	in fall fluorescent yellow/orange		sun/part shade	8	No				H,O,C,M,Sa
127	Eastern Redbud	Cercis canadensis		35	25	horizontal	yellow in fal	purple-pink flowers appear before leaves	sun/part shade	6	Yes				S,W,Ph
129	Globe Norway Maple	Acer platanoides	'Globosum'	15-18	18	dense/globe	yellow in fal			6	No				W,S,Hi

130	Tartarian Maple	Acer tartaricum		15-30	20	small rounded	yellow/red			4	No			W,S,Hi
131	Autumn Brilliance Serviceberry	Amelanchier grandiflora	'Autumn	20-25	15	multistemmed	brilliant red color in fal	white flowers/edible frui		4	No			PoD,H,S,C,
132	Cole's Select Serviceberry	Amelanchier x grandiflora	'Cole'	20	15	rounded	red fall color			4	No			PoD,H,S,C,
133	Princess Diana Serviceberry	Amelanchier x grandiflora	'Princess Diana	25	15-20	multistemmed	excellent fall colo	white flowers	edible fruit	4	No			PoD,H,S,C,
134	Crimson Cloud Hawthorr	Crataegus laevigata	'Crimson Cloud'	25	18	shrubby/rounc	green	red flowers with with star-shaped area in	no leaf blight	4	Yes			all soil types
135	Snowbird Hawthorn	Crataegus mordenensis	'Snowbird'	22	20	upright ova	dark glossy green	double white flowers		4	No			W,Hi,Sa,Po
136	Toba Hawthorn	Crataegus mordenensis	'Toba'	20	20	upright/rounded outline	dark green	fragrant flowers	red fruit	4	No			W,Hi,Sa,Po
138	Adirondack Crabapple	Malus halliana	'Adirondack'	10-18	6-10	columnar	green	white flowers with red tinge, red to orange	no scab/blight	6	Yes			all soil types
140	Red Baron Crabapple	Malus	'Red Baron'	18	8	columnar	purple fading to bronze-green	dark red	scab/blight/rust	4	Yes			all soil types
141	Red Jewel Crabapple	Malus	'Red Jewel'	15	12	rounded	green	abundant white flowers, bright red fruit	scab/fireblight	4	Yes			all soil types
142	Sentinel Crabapple	Malus	'Sentinel'	20	12	columnar	green	pale pink flowers	scab/blight	4	Yes			all soil types
144	Sargent Cherry	Prunus sargenti		20-50	20-50	upright/rounded crowr	bronze or red in fal	single pink flowers 1/3" long purple-black		8	No			PoD,H,C,T,
146	Spire Cherry	Prunus sargenti	'Spire'	30	10	dense	yellow/orange/red fall colo	soft pink flowers		6	No			PoD,W,Hi
148	Mt. St. Helens Plum	Prunus cerasifera		20	20	rounded	rich purple leaves	light pink flowers	faster growing	4	No			L,Hi,C,O,H
149	Newport Plum	Prunus cerasifera	'Newport'	20	20	rounded	dark purple leaves	pale pinkto white	purple-leafed	4	No			L,Hi,C,O,H
151	Ivory Silk Japanese Tree Lilac	Syringa reticulata		20	15	upright/roundec	dard green	creamy panicles	heavy flowering	4	No			W,H,L
152	Rocky Mountain Maple	Acer glabrum		30-40	20	shrubby	green	lobbed		4	No			W,L
153	Japanese Maple	Acer palmatum		25	25	horizontal	green/orange or deep red in fal	fine-textured leaves	filtered shade	6	No			W,L
154	Japanese Hornbeam	Carpinus japonica		30	20-35	rounded vase	large/red in fal	white/yellow flowers	part shade/sur	6	Yes			Ph,S,H,P
156	Japanese Dogwood	Cornus kousa		30	25	horizontal	deep red in fall	large white flowers	sun/part shade	4	Yes			H,W,L
157	Cornelian Cherry Dogwood	Cornus mas		25	20	multi-stem	pointed oval leaves/red or yellov	yellow flowers	sun/part shade	4	No			Hi,W,L,P,S
158	Smoke Tree	Cotinus coggygria		10	15	upright/roundec	turn yellow/red/purple in fal	smokey flowers	full sun	4	Yes			all types
161	Golden Chain Tree	Laburnum x waterer	'Vossii'	30	20	upright	green	yellow flowers	sun/part shade	6	No			W,Hi,L
162	Star Magnolia	Magnolia stellata		20	10	oval/rounded	bronze to yellow in fal	white/pink flowers	slow growing	4	No			W,Hi,L
163	Prairie Fire Crabapple	Malus	'Prairiefire'	20	20	upright/roundec	growth reddish maroon/greer	dark pinkish red flowers with red buds, dark		6	Yes			P,S,L,C
166	Mount Fuji Flowering Cherry	Prunus serrulata		15-20	15-20	spreading	green/slight bronze tinge	fragrant flowers	white/pink buds	4	No			P,H,S,T,W
167	Kwanzan Flowering Cherry	Prunus serrulata	'Kwanzan'	30-40	30-40	vase/rounded	new leaves bronzy/orange in fal	deep pink/double	hardiest prunus serrulata, often short lived	6	No			W,Ph
171	Japanese Tree Lilac	Syringa reticulata		30	20-25	rounded	small green	cherry like bark	full sun	4	Yes			P,O,T,S,Ph
181	Carriere Thorn	Crataegus lavalle		30	18	oval	dark green/bronzy red in fal	orange fruit	no leaf rust	6	Yes			all soil types
182	Dawyck Pyramidal Beech	Fagus sylvatica	'Dawyck	100	25	columnar	light green	edible nuts		6	No			W,M
183	Sentry Columnar Ginkgo	Ginkgo biloba	'Sentry	40	15	columnar	yellow	seedless male		6	Yes			all soil types
194										4	No			
195								H=Clay loam		4	No			
196								P=Silt loam		4	No			

Updated: 2007

City of Kirkland
Street Tree Selection

Minimum 4' Planting Strip Width

Common Name	Scientific Name	Cultivar	Height in FT	Width in FT	Shape	Features/Considerations	Drought Tolerant	Overhead Utilities	Soil Type
Trident Maple	*Acer buergeranum*		25	20	round	red in fall	✔	✔	all
Hedge Maple	*Acer campestre*	Queen Elizabeth	30	30	rounded	low maintenance; yellow in fall	✔	✔	all
Rocky Mountain Glow Maple	*Acer grandidentatum*	Schmidt	25	15	oval	orange/red in fall	✔	✔	well drained
Flame Maple	*Acer ginnala*	Flame	20	20	low branching	hardy/available; orange/red in fall		✔	all
Rocky Mountain Maple	*Acer glabrum*		25	15	oval	deep lobed leaves; orange/red in fall; red twigs		✔	well drained
Paperbark Maple	*Acer griseum*		25	20	upright/round	peeling brown bark; red in fall		✔	all
Tartarian Maple	*Acer tartaricum*		25	20	small rounded	yellow/red in fall	✔	✔	all
Allegheny Serviceberry	*Amelanchier laevis*	Cumulus	25	15	oval/irregular	white flowers, edible fruit; orange fall color	✔	✔	all
Autumn Brilliance Serviceberry	*Amelanchier x grandiflora*	Autumn Brilliance	20	15	upright, speading	white flowers, edible fruit;red in fall		✔	all
Cole's Select Serviceberry	*Amelanchier x grandiflora*	Cole	20	15	rounded	red in fall		✔	all
Princess Diana Serviceberry	*Amelanchier x grandiflora*	Princess Diana	25	15	gracefully spreading	white flowers, edible fruit		✔	all
Glorybower	*Clerodendrum trichotomum*		20	20	rounded	Fragrant flowers in summer; blue berries in fall	✔	✔	all
Japanese Dogwood	*Cornus kousa*		20	20	horizontal	large white flowers; red in fall		✔	well drained
Cornelian Cherry Dogwood	*Cornus mas*		25	20	oval-rounded	yellow flowers; red in fall		✔	all
Smoke Tree	*Cotinus coggygria*		10	15	upright/rounded	tree form; difficult to transplant; smokey flowers; mix color in fall	✔	✔	all
Thornless Cockspur Hawthorn	*Crataegus crus-galli*	Inermis	25	25	rounded	no thorns; orange fall color	✔	✔	all
Crimson Cloud Hawthorn	*Crataegus laevigata*	Crimson Cloud	25	18	shrubby/round	red flowers, fruit with star-shaped area in center	✔	✔	all
Snowbird Hawthorn	*Crataegus mordenensis*	Snowbird	22	20	upright oval	double white flowers		✔	all
Washington Hawthorn	*Crataegus phaenopyrum*		25	20	oval/rounded	white flowers, red fruit; orange/red in fall	✔	✔	all
Lavalle Hawthorn	*Crataegus x lavallei*		28	20	irregular/vase	white flowers, orange fruit	✔	✔	all
Golden Desert Ash	*Fraxinus excelsior*	Aureafolia	20	20	rounded	golden twigs	✔	✔	all
Raywood Ash	*Fraxinus oxycarpa*	Raywood	35	25	oval	fast grower; purple fall color			all
Carolina Silverbells	*Halesia carolina*		30	20	broadly/pyramidal	white/bell flowers		✔	well drained
Mountain Silverbell	*Halesia monticola*		40	25	conical/rounded	white/bell flowers; yellow in fall			well drained
Goldenrain Tree	*Koelreuteria paniculata*		30	30	rounded	yellow clusters	✔	✔	all
Amur Maackia	*Maackia amurensis*		25	20	vase	white flower clusters	✔	✔	all
Victoria Magnolia	*Magnolia grandiflora*	Victoria	20	20	pyramidal	creamy flowers, non -windy site	✔	✔	well drained
Northern Japanese Magnolia	*Magnolia kobus*		35	25	rounded	red fruit			well drained
Merrill Magnolia	*Magnolia x loebneri*	Merrill	25	25	oval/rounded	white/pink flowers at early age			all
Adirondack Crabapple	*Malus spp.*	Adirondack	18	10	columnar	white/pink flowers, red/orange fruit	✔	✔	all
Red Jewel Crabapple	*Malus spp.*	Jewelcole	15	12	rounded	white flowers, red fruit until mid-Dec	✔	✔	all
Centurion Crabapple	*Malus spp.*	Centzam	20	15	narrow	red flower; purple bronze leaves	✔	✔	all
Golden Raindrops	*Malus spp.*	Golden Raindrops	20	15	vase	deep cut leaves; golden fruit	✔	✔	all
Sugar Tyme Crabapple	*Malus spp.*	Sutyzam	18	15	oval	pink buds, white flower	✔	✔	all
Sentinel Crabapple	*Malus spp.*	Sentinel	20	12	columnar	pale pink flowers	✔	✔	all
Tschonoskii Crabapple	*Malus tschonoskii*		28	14	narrowly oval	white flowers, greenish fruit	✔	✔	all
American Hophornbeam	*Ostrya virginiana*		35	25	upright oval	hop-like fruit; yellow in fall	✔		all
Sourwood	*Oxydendrum arboreum*		20	15	rounded	white bell clusters; orange in fall		✔	well drained acidic
Persian Parrotia	*Parrotia persica*		30	20	rounded	early flowers; mix of fall color			well drained
Krauter Vesuvius Plum	*Prunus cerasifera*	Krauter Vesuvius	20	15	upright	light pink flowers; tolerates heat; purple leaves	✔	✔	all
Thundercloud Plum	*Prunus cerasifera*	Thundercloud	20	20	upright/rounded	light pink flowers; purple leaves	✔	✔	all
Mt. St. Helens Plum	*Prunus spp.*	Frankthress	20	20	rounded	light pink flowers; fast growing; purple leaves		✔	all
Newport Plum	*Prunus cerasifera*	Newport	20	20	rounded	pale pink flowers; purple leaves		✔	all
Summer Glow Bird Cherry	*Prunus padus*	Summer Glow	25	20	oval/round	white flowers; purple leaves		✔	all
European Bird Cherry	*Prunus padus*		30	25	round	white flowers in long clusters			all
Capital Pear	*Pyrus calleryana*	Capital	35	12	columnar	white flowers; red in fall	✔		all
Chanticleer Pear	*Pyrus calleryana*	Chanticleer	40	15	pyramidal	white flowers; red in fall	✔		all
Japanese Snowbell	*Styrax japonicus*		25	25	rounded	bell shaped flowers; yellow in fall	✔	✔	well drained acidic
Fragrant Snowbell	*Styrax obassia*		25	15	oval	fragrant flowers in summer	✔	✔	all
Ivory Silk Japanese Tree Lilac	*Syringa reticulata*	Ivory Silk	20	15	upright/rounded	creamy panicles, heavy flowering		✔	well drained

City of Kirkland
Street Tree Selection

Minimum 6' Planting Strip Width

Updated: 2007

Common Name	Scientific Name	Cultivar	Height in FT	Width in FT	Shape	Features/Considerations	Drought Tolerant	Overhead Utilities	Soil type
Japanese Maple	*Acer palmatum*		25	25	horizontal	fine-textured leaves; orange/ red in fall		✔	well drained
Columnar Norway Maple	*Acer platanoides*	Columnar	35	15	narrow	column of green foliage; yellow in fall	✔		all
Crimson Sentry Maple	*Acer platanoides*	Crimson Sentry	25	15	oval	purple leaves maroon in fall	✔	✔	all
Globe Norway Maple	*Acer platanoides*	Globosum	15	18	dense/globe	yellow in fall		✔	all
Armstrong Maple	*Acer rubrum*	Armstrong	45	15	narrow	fast growing; yellow orange in fall			all
Bowhall Maple	*Acer rubrum*	Bowhall	40	15	narrow	great fall color			all
Goldspire Sugar Maple	*Acer saccharum*	Goldspire	45	15	columnar	yellow in fall			all
Pacific Sunset Maple	*Acer truncatum x A. platanoides*	Warrenred	30	25	oval	orange/red in fall	✔		well drained
California Buckeye	*Aesculus californica*		20	30	rounded	fragrant flowers		✔	all
Red Horse Chestnut	*Aesculus x carnea*	Briotti	30	35	rounded	long rosy cluster; small variety; spiky nuts	✔		all
American Hornbeam	*Carpinus caroliniana*		25	20	oval	smooth gray trunk; yellow to orange in fal		✔	all
European Hornbeam	*Carpinus betulus*	Fastigiata	35	25	upright/oval	catkins turn brown in November; yellow in fall	✔		all
Japanese Hornbeam	*Carpinus japonicus*		30	25	rounded vase	white/yellow flowers; red in fall	✔		all
Katsura Tree	*Cercidiphyllum japonicum*		40	40	pyramidal/rounded	heart shaped leaves; red orange in fall			all
Eastern Redbud	*Cercis canadensis*		35	25	horizontal	purple-pink flowers; yellow in fall			all
Yellowwood	*Cladrastis kentukea*		30	40	round	fragrant summer flowers; yellow in fall	✔		all
Dove Tree	*Davidia involucrata*		35	28	broad pyramidal	white bracts	✔		well drained
Dawyck Purple Beech	*Fagus sylvatica*	Dawyck Purple	40	12	columnar	purple leaves			all
Dawyck Pyramidal Beech	*Fagus sylvatica*	Dawyck Pyramid Beech	45	20	columnar	purple leaves			all
Rosehill Ash	*Fraxinus americana*	Rosehill	50	35	upright/oval	strong leader; red/purple in fall	✔		all
Flowering Ash	*Fraxinus ornus*		30	15	pyramidal/round	yellow in fall	✔		all
Marshall Ash	*Fraxinus pennsylvanica*	Marshall	50	40	broadly oval	tough/adaptable; yellow in fall	✔		all
Summit Ash	*Fraxinus pennsylvanica*	Summit	45	25	narrowly oval	yellow in fall	✔		all
Princeton Sentry Ginkgo	*Ginkgo biloba*	Princeton Sentry	40	15	columnar	seedless male; yellow in fall	✔		all
Skyline Honeylocust	*Gleditsia triacanthos*	Skycole	45	35	broadly pyramidal	tolerant of polution; golden in fall	✔		all
Shademaster Honeylocust	*Gleditsia triacanthos*	Shademaster	45	35	vase	upright branching; yellow in fall	✔		all
Golden Chain Tree	*Laburnum x watereri*	Vossii	30	20	upright	yellow flowers; poisonous			all
Japanese Flowering Crabapple	*Malus floribunda*		18	25	irregular	pink flowers, yellow/red fruit	✔	✔	all
Indian Summer Crabapple	*Malus spp.*	Indian Summer	18	20	rounded	red flower; wide	✔	✔	all
Prairifire Crabapple	*Malus spp.*	Prairifire	20	20	upright/rounded	pinkish/red buds, flowers;dark red-purple fruit wide	✔	✔	all
Robinson Crabapple	*Malus spp.*	Robinson	25	25	rounded	deep pink flower; fast growing	✔	✔	all
Snowdrift Crabapple	*Malus spp.*	Snowdrift	20	20	spreading/round	white flowers, orange fruit	✔	✔	all
Fruitless Mulberry	*Morus alba*	Kingens	35	40	rounded	fruitless	✔		all
Sour Gum/Black Tupelo	*Nyssa sylvatica*		35	20	pyramidal	red yellow in fall			all
European Hophornbeam	*Ostrya carpinifolia*		40	25	rounded	nutlets in hop-like bunches	✔		all
Macho Cork Tree	*Phellodendron amurense*	Macho	40	30	vase shaped	seedless; yellow in fall			all
Spire Cherry	*Prunus x hillieri*	Spire	30	10	dense	soft pink flowers; orange/red in fall			all
Kwanzan Flowering Cherry	*Prunus serrulata*	Kwanzan	30	20	vase/rounded	pink/double; hardiest Prunus serrulata; orange in fall			all
Autumn Flowering Cherry	*Prunus subhirtella*	Autumnalis Rosea	25	20	spreading	semi-double/flowers in Nov & spring; yellow in fall		✔	all
Canada Red Chokecherry	*Prunus virginiana*	Canada Red	25	22	rounded	unusual bark; purple leaves; red in fall			all
Akebono Cherry	*Prunus x yedoensis*	Akebono	25	25	upright	delicate pink flowers; yellow in fall		✔	all
Aristocrat Pear	*Pyrus calleryana*	Aristocrat	40	28	pyramidal	open formal appearance; red fall			all
Redspire Pear	*Pyrus calleryana*	Redspire	35	25	pyramidal	white flowers; red in fall	✔		all
Prairie Gem	*Pyrus ussuriensis*	MorDak	25	25	rounded	hardiest ornamental pear; yellow fall color	✔		all
Sawtooth Oak	*Quercus acutissima*		40	40	rounded	clean foliage; yellow/brown in fall			well drained acidic
Skyrocket Oak	*Quercus robur*	Fastigiata	45	15	narrow/fastigiate	yellow/brown in fall	✔		well drained acidic
Japanese Pagodatree	*Sophora japonica*	Regent	50	45	rounded/upright	Creamy white flowers in clusters	✔		well drained
Japanese Stewartia	*Stewartia pseudocamellia*		30	20	pyramidal/oval	white flowers; peeling bark;yellow red/purple in fall	✔	✔	moist acidic
Greenspire Linden	*Tilia cordata*	Greenspire	40	30	pyramidal	strong/uniform; yellow in fall	✔		all
Village Green Zelkova	*Zelkova serrata*	Village Green	40	38	vase shaped	clean appearance; red in fall			all

Updated: 2007

City of Kirkland
Street Tree Selection

Minimum 8' Planting Strip Width

Common Name	Scientific Name	Cultivar	Height in FT	Width in FT	Shape	Features/Considerations	Drought Tolerant	Overhead Utilities	Soil type
State Street Maple	*Acer miyabei*	Morton	45	30	rounded	red in fall	✔		all
Cleveland Maple	*Acer platanoides*	Cleveland	40	30	oval/dense	yellow in fall			all
Crimson King Maple	*Acer platanoides*	Crimson King	40	35	oval/rounded	purple leaves; reddish bronze in fall			all
Deborah Maple	*Acer platanoides*	Deborah	45	40	oval/rounded	dark bronze green leaves; bronze in fall			all
Emerald Queen Maple	*Acer platanoides*	Emerald Queen	50	40	oval/upright	tolerant of pollution			all
Summershade Maple	*Acer platanoides*	Summershade	42	40	broad/rounded	fast growing; yellow in fall			all
Spaethii Maple	*Acer pseudoplatanus*	Atropurpureum	40	30	oval/upright	salt tolerant; green/purple leaves			all
Red Sunset Maple	*Acer rubrum*	Franksred	45	35	upright/oval	vigorous/symmetrical; orange/red in fall	✔		all
October Glory Maple	*Acer rubrum*	October Glory	40	35	oval/round	reddish purple in fall			all
Schlesinger Maple	*Acer rubrum*	Schlesingeri	45	35	vase shaped	orange/red in fall			all
Green Mountain Sugar Maple	*Acer saccharum*	Green Mountain	45	35	oval	hardiest Sugar Maple; orange/red fall color	✔		all
Common Horsechestnut/ European Horsechestnut	*Aesculus hippocastanum*		60	45	upright oval	flowers have blotch of yellow to red color at their base, 2" hard seeds in spiky shell			all all
Jacquemontii Birch	*Betula jacquemontii*		40	30	upright/oval	yellow in fall			all
River Birch	*Betula nigra*		40	35	pyramidal/rounded	yellow in fall			all
Hardy Rubber Tree	*Eucommia ulmoides*		55	45	conical/globose	yellowish in fall	✔		all
Kentucky Coffeetree	*Gymnocladus dioicius*		65	50	ovate	bluish green leaflets, yellow in fall	✔		all
Sweetgum	*Liquidambar styraciflua*	Palo Alto	55	45	pyramidal	aromatic leaves; brittle; red orange purple in fall			all
Tulip Tree	*Liriodendron tulipifera*		60	30	oval	yellow flowers; yellow in fall			all
Sargent Cherry	*Prunus sargentii*	Columnaris	30	20	upright/rounded	single pink flowers; purple-black fruit in July; red in fall		✔	all
Mount Fuji Flowering Cherry	*Prunus serrulata*	Shirotae	15	20	spreading	fragrant flowers, white/pink buds, red fruit		✔	all
Swamp White Oak	*Quercus bicolor*		45	45	rounded	adapted to wet soils	✔		well drained acidic
Scarlet Oak	*Quercus coccinea*		50	40	upright/oval	red in fall	✔		all
Pin Oak	*Quercus palustris*		55	40	pyramidal	strong leader; retains leaves in winter; orange/red in fall	✔		well drained acidic
English Oak	*Quercus robur*		50	40	broadly/rounded	yellow/ brown in fall	✔		well drained
Red Oak	*Quercus rubra*		50	45	rounded	fast growing/large; red in fall			well drained acidic
Shumard Oak/Texas Red Oak	*Quercus shumardii*		50	40	upright/oval	red in fall	✔		well drained acidic
Crimean Linden	*Tilia x euchlora*		40	35	pyramidal/oval	golden green twigs; yellow in fall			all
Village Green Zelkova	*Zelkova serrata*	Village Green	40	38	vase shaped	clean appearance; red in fall			all

~~j.Operation and maintenance of any system of dikes, ditches, drains, or other facilities existing on September 8, 1975, which were created, developed, or utilized primarily as a part of an agricultural drainage or diking system;~~

~~k.Any project with a certification from the governor pursuant to chapter 80.50 RCW;~~

~~l.Site exploration and investigation activities that are prerequisite to preparation of an application for development authorization under this chapter, if:~~

~~i.The activity does not interfere with the normal public use of the surface waters;~~

~~The activity will have no significant adverse impact on the environment including, but not limited to, fish, wildlife, fish or wildlife habitat, water quality, and aesthetic values;~~

~~ii.The activity does not involve the installation of a structure, and upon completion of the activity the vegetation and land configuration of the site are restored to conditions existing before the activity;~~

~~iii.A private entity seeking development authorization under this section first posts a performance bond or provides other evidence of financial responsibility to the local jurisdiction to ensure that the site is restored to preexisting conditions; and~~

~~iv.The activity is not subject to the permit requirements of RCW 90.58.550;~~

~~m.The process of removing or controlling an aquatic noxious weed, as defined in RCW 17.26.020, through the use of an herbicide or other treatment methods applicable to weed control that are recommended by a final environmental impact statement published by the Department of Agriculture or the Department of Ecology jointly with other state agencies under chapter 43.21C RCW.~~

~~n.Watershed restoration projects.~~

~~o.A public or private project that is designed to improve fish or wildlife habitat or fish passage, when all of the following apply:~~

~~a.The project has been approved in writing by the department of fish and wildlife;~~

~~b.The project has received hydraulic project approval by the department of fish and wildlife pursuant to chapter 77.55 RCW; and~~

~~c.~~**a.** ~~The local government has determined that the project is su~~ a minimum of 12' in height ~~th the local shoreline master program. The local government shall make such determination in a timely manner and provide it by letter to the project proponent.~~

97. Tour Boat Facility: A moorage pier designed for commercial tour boat usage.

98. Tree: A woody plant having a single usually elongated main stem ~~at least 12-15' tall~~, having a distinct head in most cases. The Urban Forester shall have the authority to determine whether any specific woody plant shall be considered a tree or a shrub.

99. Upland: Generally described as the dry land area above and landward of the ordinary high water mark.

100. Utilities: Services, facilities and infrastructure that produce, transmit, carry, store, process or dispose of electric power, gas, water, sewage, communications, oil, storm water, and similar services and facilities.

101. Utility Production and Processing Facilities: Facilities for the making or treatment of a utility, such as power plants and sewage treatment plants or parts of those facilities.

102. Utility Transmission Facilities: Infrastructure and facilities for the conveyance of services, such as power lines, cables, and pipelines.

103. View Corridor: An open area of the subject property that provides views unobstructed by structures an across the subject property from the adjacent right-of-way to Lake Washington.

KZC 83.370 SHORELINE VEGETATION MANAGEMENT

Reduction Mechanism		Reduction Allowance
6	Installation of pervious material for all pollution generating surfaces such as a driveway, parking or private road, that ~~.~~ allows water to pass through at rates similar to pre-developed conditions.	Reduce required setback by 2 percentage points
7	Limiting the lawn area within the shoreline setback to no more than 50 percent of the reduced setback area.	Reduce required setback by 2 percentage points
8	Preserving or restoring at least 20 percent of the total lot area outside of the reduced setback and any critical areas and their associated buffers as native vegetation.	Reduce required setback by 2 percentage points

83.370 Shoreline Vegetation Management

~~83.281~~83.286 Tree Retention. To maintain the ecological functions that trees provide to the shoreline environment, significant trees shall be retained or, if removed, the loss of shoreline ecological functions shall be mitigated for, subject to the following standards:~~as follows:~~

4. Tree removal on a property on which no development activity is proposed or in progress.

   a. Any owner of developed property may remove up to two significant trees from their property, subject to the standards contained in Chapter 95 KZC.

   b. Replanting Requirements –

      1) If a significant tree located within the shoreline setback area is proposed to be removed, is damaged or has fallen, a three-for-one replacement is required as mitigation. The required minimum size of the replacement trees shall be six (6) feet tall for a conifer and 2-inch caliper for deciduous or broad-leaf evergreen tree.

      2) For required replacement trees, a planting plan showing location, size and species of the new trees is required to be submitted to and approved to by the Planning Official. All replacement trees in the shoreline setback must be selected from the Kirkland Native Plant List, or other native species approved by the Planning Official or Urban Forester.

      3) Tree replacement planting required by this section shall be performed in compliance with the applicable standards contained in this section, unless the applicant demonstrates that it is not feasible to plant all of the required mitigation trees on the subject property, given the existing tree canopy coverage and location of trees on the property, the location of structures on the property, and minimum spacing requirements for the trees to be planted. In this circumstance, the applicant or property owner may request an alternate mitigation that will be equal or superior to the provisions of this section in accomplishing the purpose and intent of maintaining shoreline ecological functions and processes. This may include, but shall not be limited to, a riparian restoration plan consisting of shrubs, perennials, groundcovers selected from the Kirkland Native Plant List which shall equal at minimum 80 square feet for each tree to be replanted. Applicants who request to use alternative measures shall submit a restoration plan to be reviewed by the Planning Official or Urban Forester, who may approve, approve with conditions, or deny the request.

   ~~a. Submittal Requirements – When proposing to trim or remove any tree located within the shoreline setback, the property owner must submit a Tree Removal/Pruning Request form to the City containing the following:~~

   ~~1)~~4)~~A site plan showing the approximate location of significant trees, their size (DBH) and their species, along with the location of structures, driveways, access ways and easements.~~

2)An arborist report explaining how the tree(s) fit the criteria for a nuisance or hazard tree. This requirement may be waived by the Planning Official if it is determined that the nuisance or hazard condition is obvious.

3)5)If removal of a significant tree in the shoreline setback area is approved by the Planning Official, a three-for-one replacement is required. The required minimum size of the replacement tree shall be six (6) feet tall for a conifer and 2-inch caliper for deciduous or broad-leaf evergreen tree. For required replacement trees, a planting plan showing location, size and species of the new trees is required.

4)6)Tree replacement planting required by this section shall be performed in compliance with the applicable standards contained in this section, unless the applicant demonstrates that alternate measures or procedures will be equal or superior to the provisions of this section in accomplishing the purpose and intent of maintaining shoreline ecological functions and processes. Requests to use alternative measures and procedures shall be reviewed by the Planning Official or Urban Forester, who may approve, approve with conditions, or deny the request. The Planning Official or Urban Forester shall consider the existing tree canopy coverage on the property, ability to accommodate additional trees, given needed spacing requirements, and the ability of the alternative replanting to replace existing functions of the tree that was removed.

b.Standards - Within the shoreline setback, existing significant trees shall be retained unless the tree is determined to be a hazard or nuisance tree.

1)Hazard Tree Criteria. For the purposes of this subsection, Hazard Tree Criteria is assessed by 1) the presence of a defect as an indicator of potential tree failure, and 2) the presence of a moderate to high-use target area. Low-use target areas would include those areas which are infrequently or seldom used for any great length of time, such as an overflow parking area, natural or wilderness areas, etc. Moderate use would include those areas where people move through regularly, but do not stay, such as parks, parking lots, secondary roads, etc. High-use targets would include those areas that are frequently used by people, often for longer periods of time, or high volumes of people coming and going. Examples would include pick-up/drop off areas, visitor centers, residential buildings, main arterial roads, etc.'; A hazard tree must meet the following criteria:

a)The tree must have a combination of structural defects and/or disease which makes it subject to a high probability of failure and is in proximity to moderate-high frequency of persons or property and

b)The hazard condition of the tree cannot be lessened with reasonable and proper arboricultural practices nor can the target be removed.

2)Nuisance Tree Criteria. A nuisance tree must meet the following criteria:

a)Tree is causing obvious, physical damage to private or public structures, including but not limited to: sidewalk, curb, road, driveway, parking lot, building foundation, roof;

b)Tree has been damaged by past maintenance practices, that cannot be corrected with proper arboricultural practices; or

c)The problems associated with the tree must be such that they cannot be corrected by any other reasonable practice. Including but not limited to the following:

i)Pruning of the crown or roots of the tree and/or small modifications to the site including but not limited to a driveway, parking lot, patio or sidewalk to alleviate the problem.

ii)Pruning, bracing, or cabling to reconstruct a healthy crown.

5. Tree removal on a property on which development activity is proposed or in progress.

1) Submittal Requirements – When proposing a development activity on a lot containing trees within the shoreline setback, the following shall be required:

   a) A site plan showing the approximate location of significant trees, their size (DBH) and their species, along with the location of existing structures, driveways, access ways and easements and the proposed improvements.

   b) An arborist report stating the size (DBH), species, and assessment of health ~~and determination~~ of all trees located within the shoreline setback. This requirement may be waived by the Planning Official if it is determined that there are no trees within the shoreline setback that have the potential to be impacted by proposed development activity.

2) Standards - Within the shoreline setback, existing significant trees shall be retained, provided that the trees are determined to be healthy and windfirm by a qualified professional, and provided the trees can be safely retained with proposed development activity. The Planning Official is authorized to require site plan alterations to retain significant trees in the shoreline setback. Such alterations include minor adjustments to the location of building footprints, adjustments to the location of driveways and access ways, or adjustment to the location of walkways, easements or utilities. The applicant shall be encouraged to retain viable trees in other areas on-site.

3) Replanting Requirements –

   ~~(b)~~a) If removal of a significant tree in the shoreline setback area is approved by the Planning Official, a three-for-one replacement is required. The required minimum size of the replacement trees shall be (6) feet tall for a conifer and 2-inch caliper for deciduous or broad-leaf evergreen tree.

   b) For required replacement trees, a planting plan showing location, size and species of the new trees is required. All replacement trees in the shoreline setback must be selected from the Kirkland Native Plant List, or other native species approved by the Planning Official or Urban Forester.~~.~~

   c) Tree replacement planting required by this section shall be performed in compliance with the applicable standards contained in this section, unless the applicant demonstrates that it is not feasible to plant all of the required mitigation trees on the subject property, given the existing tree canopy coverage and location of trees on the property, the location of structures on the property, and minimum spacing requirements for the trees to be planted. In this circumstance, the applicant or property owner may request an alternate mitigation that will be equal or superior to the provisions of this section in accomplishing the purpose and intent of maintaining shoreline ecological functions and processes. This may include, but shall not be limited to, a riparian restoration plan consisting of shrubs, perennials, groundcovers selected from the Kirkland Native Plant List which shall equal at minimum 80 square feet for each tree to be replanted. Applicants who request to use alternative measures shall submit a restoration plan to be reviewed by the Planning Official or Urban Forester, who may approve, approve with conditions, or deny the request.

6. Tree Pruning - Non-destructive thinning of lateral branches to enhance views or trimming, shaping, thinning or pruning of a tree necessary to its health and growth is allowed, consistent with the following standards:

a. In no circumstance shall removal of more than one-third (1/3) of the original crown be permitted;

b. Pruning does not include topping, stripping of branches or creation of an imbalanced canopy;

c. Pruning should retain branches that overhang the water to the maximum extent possible; and

d. Pruning does not directly impact the nearshore functions and values including fish and wildlife habitat.

7. Required Landscaping – Riparian vegetation contributes to shoreline ecological functions by a number of different ways, including maintaining temperature; removing excessive nutrients and toxic compounds, attenuating wave energy, sediment removal and stabilization; and providing woody debris and other organic matter. In order to minimizing potential impacts to shoreline ecological functions from development activities, the following shoreline landscaping standards are required:~~To maintain the ecological functions that trees provide to the shoreline environment, significant trees shall be retained as follows:~~

   a. Minimum Landscape Standard Compliance - The applicant shall plant native vegetation, as necessary, in at least 75 percent of the nearshore riparian area located along the water's edge. The vegetated portion of the nearshore riparian area shall average ten (10) feet in depth from the ordinary high water mark, but may be a minimum of five (5) feet wide to allow for variation in landscape bed shape and plant placement. For Detached, Attached or Stacked Dwelling Units within the Residential – M/H shoreline environment, the vegetated portion of the nearshore riparian area shall average fifteen (15) feet in depth from the ordinary high water mark. Installation of native vegetation shall consist of a mixture of trees, shrubs and groundcover and be designed to improve habitat functions. At least three (3) trees per 100 linear feet of shoreline must be included in the plan, with portions of a tree rounded up to the next required tree.~~.~~ Plant materials must be native and selected from the Kirkland Native Plant List, or other native species approved by the Planning Official or Urban Forester.~~.~~

   b. Use of Existing Vegetation - The City may accept existing native trees, shrubs and groundcover as meeting the requirements of this section, including vegetation previously installed as part of a prior development activity, provided that the existing vegetation provides a landscape strip at least as effective in protecting shoreline ecological functions as the required landscaping. The City may require the applicant to plant trees, shrubs, and groundcover according to the requirements of this section to supplement the existing vegetation in order to provide a buffer at least as effective as the required buffer.

   c. Landscape Plan Required - The applicant shall submit a landscape plan that depicts the quantity, location, species, and size of plant materials proposed to comply with the requirements of this section, and shall address the plant installation and maintenance requirements set forth in KZC Section 95.45. Plant materials shall be identified with both their scientific and common names. Any required irrigation system must also be shown.

   d. Vegetation placement – Vegetation selection and placement shall comply with the following standards:

      1) Vegetation shall be selected and positioned on the property so as not to obscure the public view within designated view corridors from the public right-of-way to the waters of Lake Washington and the shoreline on the opposite side of the Lake at the time of planting or upon future growth.

      2) Vegetation may be selected and positioned to maintain private views of the water by clustering vegetation in a selected area, provided that the minimum landscape standard is met.

   e. Alternative Compliance. Landscaping required by this section shall be performed in compliance with the applicable standards contained in this section, unless the applicant demonstrates one of the following:

      1) That the vegetation will not realize the intended shoreline ecological functions as a result of existing conditions, such as the presence of extensive shoreline stabilization measures that extend landward from the ordinary high water mark; or

      2) That it is not feasible to plant all of the required vegetation on the subject property, given the existing tree canopy coverage and location of trees on the property, the location of structures on the property, or minimum spacing requirements for the vegetation to be planted; or

3) That the vegetation will substantially interfere with the use and enjoyment of the portion of the property located between the residence and ordinary high water mark, such as but not limited to, when structures are located within 15 feet of the ordinary high water mark; and

4) T~~t~~hat alternate measures or procedures will be equal or superior to the provisions of this section in accomplishing the purpose and intent of maintaining and improving shoreline ecological functions and processes. Examples include, but are not limited to:

For a proposed modification to the landscape strip –

a) Softening or removal of existing hard shoreline stabilization measures or portions thereof.

b) Opening of previously piped on-site watercourse to allow potential rearing opportunities for anadromous fish.

For a proposed modification to the tree plantings required as part of the landscape strip –

c) Increasing the width of the required landscape strip within the shoreline setback for a minimum of five (5) additional feet.

Requests to use alternative measures and procedures shall be reviewed by the Planning Official and City's shoreline consultant, who may approve, approve with conditions, or deny the request. The cost of producing and implementing the plan, as well as the review of the proposal by the City's consulting biologist, shall be borne by the applicant. ~~Examples include but are not limited to:~~

~~.~~

~~3)Removal of an existing hard structural shoreline stabilization measure covering at least 15 feet of the lake frontage which is located at, below, or within 5 feet landward of the lake's OHWM and subsequent restoration of the shoreline to a natural or semi-natural state, including creation of shallow-water beach habitat and beach/substrate composition.~~

~~4)Setting back hard structural shoreline stabilization measures or portions of hard structural shoreline stabilization measures from the ordinary high water mark and subsequent restoration of the shoreline to a natural or semi-natural state, including creation of shallow-water beach habitat and beach/substrate composition.~~

~~a)Use of low impact development techniques that demonstrate a significant improvement in water quality treatment from the site..~~

~~5)Placing fill material for purposes of habitat enhancement (creation or restoration of nearshore shallow-water habitat) waterward of the ordinary high water mark.~~

~~6)~~5)~~Opening of previously piped on-site watercourse to allow potential rearing opportunities for anadromous fish. Opened watercourses must be provided with a native planted buffer at least five (5) feet wide on either side of the stream and a minimum 20 foot wide structure setback measured from the ordinary high water mark of the stream, and must not encumber adjacent properties without express written permission of the adjacent property owner. Opened watercourses must be designed by a qualified professional with experience in stream restoration.~~

~~e.~~f. Responsibility for Regular Maintenance.

1) The applicant, landowner, or successors in interest shall be responsible for the regular maintenance of landscaping required under this section. Plants that die must be replaced in kind.

2) All required landscaping shall be maintained throughout the life of the development. Prior to issuance of a certificate of occupancy, the proponent shall provide a final as-built landscape plan and a recorded agreement to maintain and replace all landscaping that is required by the City.

TREE REMOVAL IN CRITICAL AREAS

b. Submittal Requirements – When proposing to trim or remove any tree located within critical areas or critical area buffers, the property owner must submit a report to the City containing the following:

1) A site plan showing the approximate location of significant trees, their size (DBH) and their species, along with the location of structures, driveways, access ways and easements.

2) An arborist report explaining how the tree(s) fit the criteria for a nuisance or hazard tree. This requirement may be waived by the Planning Official if it is determined that the nuisance or hazard condition is obvious.

3) A proposal detailing how the trees will be made into a snag or wildlife tree, including access and equipment, snag height, and placement of woody debris.

4) For required replacement trees, a planting plan showing location, size and species of the new trees.

c. Tree Removal Standards

1) If a tree is considered a nuisance or hazard in a critical area or its buffer, the priority action is to create a "snag" or wildlife tree with the subject tree. If creation of a snag is not feasible, then the felled tree shall be left in place unless the Planning Official permits its removal in writing.

a) Hazard Tree Criteria. A hazard tree must meet the following criteria:

i) The tree must have a combination of structural defects and/or disease which makes it subject to a high probability of failure and is in proximity to moderate-high frequency of persons or property; and

ii) The hazard condition of the tree cannot be lessened with reasonable and proper arboricultural practices nor can the target be removed.

b) Nuisance Tree Criteria. A nuisance tree must meet the following criteria:

i) Tree is causing obvious, physical damage to private or public structures, including but not limited to: sidewalk, curb, road, driveway, parking lot, building foundation, roof;

ii) Tree has been damaged by past maintenance practices, that cannot be corrected with proper arboricultural practices; or

iii) The problems associated with the tree must be such that they cannot be corrected by any other reasonable practice. Including but not limited to the following:

1. Pruning of the crown or roots of the tree and/or small modifications to the site including but not limited to a driveway, parking lot, patio or sidewalk to alleviate the problem.

2. Pruning, bracing, or cabling to reconstruct a healthy crown.

2) The removal of any tree will require the planting of a native tree of a minimum of six feet in height in close proximity to where the removed tree was located. Selection of native species and timing of installation shall be coordinated with the Planning Official.

7. Mitigation and Restoration Plantings in Critical Areas and Critical Area Buffers.

a. Plants intended to mitigate for the loss of natural resource values are subject to the following requirements.

1) Plant Source. Plant materials must be native and selected from the Kirkland Plant List. Seed source must be as local as possible, and plants must be nursery propagated unless

If it is determined that the electronic readerboard constitutes a traffic hazard for any reason, the Planning Director may impose additional conditions.

Chapter 95 – Tree Management and Required Landscaping

95.10 Definitions

The following definitions shall apply throughout this chapter unless the context clearly indicates otherwise. Definitions that apply throughout this code are also located in Chapter 5 KZC.

Caliper – Limit of Disturbance *(no change)*

Qualified Professional – An individual with relevant education and training in arboriculture or urban forestry. The individual must be an arborist certified by the International Society of Arboriculture (ISA) or a registered consulting arborist from the American Society of Consulting Arborists and for Forest Management Plans may be a certified forester by the Society of American Foresters. A qualified professional must possess the ability to perform tree risk assessments and prescribe appropriate measures necessary for the preservation of trees during land development. In addition, arborists making recommendations for tree removals within critical areas must have Tree Risk Assessor certification as established by the Pacific Northwest Chapter of the ISA or equivalent qualifications. For Forest Management Plans, the qualified professional must have the ability to assess wooded sites and prescribe measures for forest health and safety.

Significant Tree – Windfirm *(no change)*

95.35.2.b Tree Plan and Retention Requirements. *(no change)*

1) Tree Plan I. Tree Plan I is required for a development permit or land surface modification resulting in site disturbance for one or two attached, detached, or stacked dwelling units.

   a) *(no change)*

   b) Tree Plan Requirements. The tree plan shall include the following:
      i.-v. *(no change)*
      vi. For Tree Plan I – Major, ~~assessment~~ a report by a qualified professional that contains findings, conclusions and recommendations shall be required if any significant trees are in required yards or within 10 feet of any side property line on the subject property.

   c), d), e) *(no change)*

2)-5) *(no change)*

95.35.3.c With respect to Level IV and Level V Tree Plans, an applicant may appeal an adverse determination to the Hearing Examiner. A written notice of appeal shall be filed with the Planning Department within 14 calendar days following the ~~postmark~~ date of distribution of a Planning Official's decision. The office

of the Hearing Examiner shall give notice of the hearing to the applicant at least 17 calendar days prior to the hearing. The applicant shall have the burden of proving that the Planning Official made an incorrect decision. Based on the Hearing Examiner's findings and conclusions, he or she may affirm, reverse or modify the decision being appealed.

Chapter 100 – Signs

100.55

Development Containing Uses in More Than One Sign Category

If the subject property contains a mix of commercial and residential uses, the residential uses must comply with Sign Category A and the commercial uses must comply with the sign category assigned to the commercial uses that predominate on the subject property. Within mixed use projects, residential uses may have electrical signs (except on designated corridors) only if the electrical signs are attached to areas of the building associated with the commercial uses.

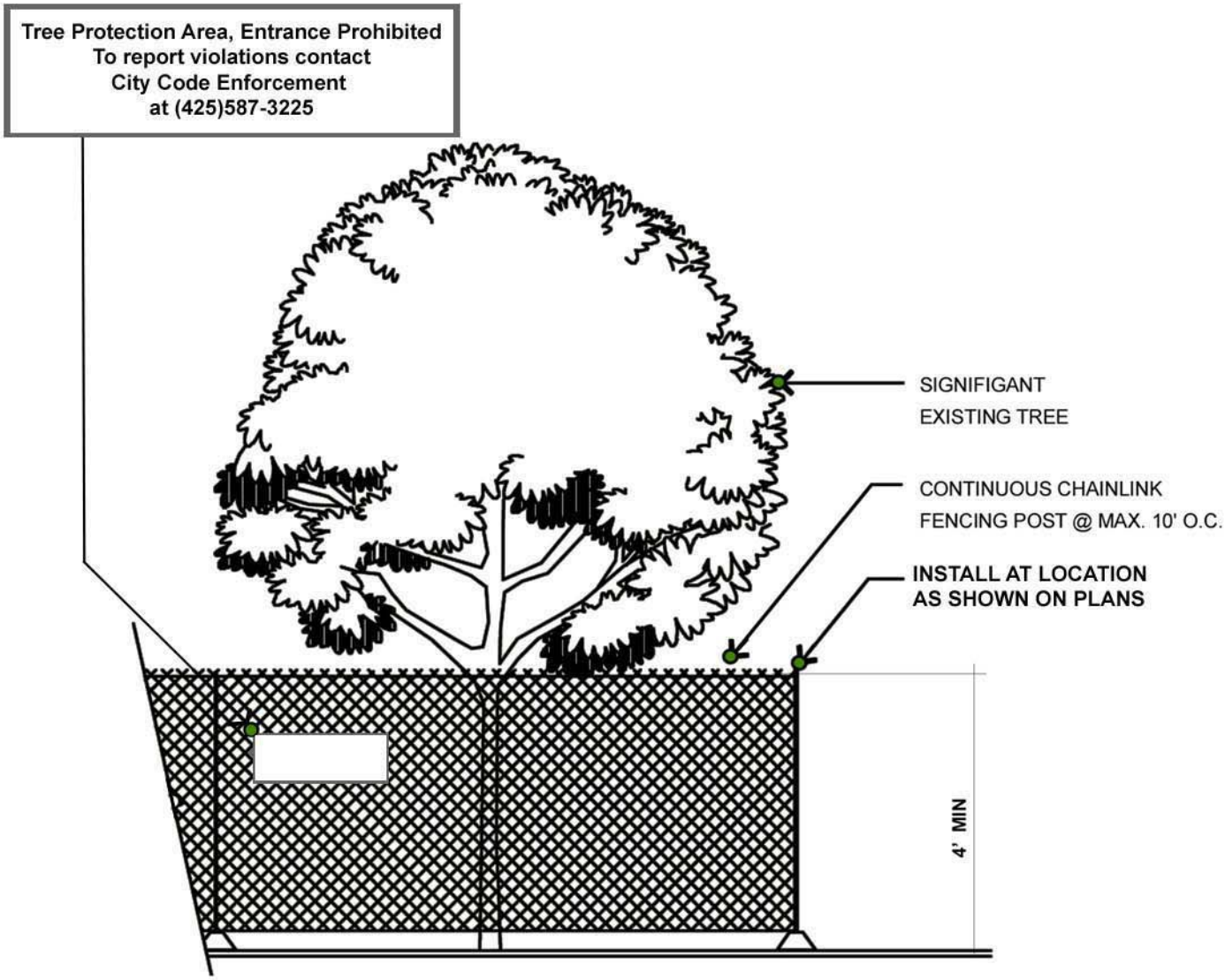
In all other cases, if~~If~~ the subject property contains uses assigned to different sign categories, the signs for the entire development must comply with the sign category assigned to the uses that predominate on the subject property.

Chapter 115 – Miscellaneous Use Development and Performance Standards

Sections:

115.05 User Guide
115.07 Accessory Dwelling Units
115.08 Accessory Structure (Detached Dwelling Unit Uses Only)
115.10 Accessory Uses, Facilities and Activities
115.15 Air Quality Regulations
115.20 Animals in Residential Zones
115.23 Common Recreational Space Requirements for Certain Residential Uses
115.25 Development Activities and Heavy Equipment Operation – Limitations On
115.30 Distance Between Structures/Adjacency to Institutional Use
115.35 Erosion and Sedimentation Regulation
115.40 Fences
115.42 Floor Area Ratio (F.A.R.) Calculation for Detached Dwelling Units in Low Density Residential Zones
115.43 Garage Requirements for Detached Dwelling Units in Low Density Zones
115.45 Garbage and Recycling Receptacles and Enclosures – Storage space, Placement and Screening
115.47 Loading and Service Areas Placement and Screening
115.50 Glare Regulation
115.55 Heat Regulation
115.59 Height Regulations – Calculating Average Building Elevation (ABE)
115.60 Height Regulations – Exceptions
115.65 Home Occupations
115.70 Junk and Junk Yards Prohibited

FENCING SIGN DETAIL



1. MINIMUM FOUR (4) FOOT HIGH TEMPORARY CHAINLINK FENCE SHALL BE PLACED AT THE CRITICAL ROOT ZONE OR DESIGNATED LIMIT OF DISTURBANCE OF THE TREE TO BE SAVED. FENCE SHALL COMPLETELY ENCIRCLE TREE (S). INSTALL FENCE POSTS USING PIER BLOCK ONLY. AVOID POST OR STAKES INTO MAJOR ROOTS. MODIFICATIONS TO FENCING MATERIAL AND LOCATION MUST BE APPROVED BY PLANNING OFFICIAL.

2. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER ONE (1) INCH DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING, AND COVERED WITH SOIL AS SOON AS POSSIBLE.

3. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING. FENCING SHALL NOT BE MOVED OR REMOVED UNLESS APPROVED BY THE CITY PLANNING OFFICIAL. WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY UNDER THE SUPERVISION OF THE ON-SITE ARBORIST AND WITH PRIOR APPROVAL BY THE CITY PLANNING OFFICIAL.

4. FENCING SIGNAGE AS DETAILED ABOVE MUST BE POSTED EVERY FIFTEEN (15) FEET ALONG THE FENCE.

CITY OF KIRKLAND WASHINGTON

TREE PROTECTION FENCING DETAIL

TREE PROTECTION AREA

Entrance Prohibited

To report violations contact

City Code Enforcement

At (425) 587-3225

ATTACHMENT 11
ZON08-00016

MAINTENANCE AND RETENTION AGREEMENT FOR TREES AND REQUIRED LANDSCAPING

Project Name:

Address:

Parcel No:

This agreement is entered into between each undersigned owner of the real property and the City of Kirkland, in consideration of approval by the City of a permit under City of Kirkland File/Permit No. for the hereinafter described real property in Kirkland, King County, Washington.

Each undersigned owner jointly and severally hereby agrees to maintain and retain the trees and other vegetation required by the City to be planted or retained on the real property described below, in accordance with the final approved tree plan (on file in the Kirkland Department of Planning and Community Development) and pursuant to Chapter 95 of the Kirkland Zoning Code ("KZC"), for a period of five years after initial occupancy of the site, which is until Extend line or enter date (expiration date). This agreement shall remain in effect for an additional two years after the expiration date to cover any vegetation which is required by the City to be replaced. Thereafter, maintenance will continue pursuant to KZC requirements.

Each of the undersigned agree to defend, pay, and save harmless the City of Kirkland, its officers, agents, and employees from any and all claims of every nature whatsoever, real or imaginary, which may be made against the City, its officers, agents, or employees for any damage to property or injury to any person arising out of the maintenance of said trees and other said vegetation on said owner's property or out of the actions of the undersigned in carrying out the responsibilities under this agreement, excepting therefrom only such claims as may arise solely out of the negligence of the City of Kirkland, its officers, agents, or employees.

This Agreement shall be binding upon the heirs, successors and assigns of each of the undersigned and shall run with the land. This Agreement shall, at the expense of the undersigned, be recorded by the City of Kirkland with the King County Department of Elections and Records.

Failure to maintain and retain said trees and other said vegetation in accordance with this agreement may subject the undersigned to civil penalties as authorized by Chapter 95 of the KZC.

The real property owned by the undersigned and the subject property of this Agreement is situated in Kirkland, King County, Washington and described as follows:

DATED at Kirkland, Washington, this _____ day of _____, _____

OWNER

(Sign in blue ink)

(*Individuals Only*)

OWNER(S) OF REAL PROPERTY (INCLUDING SPOUSE)

_____

_____

_____

(*Individuals Only*)

STATE OF WASHINGTON)
) SS.
County of King)

On this _____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and _____ to me known to be the individual(s) described herein and who executed the Five-Year Maintenance and Retention Agreement Private Trees and acknowledged that _____ signed the same as _____ free and voluntary act and deed, for the uses and purposes therein mentioned.

WITNESS my hand and official seal hereto affixed the day and year first above written.

_____
Notary's Signature

_____
Print Notary's Name
Notary Public in and for the State of Washington, Residing at: _____
My commission expires: _____

OWNER

(*Partnerships Only*)

OWNER(S) OF REAL PROPERTY

_____
(Name of Partnership or Joint Venture)

_____
By General Partner

_____
By General Partner

_____
By General Partner

(*Partnerships Only*)

STATE OF WASHINGTON)
) SS.
County of King)

On this _____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and _____ to me known to be the individual(s) described herein and who executed the Five-Year Maintenance and Retention Agreement Private Trees and acknowledged that _____ signed the same as _____ free and voluntary act and deed, for the uses and purposes therein mentioned.

WITNESS my hand and official seal hereto affixed the day and year first above written.

_____
Notary's Signature

_____
Print Notary's Name
Notary Public in and for the State of Washington, Residing at: _____
My commission expires: _____

OWNER

(Corporations Only)

OWNER(S) OF REAL PROPERTY

_____
(Name of Corporation)

_____
By President

_____
By Secretary

(*Corporations Only*)

STATE OF WASHINGTON)
) SS.
County of King)

On this _____ day of _____, _____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared_____
_____
__ and
_____
to me known to be the individual(s) described herein and who executed the Five-Year Maintenance and Retention Agreement Private Trees and acknowledged that _____ signed the same as _____ free and voluntary act and deed, for the uses and purposes therein mentioned.

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_____
Notary's Signature

_____
Print Notary's Name
Notary Public in and for the State of Washington, Residing at: _____
My commission expires: _____

Jon Regala

From: Mike [miken@kirklandbuildersgroup.com]
Sent: Thursday, May 28, 2009 5:29 PM
To: Jon Regala
Cc: dhoffman@mbaks.com
Subject: RE: Tree Regulation Update - Notice of Study Session with Planning Commission

Follow Up Flag: Follow up
Flag Status: Flagged

Thanks, Jon, I will look forward to the memo. In the mean time do you have any information as to the amount of property damage that is incurred each year to trees? Especially, fir trees? People killed or injured from trees falling on their homes? How about the cost per applicant and city staff time for each tree saved under current ordinace? What was the cost of storm damage from the "Hanaka" 2007 wind storm to the state of Washington? How much of that damage was from trees?

Just a few items that would be important to inform the Planning Commission with…..

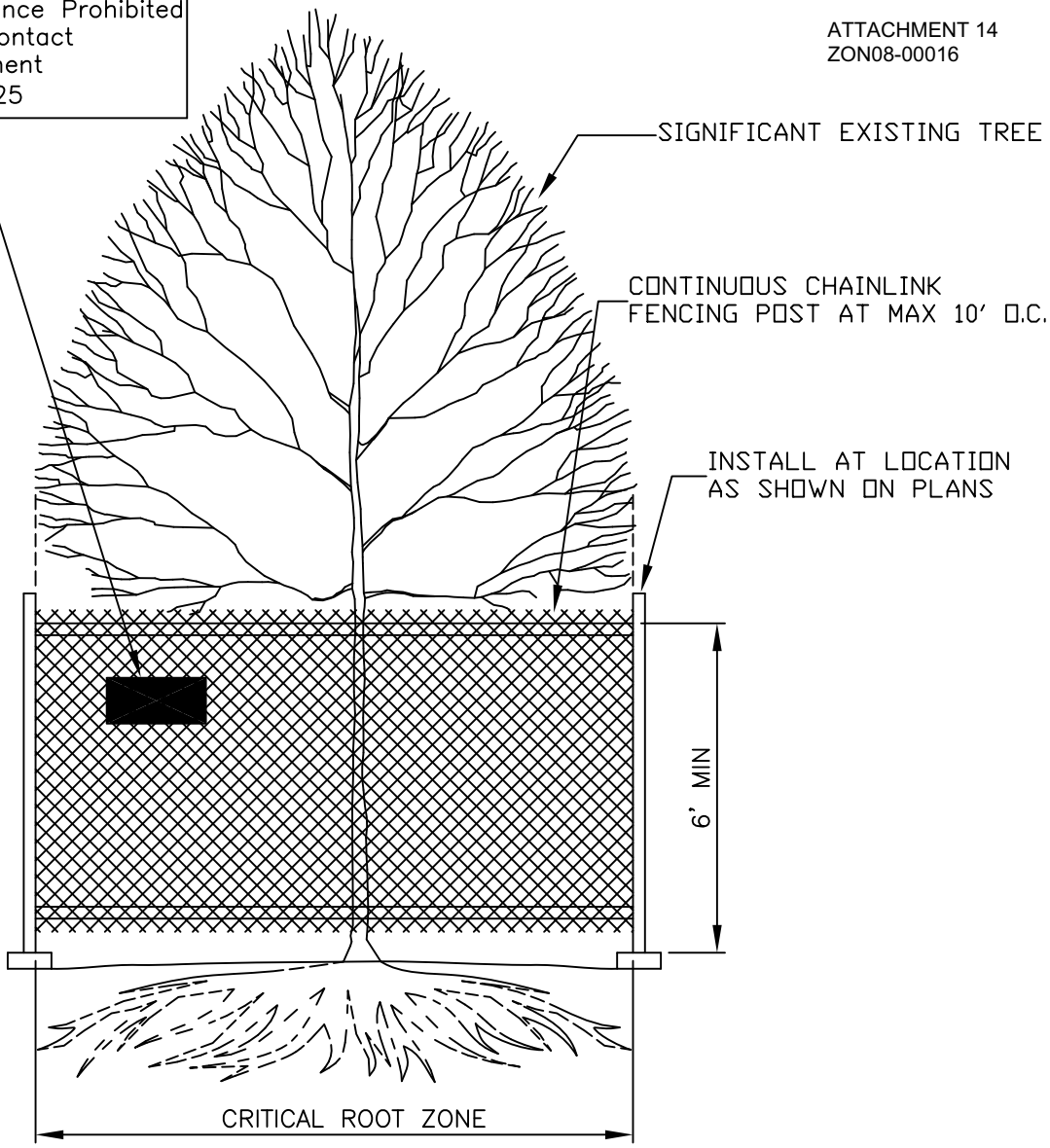
Mike Nykreim
101 10th avenue
Kirkland, WA. 98033
cell: 425-466-2611
Office: 425.827.2234
fax: 425.828.8951
www.KirklandBuildersGroup.com

FENCING SIGN DETAIL

Tree Protection Area, Entrance Prohibited
To report violations contact
City Code Enforcement
at (425) 587-3225

LAST REVISED:01/30/09

ATTACHMENT 14
ZON08-00016



NOTES

1. MINIMUM SIX (6) FOOT HIGH TEMPORARY CHAINLINK FENCE SHALL BE PLACED AT THE CRITICAL ROOT ZONE OR DESIGNATED LIMIT OF DISTURBANCE OF THE TREE TO BE SAVED. FENCE SHALL COMPLETELY ENCIRCLE TREE(S). INSTALL FENCE POSTS USING PIER BLOCK ONLY. AVOID POST OR STAKES INTO MAJOR ROOTS. MODIFICATIONS TO FENCING MATERIAL AND LOCATION MUST BE APPROVED BY PLANNING OFFICIAL.

2. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER ONE (1) INCH DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING, AND COVERED WITH SOIL AS SOON AS POSSIBLE.

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4. FENCING SIGNAGE AS DETAILED ABOVE MUST BE POSTED EVERY FIFTEEN (15) FEET ALONG THE FENCE. SIGN TO BE MINIMUM 11"X17", AND MADE OF WEATHERPROOF MATERIAL.

CITY OF KIRKLAND	
PLAN NO. CK-R.49	
CITY OF KIRKLAND WASHINGTON	TREE PROTECTION