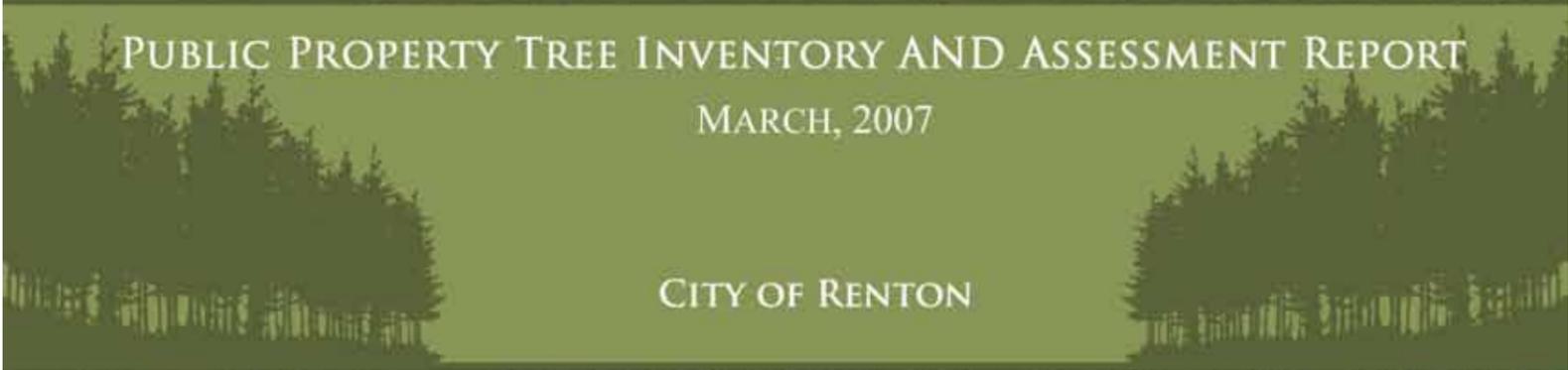




PUBLIC PROPERTY TREE INVENTORY AND ASSESSMENT REPORT
MARCH, 2007

CITY OF RENTON



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Public Property Tree Inventory and Assessment Report

Final Report – March 2007

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Public Property Tree Inventory and Assessment Report
March 2007

Executive Summary

The City of Renton has a diverse urban forest that includes trees growing along street rights-of-way, in parks and natural areas, in private yards, on commercial and industrial properties, and on public and private woodlands and wetlands. As a whole, these trees contribute to the quality of life in Renton and create a favorable climate for residents to live, work and play.

“The tree inventory is a proactive management tool. It is the cornerstone of a long-term urban forestry maintenance and management program. Tree inventories are fundamental to the development of comprehensive, sustainable, and appropriate arboricultural and management practices.”¹ To get an idea of the quantity and diversity of trees in the urban forest, and to begin planning for their care, the City commissioned a public property inventory of street, park and natural area trees in 2003. This report provides a summary of the inventory with detailed information found in the appendix.

A tree inventory is important for many reasons including:

- Determining the quantity and composition of trees;
- Understanding the quality, the health and condition of trees;

¹ The Tree Inventory as a Proactive Management Tool, M. Duntemann & S. Gasperini, City Trees, March/April 2007, Volume 43, No. 2, page 6.

- Assessing the real estate value of trees;
- Calculating the environmental benefits of trees;
- Finding the location of trees;
- Learning about the maintenance needs of trees;
- Establishing risk management goals for trees;
- Informing residents of their tree resources;
- Developing a management plan to maintain trees;
- Discovering new tree planting opportunities and;
- Beginning point for a comprehensive urban forestry program.

A tree inventory is a dynamic process because all trees grow, becoming larger with time. In addition, the inventory changes as new trees are planted, others are pruned and some removed. Annexations can affect an inventory when new areas are added, increasing trees in the community. Since 2003, this inventory was updated to reflect the additions of the Panther Creek Wetlands and Tonkin Park – areas not included in the original inventory.

Only trees found on street rights-of-way and City-owned properties were considered in the inventory. Trees found on private lands were not inventoried. The general categories of trees represented are street trees, park trees and natural area trees. Information about street and park trees was gathered using global positioning satellite (GPS) equipment. This equipment pinpoints a tree on land using coordinates triangulated and transmitted by satellites and is accurate within a few millimeters. The “tree points” were plotted onto aerial photographs called orthophotographs used as a scalable base map. Each tree on the inventory base map is represented by a green tree symbol. The LandInfo Parcel Map’s program within the City’s intranet system, known as RentonNet, provides a visual location of the tree and inventory information that can be viewed on a computer.

Natural area trees were inventoried differently than street and park trees without using GPS equipment. Instead one-tenth acre sample plots were established, tree information gathered and the data extrapolated to provide a total tree estimate for the wooded portion of each area. Tree species and number of trees were tallied for the natural area inventory.

Street and park tree information collected during the inventory included tree species, diameter, condition, maintenance needs, tree problems and more. Appraisal data was gathered to apply a monetary value to trees. Street tree data was collected by six management units presented in the document, “Parks, Recreation and Open Space Implementation Plan.”

This report is divided into four sections:

- The Introduction (Page 6)

- Street Tree Inventory (Page 10)
- Park Tree Inventory (Page 23)
- Natural Area Tree Inventory (Page 28) and;
- The Appendix (Page 34).

The Street Tree Inventory section defines street trees as those within the public right-of-way. These are trees growing either in sidewalk cutouts, in planting strips between sidewalk and curb, in boulevards or in other landscaped islands. Renton has 4,220 street trees within 205 miles of street rights-of-way. The Community Services Department - Parks Division maintains approximately 1,000 of these street trees and the Planning/Building/Public Works Department has responsibility for the remainder.

A reason for collecting inventory information is to determine the diversity of species being planted, with greater diversity being the goal. Reliance on too many of one species or genus has proven to be costly in the past when an insect or disease epidemic affects an entire city's tree population consisting of one species or genus of tree. In Renton, 35% of the street tree population are maple trees. Researchers recommend that only 10% of the total street tree population be comprised of a particular genus or species to avoid problems such as those experienced with American elms caused by Dutch Elm Disease in the later half of the 20th Century and the recent outbreak of emerald ash borer on ash trees in the Lake States.²

The inventory indicates Renton has a relatively young street tree population with 82% of the trees less than 25 years old. Sixty percent (60%) are in fair to excellent condition. Renton's street tree population has a value of approximately \$6.6 million. Improving the existing street tree population through active maintenance such as planting, pruning, removing tree-staking wire, mulching and other practices can increase condition, health and value of trees. Identifying unsafe trees in the inventory and removing them before they cause problems is important - 215 trees were identified for potential removal. Planting opportunities abound – the inventory discovered 1,740 vacant sites along streets within planting strips between sidewalks and curbs.

The Park Tree Inventory section identifies 2,918 trees that were planted and another 17,082 trees that are remnant forest trees found in small groves within parks. In developed areas of established parks, maples (38%) are more prevalent than other species followed by pines (12%). Park trees tended to be older, larger, in better condition and with fewer problems than street trees. Because of their larger average size and better condition, park trees present a greater value per tree than street trees. Total value of the planted landscape trees found in parks is \$9.7 million.

² R.W. Miller. 1997. Urban Forestry: Planning and Managing Urban Greenspaces. Prentice Hall

105,367 trees are included in The Natural Area Tree Inventory section. Natural areas comprise 769 acres; the areas inventoried comprised 401 acres of fully wooded portions or 52% of total natural area acres. The remaining acreage had few if any trees - comprised of wetlands, fields and other open space lacking groupings of trees. Natural areas are comprised of:

- Bigleaf maple - 31%
- Cottonwood - 20%
- Alder - 18%
- Hemlock 9%
- Douglas fir 9%
- Western redcedar - 7%
- Others – 6%

The number of natural area trees per acre is considerably lower than is typical for many Washington forests, a result of having been logged in the past but not replanted. Inferior species such as cottonwood and invasive plants like Himalayan blackberry have dominated and have prevented more desirable species from becoming established such as, Oregon ash, Garry Oak, Douglas fir, Western red cedar and Western hemlock. However, the land remains valuable for recreation, wildlife habitat, and watershed. The current timber value of trees in natural areas is approximately \$1.2 million.



In summary, 4,220 street trees, 20,000 park trees and 105,367 natural area trees exist. These 129,587 trees present many challenges to those managing this valuable resource. The tree inventory provides information that should prove useful to managers for increasing the value of the City's urban forest resource and managing it more wisely into the future. The inventory is the

“springboard” for an urban forest management plan which would address the maintenance recommendations found in the inventory.

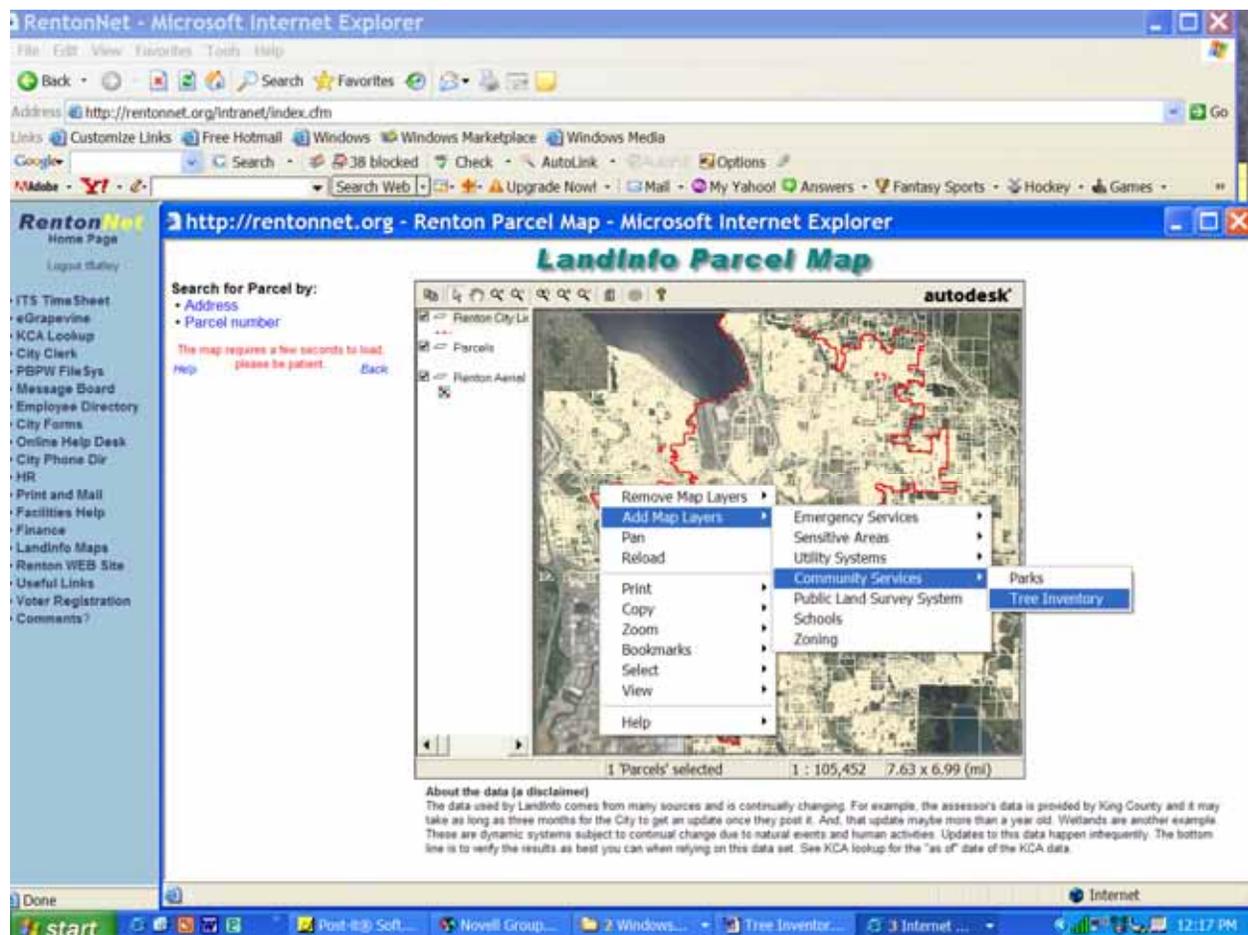
Introduction

In 2003, the City of Renton Parks Division awarded the team of SB & Associates, Inc. and Tree Solutions, Inc. a contract to collect data on the City’s tree canopy and produce a tree inventory summary report. The team collected information using hand-held global positioning satellite (GPS) equipment for street and park trees and utilized a sample plot approach for natural area and open space trees.

Data Collection Methods

The GPS system located individual trees by satellite-signal reference points, and entered this information into a database, downloaded and incorporated it with the City’s Geographic Information System (GIS) and aerial photographs. The GIS system can be viewed by City staff using the Parcel Map application program found on RentonNet. To view the inventory, navigate to www.renton.wa.gov/ and follow the path: Departments – Planning, Building and Public Works – Utility Systems – Standard Maps (a plug-in will be needed at the prompt). A “Tree Inventory” layer is selected (right-click to view layers) from a pop-up menu to view the trees (Figure 1).

Figure 1. LandInfo Parcel Map Tree Inventory Layer





Trees in street rights-of-way were individually inventoried. Trees in parks were inventoried individually unless they were remnant woodland, in such case, one tree from the remnant was pinpointed with GPS equipment to be able to identify the remnant.

Trees in natural areas and greenbelts were counted differently than street or park trees. Because of the vast number of natural area trees, establishing 1/10th acre sample plots was more practical. Ten randomly selected plots were taken for each natural area and all trees measured in each plot. An estimate of the total number of trees by species was calculated based upon the sum of the ten plots. Next, the percentage of fully wooded acres was calculated from aerial photographs – this provided a truer depiction of wooded acreage, especially for areas containing open spaces or wetlands with few trees. The adjusted woodland-acreage was then multiplied by the average number of tree species per acre to arrive at the total number of trees in a natural area.

Street and park tree information was entered into an Access database format. The inventory collected information for each tree using the following categories:

- Genus and species
- Management unit
- Stem diameter measured at 54 inches from the ground. This is known as diameter at breast height or DBH
- Condition and location factors
- Tree-related problems - recommended treatments to correct problems and a priority
- Tree appraised value

Scientific Names of Trees and Plants

The nomenclature of trees is governed by botanical convention; Genus, species, common name. The tree inventory database can be sorted in any of these ways. The first word of the scientific name denotes the genus and the second word denotes the species, a specific tree type within the larger genus. For example, there are many species of maple that are within the genus Acer. Acer saccharum's common name is sugar maple, a species within the maple genus.

Gathering this data is useful for determining the following:

- Species diversity and quantities of trees
- Trends by area of the city or by Management Unit
- Age structure of the urban forest as a function of size
- Health and safety of trees
- Value of individuals and the entire urban forest resource
- Maintenance needs and associated impacts from trees
- Prioritizing work and treatments
- Organization of maintenance work by management units
- Assessing areas devoid of trees for planting opportunities
- Budgeting for maintenance activities, such as pruning, removal and planting
- Developing a management plan to maintain trees

Tree Information Collected

Two-person crews gathered information on each tree with a hand-held GPS unit. The units were programmed with a series of pull-down menu selections across a series of variables. Categories of data collection included:

Auto ID – Unique identification number for each tree or remnant

User – Person recording data

Management Unit - North, Central, West, South, Southwest, East – units derived from the “Parks, Recreation and Open Space Implementation Plan”

Scientific Name – Genus and species, expressed in Latin

DBH – Stem diameter inches measured 54” above level ground

Site Description - cutout, island, planting strip, tree grate, park

Problem 1 - Structure, damage, wires, decay, disease/insects, topped, hardscape, lift, root problems, deadwood, staking, drainage, clearance.

Problem 2 - Same as Problem 1

Treatment - Prune, monitor, remove, unstake

Maintenance Priority - Low, medium, high

Condition – Percentage factor based on 100 percent (%) as excellent, 0% as dead

Location: Percentage factor averaged from the following subsets of information collected:

- Site: Percentage based on 100% appropriateness of appearance of surrounding landscape
- Contribution: Percentage based on 100% appropriateness the tree has to the landscape
- Placement: Percentage based on 100 % as determined by whether a tree is or will become a nuisance and the number of other trees spatially related to the appraised tree

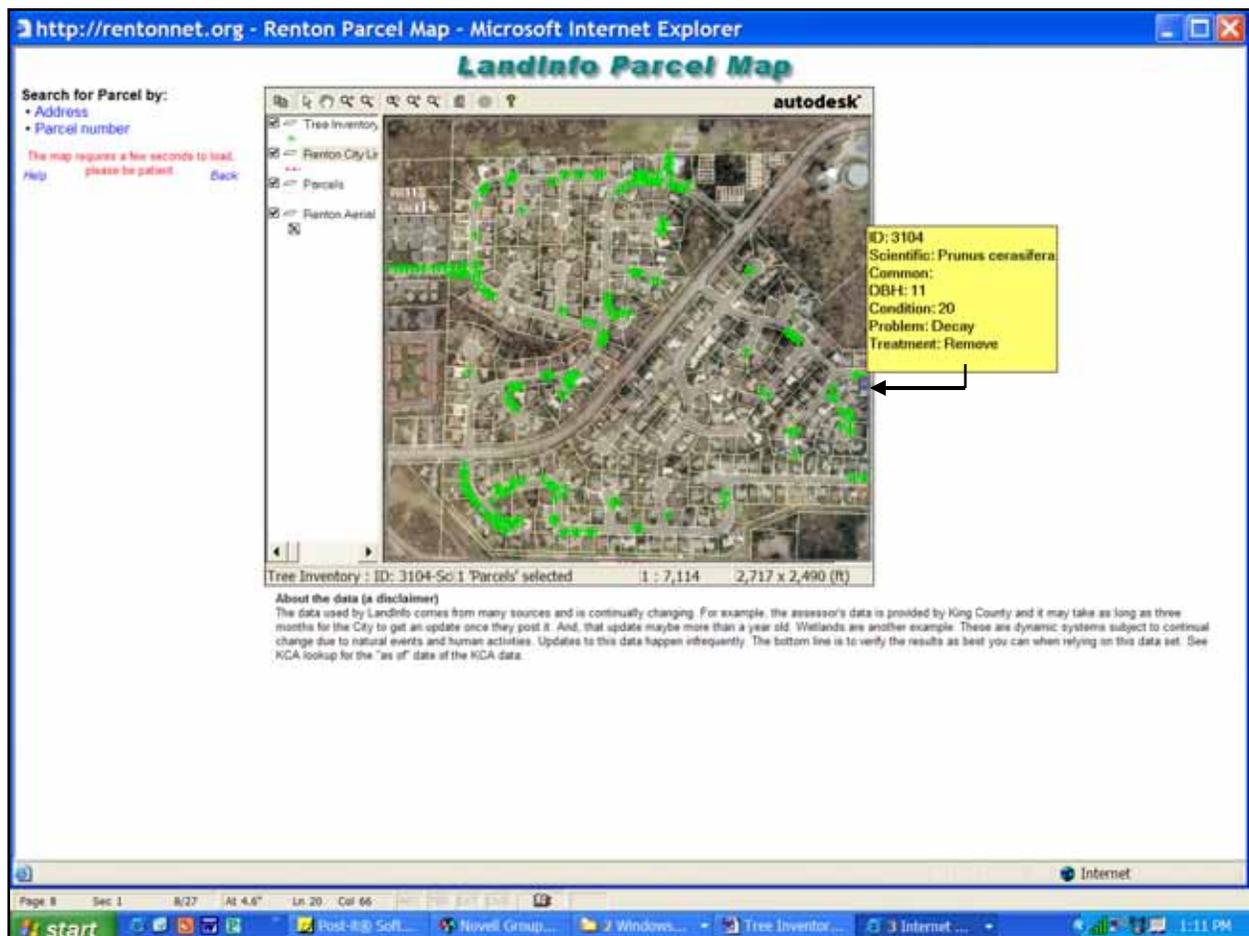
Viewing the Street Tree and Park Tree Inventory

The inventory is accessed from the Parcel Map application program on RentonNet via a pull-down list showing the tree inventory as one of the layers that can be added to the base map (see Figure 1, Page 6). When selecting the inventory, the map rebuilds and displays green tree-like symbols representing single trees in the position they were located by field crews using GPS equipment. Scrolling over an individual parcel also displays the address of the parcel the tree is growing on.

For example, Figure 2 (Page 9) displays data for one tree, a *Prunus cerasifera* (purple leaf plum). Trees are shown as green symbols on the map. The tree information is a pop-up list displayed in a yellow box. The selection displays the size as 11 inches in diameter (DBH) and a condition rating of 20 (%) – 100 (%) would indicate an excellent tree condition. Such a low condition rating indicates something wrong with the tree. This assumption is verified from the “Problem” field of “Decay” and the “Treatment” recommendation of “Remove.”

Running the computer cursor over the parcel where the tree is located displays the address and parcel number. Ownership can also be displayed (not shown). The tree in this example is in the Rolling Hills neighborhood of Renton.

Figure 2. Parcel Viewer Tree Inventory Layer



Street Tree Inventory

An inventoried street tree is identified as having one or more of the following site characteristics:

- Within the 205 miles of public street right-of-way.
- In a sidewalk cut-out
- In planting strips between the curb and sidewalk
- Between the sidewalk and the right-of-way property line
- In street boulevard areas between traffic lanes
- Growing in street landscaped islands.

The street tree inventory did not include trees found on private property. Data collection included delineation of right-of-way boundaries using information provided by the Planning Building and Public Works Department and the Economic Development, Neighborhoods, and Strategic Planning Department. In the field, right-of-way lines were not always apparent; their locations were estimated using features as street light and fire hydrant placement.

The inventory identified 4,220 street trees.

Table 1 provides a summary of trees by genus, number and percent of total street trees. The category “Miscellaneous” includes genera represented by only a few trees each (see the Appendix for quantities of street trees listed by genus and species).

Table 1. Number of Street Trees by Genus

| Genus | Number | % of Total | Genus | Number | % of Total |
|----------------|---------------|-------------------|---------------|---------------|-------------------|
| Acer | 1469 | 34.8 | Corylus | 20 | .5 |
| Prunus | 1023 | 24.2 | Cersis | 18 | .4 |
| Platanus | 282 | 6 | Abies | 12 | .3 |
| Liquidambar | 238 | 5 | Picea | 12 | .3 |
| Fraxinus | 208 | 5 | Cornus | 11 | .3 |
| Pseudotsuga | 134 | 3 | Chamaecyparis | 8 | .2 |
| Thuja | 120 | 3 | Arbutus | 7 | .2 |
| Quercus | 115 | 3 | Laburnums | 6 | .1 |
| Pinus | 85 | 2 | Liriodendron | 6 | .1 |
| Pyrus | 81 | 2 | Robinia | 5 | .1 |
| Malus | 57 | 1 | Ilex | 4 | .09 |
| Betula | 54 | 1 | Sorbus | 4 | .09 |
| Tilia | 46 | 1 | Ulmus | 4 | .09 |
| Populus | 41 | 1 | Rhus | 4 | .09 |
| Crataegus | 33 | .7 | Juniperus | 4 | .09 |
| Gleditsia | 29 | .6 | Ginkgo | 4 | .09 |
| Miscellaneous* | 25 | .9 | Styrax | 4 | .09 |
| Cedrus | 25 | .6 | | | |
| Carpinus | 22 | .5 | Total | 4,220 | 100% |

*Miscellaneous category contains 12 genera with only one or two individual species.

Street Tree Species

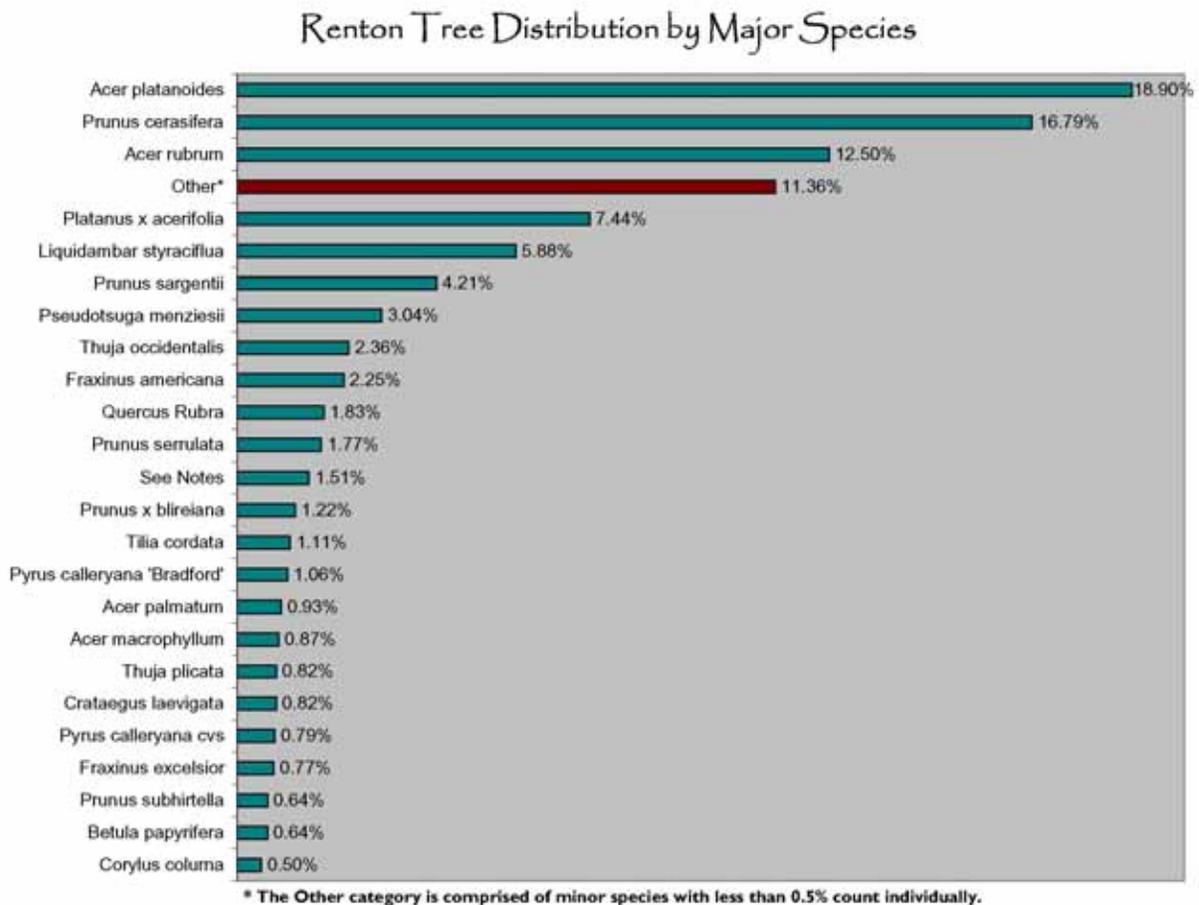
The inventory collected information on 47 genera and 107 different tree species along Renton streets (See Appendix, Table 1, pp. 35 – 37, for a complete listing of species). The most prevalent genus among street trees was Acer (Maple) with 1,469 trees.

The most prevalent species of maple was Norway maple (820 trees). Other common trees encountered included:

- Prunus cerasifera, purple leaf plum – 676 trees
- Acer rubrum, red maple - 606 trees
- Thuja plicata, Western red cedar - 350 trees
- Platanus acerifolia, London plane tree - 282 trees
- Liquidambar styraciflua, Sweetgum - 238 trees.

Figure 3 displays the street tree distribution by major species.

Figure 3. Street Tree Species Distribution



Street Tree Management Areas

“The Parks, Recreation and Open Space Implementation Plan” utilizes Management Units to describe planning areas within the City of Renton (Figure 4). The same designated areas and nomenclature were used to organize tree data.

Figure 4. Parks, Recreation and Open Space Implementation Plan Management Units

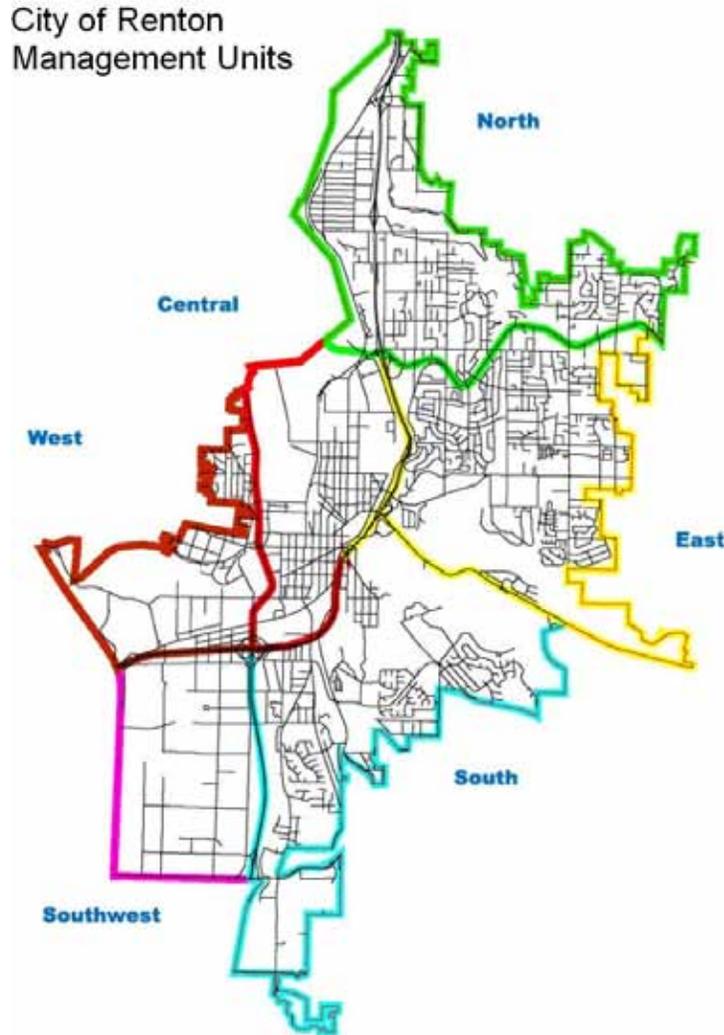


Table 2 displays the number of street trees represented in each Management Unit.

Table 2. Number of Street Trees by Management Unit

| West | Southwest | South | North | East | Central |
|-------------|------------------|--------------|--------------|-------------|----------------|
| 441 | 537 | 716 | 1021 | 562 | 943 |

Street Tree Inventory by Diameter/Age Group

Trees were measured by diameter at breast height or DBH, a measurement taken 54” above ground level. For the purposes of this report, size is broadly related to age. Generally, a small diameter tree tends to be young and a large diameter tree tends to be mature or overmature. Using this age/diameter relationship, the inventory information in Table 3 provides an estimated diameter-age class distribution of Renton’s street trees.

Table 3. DBH-Age Class Distribution of Street Trees³

| <u>1 – 3”</u> 1-6 yrs | % of Total | <u>4 – 12”</u> 7-24 yrs | % of Total | <u>13 – 24”</u> 25-50 yrs | % of Total | <u>25 – 36”</u> 51-75 yrs | % of Total | <u>37”+</u> 76+ yrs | % of Total |
|--------------------------|---------------|----------------------------|---------------|------------------------------|---------------|------------------------------|---------------|------------------------|---------------|
| 935 | 22% | 2544 | 60% | 623 | 15% | 89 | 2% | 29 | 1% |

Table 3 reveals 82 percent of Renton’s street trees were planted since 1980. This is consistent with the development period of the City, which experienced significant growth and – as importantly – redevelopment in a period when street trees became valued as a community asset. The predominately younger trees are indicative of a healthy population than comparable older tree populations. While young trees tend to be more vigorous, thus more healthy, they require regular pruning early to avoid potential problems such as low hanging branches and included bark (defective branch or stem attachments) and to improve future values when they become larger. Table 4 on Page 14 verifies this health assessment by comparing condition values.

Tree Condition

Tree condition and health are synonymous. The inventory used a percentage rating for overall health. A tree rated 100% is one exhibiting excellent condition and health. Conversely, a tree rated at 20% is in very poor condition and health. Condition takes into account several factors including structural integrity, plant health and vigor and mechanical damage.

Structural integrity is the potential for a tree to fail. Considerations in determining structural integrity include the extent of root or trunk decay, hollows, branch attachment, stability and lean.



³ Size and age vary widely among trees and depends upon variables such as genetics, growing space and access to light, moisture and nutrients. A small diameter tree can be many years old and a large tree can be younger than its size indicates. However, most nursery trees planted at a 2-inch diameter size are about six years old. Investigations of larger trees by City staff have revealed a relationship similarly as presented in Table 3.

Plant health and vigor are evaluated in assessment of condition. Annual shoot growth, leaf color, the presence of decay, dieback of the crown, spacing to adjacent trees and other irregularities affect condition rating.

Mechanical damage occurs when vehicles or mowing equipment strike trees. Wounding of branches or the trunk spreads decay into the tree. Condition rating becomes lower based upon the size of the wound, the location of the wound, overall health, and a tree’s ability to recover from a wound.

Problems with the built environment such as insufficient root area, soil compaction, damage from construction and other human-induced causes influence tree condition.

Table 4 displays the condition rating percentage ranges. The following is a general description of each:

- 90 – 100% - Good to Excellent
- 70 – 80% - Fair to Good
- 60% - Poor to Fair
- 40 – 50% - Very Poor to Poor
- 0 – 30% - Dead to Very Poor

Table 4. Number of Street Trees by Condition Rating Percentage

| 90 - 100% | % of Total | 70 - 80% | % of Total | 60% | % of Total | 40 - 50% | % of Total | 0 - 30% | % of Total |
|------------------|-------------------|-----------------|-------------------|------------|-------------------|-----------------|-------------------|----------------|-------------------|
| 16 | .4% | 2482 | 59% | 1206 | 28.6% | 402 | 9% | 114 | 3% |

The above descriptions are relative in that the assessment of tree condition can vary from one evaluator to another so condition ratings are shown in ranges. It is noteworthy that the number of trees with condition rating of 60% are called-out separately and not displayed in a range for emphasis. Many trees in this category have potential for improving condition rating with some level of maintenance. Conversely, if 60% trees are not maintained, their condition rating and health can decrease to the point of requiring removal. Regular maintenance of street trees is very important for improving ratings for most trees in all categories, especially for those in the 60% condition rating.

From the table, more than 59% of street trees are in fair to excellent condition. This is reflective of the large number of relatively young trees shown in Table 3, on Page 13. These groups of trees have the most potential for increasing condition, therefore their appraised values, given a higher level of maintenance applied than currently practiced. For example, pruning dead, diseased and damaged branches would increase the Condition Rating Factor and, therefore, the dollar value of the trees.

Trees in lower condition rating categories generally will be more expensive to maintain, are less likely to improve with maintenance, with some having negative values and containing trees that

may require removal. Please read the section on tree value below for more information on Condition Rating Factor and its implications in tree appraisal.

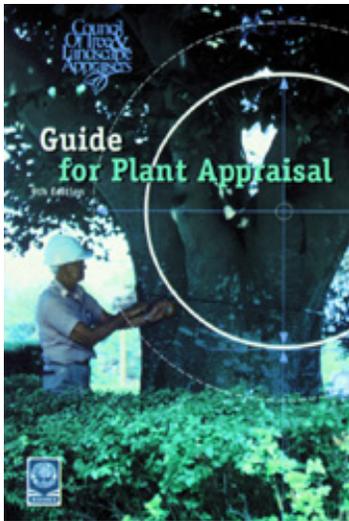
Tree Value

Tree valuation is derived from the concept that trees contribute to the quality of life in a city, and they assist in reducing infrastructure costs, improve air quality and reduce runoff: in other words, trees have value beyond pure aesthetics. Tree valuations are commonly done for inventories, real estate transactions, condemnation actions and insurance purposes. Municipalities most often appraise trees to quantify the contribution they make to the quality of life and to determine management needs.⁴

Values placed upon trees are used for many purposes; when assessing damages to properties following catastrophic events, for simple property assessment for valuation or sale, and to justify budget requests for tree maintenance, removal and new plantings. Recently trees and tree planting have shown value in mitigating the effects of greenhouse gases and other causes of global warming. In an equation of sustainability, trees have an important role in providing goods, benefits and services locally, regionally and globally.

Specific data from the general database was utilized to determine the value for each tree consistent with the “Guide for Plant Appraisal 9th Edition”, published by the Council of Tree and Landscape Appraisers, 2000. This data included:

- Diameter of the tree
- Tree species factor
- Condition factor
- Location factor
- Replacement Tree Costs



The Council of Tree and Landscape Appraisers have established commonly recognized guidelines for appraising trees. The CTLA has representatives from the following organizations:

- American Society of Landscape Architects
- American Society of Consulting Arborists
- National Arborist Association
- International Society of Arboriculture
- American Nursery and Landscape Association
- Associated Landscape Contractors of America
- Association of Consulting Foresters of America

⁴ Guide for Plant Appraisal, 9th Edition. ISA. 2000.

Tree Condition Factor

Tree condition is determined by evaluating a tree's structural integrity and health. This assessment includes visual observations of the trunk, branches and foliage. Tree roots were not assessed. A tree with a condition rating of 100% is in better health than one rated at 50%. The condition rating can increase for the same tree with a small amount of maintenance, such as pruning dead or diseased branches.

Tree Location Factor

The location factor is a summary of the:

1. Evaluation of the site or property;
2. Tree's unique functional and aesthetic contributions and;
3. Placement of the individual tree in a specific landscape.⁵

As an example, a tree growing in a wide bark bed, along the street without overhead obstructions (e.g. electric wires, building overhangs, other trees, etc.), and that provides desired shade to the south side of a house, might score a rating of 100%. In contrast, a tree planted in a sidewalk cut-out,



Tree Value Assessment Example

The tree pictured is a 36-inch DBH black walnut. It is given the following ratings:

| | |
|------------------|-----|
| Species Factor | 60% |
| Condition Factor | 80% |
| Location Factor | 70% |

Species Factor: A predetermined rating established by the Pacific Northwest Chapter of the International Society of Arboriculture for black walnut.

Condition Factor: Overall condition of the tree related to its health and structural integrity.

- Positives: Pruned regularly, deadwood removed, little decay above ground
- Negatives: Several large stems originating from the main trunk, new sidewalk construction damage.

Location Factor:

- Positives: Shades home from the west and south, the only tree in front of the house.
- Negatives: Powerline runs through the tree, walnuts from tree causes debris problems for traffic and pedestrians.

This tree has an appraised value of \$18,100.00.

⁵ Guide for Plant Appraisal, 9th Edition. ISA. 2000

surrounded with concrete, with powerlines above, and growing on the north side of a parking lot (providing little shade to the parking lot), might receive a location factor of 50%.

Other Factors

- The diameter of the tree trunk being appraised is part of the calculation for determining value. Diameter at Breast Height or DBH is a common point of measurement. DBH is more accurately described as the diameter of the trunk measured at a point 54 inches from ground level.
- The species factor is determined on a regional basis by chapters of the International Society of Arboriculture (ISA), by universities, extension offices or by other organizations and individuals. The standard that is commonly used in the region usually prevails in court decisions. The Pacific Northwest (PNW) Chapter of ISA maintains the species factor listing for Alaska, Washington and Oregon. Like the other ratings, it is expressed as a percentage from 10% to 100%. Species ratings are periodically reviewed and updated by a panel of tree professionals.
- Tree replacement cost is used in the appraisal formula. It includes the cost of supplying the largest commonly available transplantable nursery tree, transportation to the site, labor to plant the tree, stake the tree, water the tree, warranties and other costs associated with planting the new tree. The replacement cost is used to determine the basic value of the tree, the starting point in the tree appraisal calculation. The result is the basic value expressed in dollars per diameter inch squared.

In the Pacific Northwest, the largest commonly available transplantable nursery tree size is four inches (4”) in diameter. In the Guide for Plant Appraisal, a table is referenced and provides the diameter in square inches for a 4” tree – or 13 in². A tree this size has a replacement cost averaging \$728. Dividing the cost (\$728) by the size (13 in²) yields \$56/in². This value is the beginning point for assigning a value to the appraised tree. The sidebar below provides a calculation example.

| <u>Sample Tree Appraisal Calculation</u> | |
|---|--|
| Tree: 36-inch DBH, Black walnut | |
| Species Rating: 60% | Appraised trunk area: 974 in ² * |
| Condition Rating: 80% | Appraised trunk increase: 961 in ² |
| Location Rating: 70% | Basic tree cost: 961 x \$56 = \$53,816 |
| Replacement tree size: 4 inches or 13 in ² * | Appraised tree value: |
| Replacement tree cost: \$728 | \$53,816 x 0.60 x 0.80 x 0.70 = \$18,082.18 |
| Unit tree cost: \$56/in ² | (Basic Value x Species x Condition x Location) |
| *From a table in the Guide for Plant Appraisal | Appraised Tree Value: \$18,100.00 |

Table 5 displays values for Renton’s street tree population. Compare the “Average Value per Tree” column with the “Condition Class” column. Note that trees with a condition rating of 80% or higher have the highest value per tree demonstrating that applied tree care can have huge implications for improving the value of Renton’s trees by increasing condition rating.

Table 5. Summary of Street Tree Value

| Condition Class | Number of Trees | Total Tree Value* | Average Value per Tree |
|-----------------|-----------------|--------------------|------------------------|
| 0% | 38 | \$0 | \$0 |
| 10% | 14 | \$1,200 | \$86 |
| 20% | 56 | \$600 | \$11 |
| 30% | 6 | \$4,500 | \$750 |
| 40% | 392 | \$237,000 | \$605 |
| 50% | 10 | \$7,700 | \$770 |
| 60% | 1,206 | \$1,384,000 | \$1,148 |
| 70% | 55 | \$35,700 | \$649 |
| 80% | 2,427 | \$4,832,000 | \$1,991 |
| 90% | 3 | \$14,000 | \$4,667 |
| 100% | 13 | \$118,000 | \$9,077 |
| Total | 4,220 | \$6,634,700 | \$1,572 |

*Values have been rounded.

Tree Problems

Trees growing along streets encounter many problems during their lives. The following list of problems were recorded during the inventory:

- Buried – tree stem covered with soil
- Clearance – the street, sidewalk, traffic sign or other structure blocked by branches
- Damage – a wound on the stem or branches
- Deadwood – dead branches in the tree
- Decay – advanced stage of disease infection
- Disease – a complex of organisms threatening the health of trees
- Drainage – poor soil conditions that hold water near the tree
- Hardscape & Lift – sidewalk, curb and other structures displaced by tree parts
- Root Problems – damage to roots
- Staked – post and wire used for tree support during planting not removed
- Structure – poor growth of tree stem and/or branches
- Topped – a destructive tree pruning practice
- Wires – overhead utility wires above a tree



Table 6. Street Tree Problems

| Problem | No. of Trees |
|------------------|---------------------|
| Buried | 1 |
| Clearance | 7 |
| Damage | 383 |
| Deadwood | 98 |
| Decay | 64 |
| Disease | 100 |
| Drainage | 11 |
| Hardscape & Lift | 438 |
| Root Problems | 100 |
| Staked | 120 |
| Structure | 251 |
| Topped | 459 |
| Wires | 167 |
| Totals | 2,199 |

Over 50% of the street tree population is experiencing some kind of problem that requires treatment in order for them to grow to a healthier condition. For some trees, the problems cannot be corrected and these must be removed and replaced.

Maintenance Needs

Street trees require periodic maintenance to eliminate problems following planting and to prevent future problems associated with growth. For example, pruning is the most common tree maintenance procedure. Although forest trees grow well with only nature’s pruning, landscape trees require a high level of care to maintain their safety and aesthetics. Trees that receive the appropriate pruning measures while they are young will require little corrective pruning when they are mature. In Table 7, the kinds of maintenance tasks are displayed as encountered by the data collectors.

Structural Pruning

The pictures below are of the same tree, before (left) and after pruning (right). Structural pruning of this young tree eliminated:

- closely spaced branches that had weak attachments
- branches rubbing against others that created wounds
- competing branches with the central leader
- dead, diseased and broken branches
- the need for removal of large branches when the tree is larger, keeping wounds small and areas of decay small



Cedar River Park

Table 7. Tree Maintenance Needs by Management Unit

| Mgt. Unit | Pruning | Removal | Monitor | Unstake | Repave Walks | Disease Treatment | Mulch | Total |
|--------------|------------|------------|-------------|-----------|--------------|-------------------|------------|-------------|
| South | 154 | 119 | 360 | 13 | 1 | 3 | 15 | 665 |
| Southwest | 16 | 22 | 109 | 1 | 0 | 0 | 0 | 148 |
| Central | 68 | 24 | 266 | 28 | 8 | 1 | 9 | 404 |
| North | 114 | 27 | 440 | 13 | 2 | 1 | 112 | 709 |
| West | 19 | 9 | 149 | 29 | 8 | 0 | 12 | 226 |
| East | 41 | 14 | 321 | 5 | 12 | 1 | 32 | 426 |
| Total | 412 | 215 | 1645 | 89 | 31 | 6 | 180 | 2578 |

- Tree pruning removes branches to provide better vehicle and pedestrian access along streets and sidewalks, eliminates dead, dying and diseased branches and improves the structure of the tree.
- Sometimes it is necessary to remove trees altogether because they pose a risk to public safety, health or welfare. High-risk and trees that are dead, diseased or in very poor condition, should be removed. In July, 2007, only 3 of 215 trees are medium-risk but are less than 15 feet tall. All others are low-risk or have already been removed.
- Monitoring indicates there is a potential problem developing in or near the tree and requires periodic inspection to assess present condition and possible treatments. For example, a tree that has some decay in its branches or trunk should be inspected annually as decay advances. Pruning branches or whole-tree removal might occur later to prevent the spread of decay or as the tree's condition deteriorates.
- Tree stakes are often used to stabilize newly planted trees. Stakes should be removed after one growing season following planting. If left longer, materials used to fasten the tree to the stake, such as wire passed through hose, may begin to damage the tree (pictured at right).
- Sidewalks that have buckled or broken by tree roots may need repair or paving.
- The health of some diseased trees might be improved by early treatment methods. This does not appear to be a large problem in Renton.



- Because street locations tend to be relatively hot and dry, mulch is an important treatment. The best tree mulches are aged wood chips. Providing mulch in a wide area over the roots conserves soil moisture and improves the growing conditions for a tree.

New Planting Site Inventory

The inventory identified potential tree planting sites. A tree planting site is one that did not contain a tree and met the following criteria at the time the inventory was taken in 2003:

- A planting strip exists between sidewalk and curb
- Planting strip is 3 feet or wider and 3 feet or longer
- One tree for every 60 feet of frontage, however, each address or parcel receives at least one tree if no conflicts exist with street lights, traffic signs, signals fire hydrants and vision or other utilities.
- 40 feet of separation exists to an existing yard tree
- 40 feet of separation exists to an intersection, stop sign or yield sign
- 30 feet of separation exists to a street light
- 80 feet of separation exists to traffic signals



To collect inventory information on potential planting sites, neighborhoods were surveyed by driving the streets and tallying potential sites using the above criteria. Planting sites were classified by the width between the sidewalk and curb. The downtown business district was not surveyed because it did not meet the criteria for planting strips.

Table 8 provides a summary of the tree planting sites by planting area size. Smaller spaces better accommodate trees that achieve a small mature size while larger areas can accommodate larger maturing trees. The presence or absence of overhead wires also determines the type of tree to plant. Where overhead wires are found, there is a great selection of small maturing trees available.

Table 8. Potential Tree Planting Sites

| Planting Width | No. of Sites | Largest-mature Size to Plant |
|-----------------------|---------------------|-------------------------------------|
| 3' to 4' | 545 | Small |
| 4' to 5' | 436 | Small |
| 5' to 6' | 156 | Medium |
| 6' to 7' | 218 | Medium - Large |
| 7' to 8' | 236 | Large |
| 8' to 9'+ | 152 | Large |
| Totals | 1,743 | - |

Planting Trees Creates Value

Costs

| | |
|--------------------------------|-------------|
| 1,743 trees planted 2003..... | \$488,000 |
| 20-year Maintenance Costs..... | \$872,000 |
| Total Costs..... | \$1,360,000 |

Benefits

20-year old trees: 1,743 trees
Appraised Value (2023): \$4,340,000

Net Value

\$2,980,000 or \$1,710 per tree at 20 years old

Planting street trees improves property values, creates an agreeable atmosphere for shoppers, and mitigates stormwater runoff, among other benefits. Large maturing trees provide greater benefits overall than smaller trees. Planter strip width is an important factor for selecting the right tree for the space – “*Right Tree, Right Place.*” Planting size-appropriate trees reduces impacts to adjacent trees, sidewalks, curbs, streets and other infrastructure.

Other Street Tree Values

Street trees are constantly working to reduce stormwater run-off, intercepting pollutants, creating oxygen and making streets cooler. Recent research around the country has been able to quantify some of the benefits trees provide, mostly by demonstrating the cost-savings provided by trees compared with constructing stormwater retention and detention facilities, savings in health care costs by removing particulates, by reducing greenhouse gases and producing life-sustaining oxygen.

Using numbers from other research results, Renton’s street trees contribute nearly \$300,000 in savings by intercepting and absorbing rain water. These same trees also provide \$42,000 worth of services by removing air pollutants and producing oxygen.

Summary of the Street Tree Inventory

Since 2003, trees have been removed for one reason or another, have fallen victim to storms and have been planted in new locations and replaced where appropriate. Renton has a diversity of street trees. Of the 4,220 trees, 110 different species and 47 genera of trees exist. The purpose of the inventory was to understand the condition and value of the City’s trees as part of the urban fabric. The next important step is to make Renton street trees safer and healthier. In 2003, more than 60% of the trees require some level of maintenance to improve their overall health. Street trees in Renton contribute to property values and quality of life - valued at approximately \$6.6 million. Street trees should be actively managed to increase the value of this important community asset.

Future inventory needs of the urban forest should consider the following:

- Inventory by house address along with GPS
- Apply more detail to inventory for tree value
- Assess tree planting locations in areas where planting strips do not occur
- Inventory of other public grounds such as libraries, fire stations, museums, etc.

Park Tree Inventory

A park tree is one found in a designated City of Renton park; not found growing along a street right-of-way or in a natural area. Park trees inventoried were those planted individually as well as trees found in small clumps within established parks. Planted trees and one representative from a clump were evaluated similarly as street trees but other trees in the clump were only counted and not specifically evaluated. It was assumed the clump was similar to the representative tree evaluated.

Local Park Tree Champions

"Let every tree lover, every forester, every lumberman rally...to fight for the preservation of our biggest tree specimens."

Joseph Stearns, Forester, 1940 American Forests' National Register of Big Trees is the result of this rallying cry. Since 1940, the group has documented the largest known specimens of every native and naturalized tree in the United States. The largest tree of its species in the country is the National Champion.

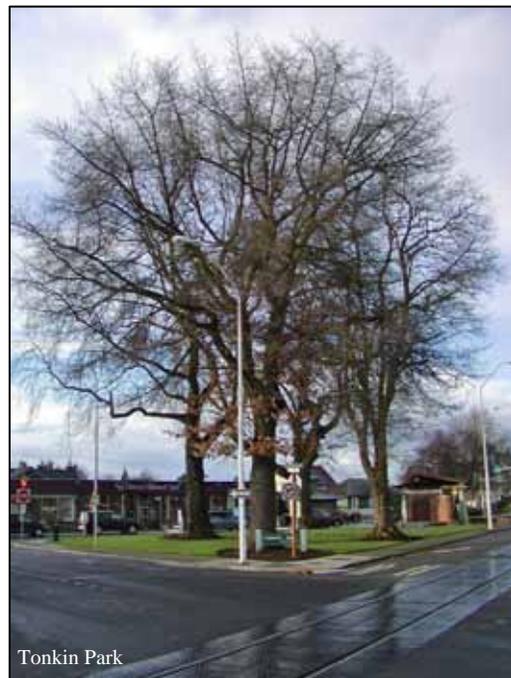
National champion trees capture our imagination for their size and strength, however, there's more to a champion than just its size—they are symbols of all the good work trees do for the quality of the environment and our quality of life. Big trees provide more cooling shade and more places for wildlife to perch and nest. They sequester more carbon dioxide, trap more pollutants, and purify more water.

Some of Renton's local champion trees include:

- 69" Bigleaf Maple – Philip Arnold Park
- 59" Yellow Poplar – Tonkin Park
- 58" Eastern Cottonwood – Earlington Park
- 51" Western Red Cedar – Riverview Park
- 48" Douglas Fir – Kiwanis Park
- 44" London Planetree – Jones Park

The park tree inventory can be accessed through the Parcel Viewer program within RentonNet (see example, Figure 1, Page 6). Trees were located by GPS points and characteristics were noted for each. There are 20,000 park trees identified in the inventory.

Page 25, Table 24, displays the quantity of single park trees by genus and the percent of the total. The numbers represent trees that are planted landscape trees and also includes one tree from groups of trees - remnant woodlands remaining following park development.



Tonkin Park

Table 9. Number of Planted Park Trees by Genus

| Genus | Number | % of Total | Genus | Number | % of Total |
|----------------|--------|------------|----------------|-------------|------------|
| Acer | 1093 | 38 | Cornus | 13 | <1 |
| Pinus | 354 | 12 | Aesculus | 11 | <1 |
| Pseudotsuga | 274 | 9 | Salix | 11 | <1 |
| Thuja | 128 | 4 | Cladrastis | 10 | <1 |
| Quercus | 122 | 4 | Calocedrus | 8 | <1 |
| Platanus | 115 | 4 | Tsuga | 7 | <1 |
| Populus | 99 | 3 | Liquidambar | 6 | <1 |
| Prunus | 92 | 3 | Larix | 5 | <1 |
| Fagus | 83 | 3 | Cedrus | 4 | <1 |
| Liriodendron | 75 | 3 | Tilia | 4 | <1 |
| Gleditsia | 58 | 2 | Ginkgo | 3 | <1 |
| Fraxinus | 47 | 2 | Tiwania | 3 | <1 |
| Crataegus | 45 | 2 | Castanea | 2 | <1 |
| Rhus | 32 | 1 | Cercidiphyllum | 2 | <1 |
| Pyrus | 29 | 1 | Robinia | 2 | <1 |
| Picea | 26 | 1 | Corylus | 1 | <1 |
| Alnus | 25 | 1 | Malus | 1 | <1 |
| Sequoiadendron | 24 | 1 | Abies | 1 | <1 |
| Zelkova | 24 | 1 | Sequoia | 1 | <1 |
| Betula | 22 | 1 | Sorbus | 1 | <1 |
| Chamaecyparis | 21 | 1 | Taxus | 1 | <1 |
| Not identified | 17 | 1 | Ulmus | 1 | <1 |
| Magnolia | 15 | 1 | Total | 2918 | |

The above table displays 2,918 individually planted trees found in parks. Remnant woodlands can be found within several parks and these clumps generally measure less than an acre in size. The table does not provide detailed information on small clumps of remnant woodland trees. A variety of species exist in the remnants but maple predominates. While remnant trees were not individually recorded, one representative tree was located in each clump using GPS and a total count of trees made in the clump – a total of 17,598.

Please refer to the Appendix for more detailed listings of species planted in parks.

Analysis of Single-planted Park Trees

Table 10. DBH-Age Class Distribution of Park Trees

| <u>1 – 3”</u> 1-6 yrs. | % of Total | <u>4 – 12”</u> 7-24 yrs. | % of Total | <u>13 – 24”</u> 25-50 yrs. | % of Total | <u>25 – 36”</u> 51-75 yrs. | % of Total | <u>37”+</u> 76+ yrs. | % of Total |
|---------------------------|---------------|-----------------------------|---------------|-------------------------------|---------------|-------------------------------|---------------|-------------------------|---------------|
| 537 | 18% | 1503 | 52% | 641 | 22% | 193 | 7% | 44 | 1% |

Table 10 displays similar results as the street tree table, Table 3 (Page 13), where most trees were planted from about 1980 to the present. A comparison between older trees (25 years and older) indicates 30% for park trees and 18% for street trees.

Table 11 displays a higher condition rating percentage for park trees than the similar street tree condition table, Table 4 (Page 14). Trees rated 70% condition or higher comprised 83% of the total park trees compared with 60% of the total street trees.

Table 11. Park Tree Condition Summary

| 90-100% | % of Total | 70-80% | % of Total | 60% | % of Total | 40-50% | % of Total | 0-30% | % of Total |
|----------------|---------------|---------------|---------------|------------|---------------|---------------|---------------|--------------|---------------|
| 90 | 3 % | 2345 | 80% | 229 | 8% | 94 | 3% | 160 | 6% |

Park Tree Problems

Park trees suffer some of the same hardships as street trees, though they generally have greater rooting area, more canopy area and are further from the negative effects of heavy traffic, large numbers of pedestrians and harsh microclimates. Table 12 displays problems found during the inventory. Please refer to Page 19 for definitions of each problem listed below

Table 12. Park Tree Problems

| Problem | No. of Trees | Problem | No. of Trees |
|----------------|---------------------|------------------|---------------------|
| Buried | 13 | Hardscape & Lift | 18 |
| Clearance | 0 | Root Problems | 67 |
| Damage | 37 | Staked | 24 |
| Deadwood | 96 | Structure | 101 |
| Decay | 33 | Topped | 9 |
| Disease | 17 | Wires | 6 |
| Drainage | 15 | | |
| | | Totals | 436 |

From the table, about 15% of the planted park trees require treatment to improve their health and condition. This compares to 53% of street trees with similar problems.

Park Tree Value

Park trees were appraised in the same manner as street trees, using the Guide for Plant Appraisal (Pages 15 to 17). Values are for trees planted into parks and do not include forest remnants.

Generally, Table 13 indicates higher values per tree where trees average a larger size. Also note that street trees outnumber park trees (4,220 versus 2,918, respectively). However, the total value is much higher for park trees due to their larger size and healthier conditions.



Table 13. Park Tree Number and Value by Park

| Location | Value | No. of Trees | Average Value per Tree | Location | Value | No. of Trees | Average Value per Tree |
|------------------------|-------------|--------------|------------------------|-----------------------|--------------------|--------------|------------------------|
| Burnett Park | \$387,000 | 55 | \$7,000 | N. Highland Park | \$224,000 | 13 | \$17,200 |
| Cedar River Park | \$527,000 | 196 | \$2,700 | Philip Arnold Park | \$814,000 | 120 | \$6,800 |
| Cedar River Trail Park | \$972,000 | 568 | \$1,700 | Piazza | \$9,000 | 36 | \$250 |
| Gene Coulon Park | \$2,147,000 | 817 | \$2,600 | Riverview Park | \$600,000 | 184 | \$3,300 |
| Earlington Park | \$120,000 | 14 | \$8,600 | Ron Regis Park | \$123,000 | 124 | \$1,000 |
| Glencoe Park | \$13,000 | 14 | \$900 | Sunset Court Park | \$63,000 | 7 | \$9,000 |
| Highlands Park | \$487,000 | 108 | \$4,500 | Talbot Reservoir Park | \$4,000 | 3 | \$1,300 |
| Jones Park | \$174,000 | 26 | \$6,700 | Teasdale Park | \$705,000 | 204 | \$3,500 |
| Kennydale-Lions Park | \$161,000 | 50 | \$3,200 | Tiffany Park | \$234,000 | 47 | \$5,000 |
| Kiwanis Park | \$903,000 | 87 | \$10,400 | Tonkin Park* | \$158,000 | 5 | \$31,600 |
| Liberty Park | \$420,000 | 69 | \$6,100 | Windsor Hills Park | \$458,000 | 138 | \$3,300 |
| Maplewood Park | \$67,000 | 4 | \$16,800 | Unknown | \$6,000 | 20 | \$300 |
| Maplewood Road. Park | \$11,000 | 9 | \$1,200 | Totals | \$9,787,000 | 2918 | \$3,400 |

*One tulip-poplar tree was appraised at over \$58,000; it has a diameter of 59 inches or 15 feet in circumference!

Other Park Tree Values

Park trees are constantly working to reduce stormwater run-off, intercepting pollutants, creating oxygen and making public spaces cooler. Recent research around the country has been able to quantify some of the benefits trees provide, mostly by demonstrating the cost-savings provided by trees compared with constructing stormwater retention and detention facilities, savings in health care costs by removing particulates, by reducing greenhouse gases and producing life-sustaining oxygen.

Using numbers from other research results, Renton's parks trees contribute over \$1 million in savings by intercepting and absorbing rain water. These same trees also provide nearly \$200,000 worth of services by removing air pollutants and producing oxygen.

Summary of Park Tree Inventory

Generally, a broader selection of tree species and sizes is found in parks than along streets. A larger selection of tree species can be used in parks because restrictions for space are fewer, especially for larger maturing trees and there is less concern for certain tree characteristics such as with nut trees. Park trees typically experience larger soil volumes, are able to grow wider and taller, encounter more frequent fertilization and watering, consequently surviving longer and growing larger than street trees. As a result, park trees have a higher average value per tree than street trees.

Table 12 (Page 25) shows very few tree problems as compared to street trees. Evaluators may not have been as cognizant of park trees as street trees especially related to tree structure. Personal observations by Parks Division staff indicate a large quantity of pruning work in parks, especially for structural pruning and deadwood removal. Structural pruning is the practice of recognizing problem branches early in the life of a tree and pruning those branches when small to avoid removing large branches later. Conversely, pruning large branches can increase disease and decay problems when large pruning wounds result, and this can shorten lifespan and is more costly to perform. In addition, larger problem-branches are prone to breakage causing severe damage to trees as well as increasing emergency work following a storm.

Taking action to reduce tree problems and planting more park trees hold promise for increasing tree values in parks.

Future inventory needs of park trees should consider the following:

- 100% inventory of remnant clumps and naturalized areas within park parcel boundaries
- Emphasis on pruning needs of park trees
- Identification of planting locations
- Thorough appraisal for precise tree value

Natural Area Tree Inventory

The inventory investigated 11 natural areas in city-ownership (see map, Page 29). These properties range from wetlands to steep slopes, from protected habitat to river-edge buffers. A separate map for each natural area was developed for the purposes of this inventory (see the Appendix).

The process used to determine the number of trees included:

- One-tenth acre sample plot taken
- A minimum of ten sample plots spaced randomly throughout a natural area
- Determine the average number of trees per acre
- Determine total acreage and adjusted acreage by subtracting non-wooded acreage
- Multiply total trees per acre by adjusted acreage



The adjusted acreage of a natural area was determined from aerial photographs. For example, the Cedar River Natural Area contains 237 acres of which 70 percent or 166 acres are wooded. 166 are the adjusted acres that are used and multiplied by the trees per acre for the total number in the Cedar River Natural Area, or 37,991 trees. Table 14 displays the total acreage, adjusted acreage and total number of trees for each Natural Area.

Slightly more than half of natural area acreage is forested; the remaining areas contain fields, wetlands, and improvements or consist of small pioneer tree species in seedling or sapling stages of development.

Trees in natural areas are left to the natural course. These trees provide habitat, cover and forage for wildlife. They assist in reducing the peak storm events into the city drainage system and protect against flooding. While some maintenance activities occur, it is at a reduced level from the kinds of maintenance activities applied to park and street trees. Maintenance activities to trees in natural areas occurs but has been limited to identifying and removing high risk trees and clearing pathways of toppled trees and branches following storm events.

Page 29 provides an overview map of the natural areas included in this inventory. Please see the Appendix for detailed maps for individual natural area locations.

Overview Map of Natural Areas

The Natural Areas of this report are those shown on the map below in yellow highlight. Some areas may contain parcels of land owned by others. Please see the Appendix for detailed maps of these locations. The map is not to scale.

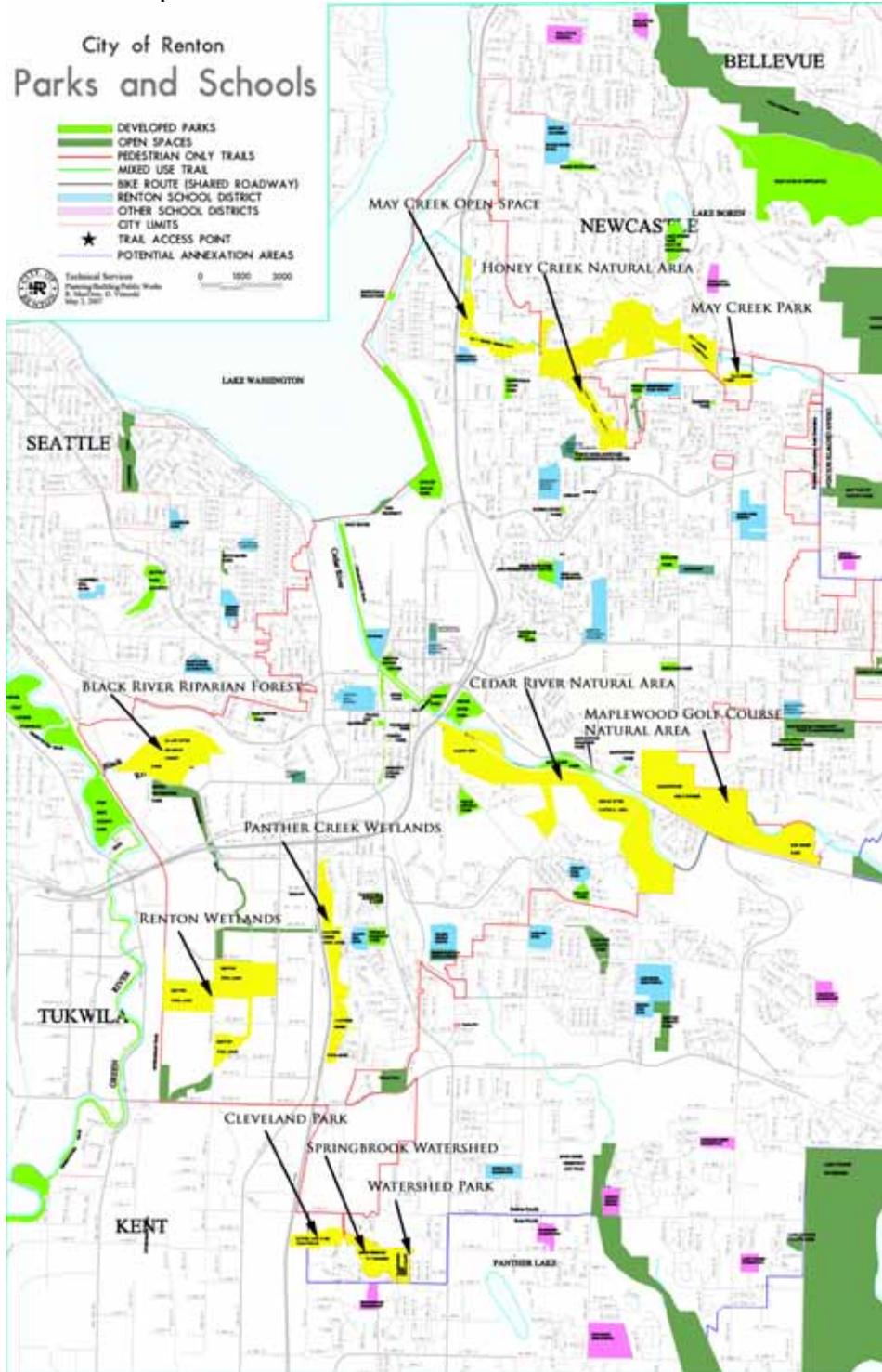


Table 14. Natural Areas, Acreage, Adjusted Acreage and Estimated Number of Trees

| Name | Acres | Adjusted Acres | Wooded Condition | Total Number of Trees |
|--------------------------------------|--------------|----------------|------------------|-----------------------|
| Cedar River Natural Area | 237 | 166 | 70% | 37,991 |
| Cleveland Park | 23.7 | 11.85 | 50% | 1,897 |
| May Creek Open Space | 30 | 27 | 90% | 10,800 |
| Watershed Park/Springbrook Watershed | 54 | 43.2 | 80% | 8,770 |
| Maplewood Golf Course Natural Areas | 80 | 24 | 30% | 9,456 |
| May Creek Park | 10 | 6 | 60% | 1,056 |
| Heritage Park | 9.2 | 7.63 | 83% | 1,313* |
| Black River Riparian Forest | 92 | 55.2 | 60% | 13,855 |
| Honey Creek | 35.7 | 30.35 | 85% | 7,343 |
| Renton Wetlands | 125 | 6.25 | 25% | 4,094 |
| Panther Creek Wetlands | 72.5 | 23.7 | 34% | 8,792 |
| Total | 769.1 | 401.2 | 52% | 105,367 |

*Number of trees corresponds to the 2003 inventory – 2007 park development has reduced this amount.

Table 15 displays the quantity of trees by species for each natural area. The most common species recorded in 2003 were:

- Bigleaf maple – 31% of total
- Cottonwood – 20%
- Red alder – 18%
- Douglas fir – 9%
- Western hemlock – 9%
- Western redcedar - 7%

Natural areas contain greater species diversity and ages than developed parks. Many areas contain complex mixes of species referred to as stands. The photograph at right is typical of a mixed stand that continues to develop following disturbance comprised of cottonwoods, maples and alder. The coniferous trees were already present but much smaller at the time of disturbance (e.g. logging).



Maplewood Golf Course

Table 15. Natural Area Tree Species – Tree Count

| Species | Cedar River | Cleveland | May Creek O. S. | Springbrook Wetlands | Maplewood G. C. | May Creek Park | Heritage Park | Black River R. F. | Honey Creek | Renton Wetlands | Panther Creek | Total | % of Total |
|-----------------|-------------|-----------|-----------------|----------------------|-----------------|----------------|---------------|-------------------|-------------|-----------------|---------------|---------|------------|
| Bigleaf maple | 18,183 | 158 | 1,080 | 3,110 | 3,696 | 354 | 565 | | 2,822 | | 2,986 | 32,954 | 31 |
| Vine maple | 116 | | | | 216 | | | | 273 | | 71 | 676 | 1 |
| Horsechestnut | | | | 43 | | 6 | | | | | | 49 | <1 |
| Alder | 3,816 | 1,324 | 6,480 | 821 | 672 | 456 | 336 | 2,263 | 880 | 125 | 1,730 | 18,903 | 18 |
| Cottonwood | 2,157 | | 2,160 | 2,333 | 168 | 132 | 137 | 9,826 | | 2,344 | 1,943 | 21,200 | 20 |
| Lombardy poplar | | | | | | | | 110 | | | | 110 | <1 |
| Balsam poplar | | | | | | | | | 273 | | | 273 | <1 |
| Douglas fir | 3,567 | 296 | 540 | 1,469 | 528 | 6 | 122 | 442 | 1,942 | 31 | 901 | 9,844 | 9 |
| Willow | 66 | | | | 408 | 54 | | 552 | | 1,375 | 237 | 2,692 | 3 |
| Hemlock | 7,432 | 20 | | 821 | 456 | | | | 334 | | | 9,063 | 9 |
| W. redcedar | 2,654 | 79 | 540 | 130 | 2,640 | 48 | 31 | | 637 | | 687 | 7,446 | 7 |
| Oregon ash | | | | | | | | 386 | | | 47 | 433 | <1 |
| Bay laurel | | | | | | | | 55 | | | 24 | 79 | <1 |
| Pines | | | | | | | | 221 | | 31 | 24 | 276 | <1 |
| Holly | | 20 | | 43 | | | | | | | 24 | 87 | <1 |
| Beaked filbert | | | | | 288 | | | | 121 | | 47 | 456 | <1 |
| Bitter cherry | | | | | 240 | | 122 | | | 63 | 47 | 472 | <1 |
| Chokecherry | | | | | 144 | | | | | | 24 | 168 | <1 |
| Pacific madrone | | | | | | | | | 61 | | | 61 | <1 |
| Deodor cedar | | | | | | | | | | 94 | | 94 | <1 |
| Planetree | | | | | | | | | | 31 | | 31 | <1 |
| Totals | 37,991 | 1,897 | 10,800 | 8,770 | 9,456 | 1,056 | 1,313 | 13,855 | 7,343 | 4,094 | 8,792 | 105,367 | 100 |

Stand Density

Stand density is important in natural areas. A forestry goal is to have as many trees as the land is capable of holding. A wildlife goal is to have varied conditions, some dense stands, some not so dense stands, some openings and some other habitats such as wetlands, streams or ponds. Keeping stands dense to prevent unwanted plants from invading is a land management goal. When comparing tree quantities with the number of acres, stand density can be determined. Trees per acre information help managers understand the quality of the natural area in relation to setting management goals. Table 16 displays the stand density of the natural areas.

Table 16. Natural Areas Stand Density - Trees/Acre

| Cedar River | Cleveland | May Creek O.S. | Springbrook | Maplewood G. C. | May Creek Park | Heritage Park | Black River R. F. | Honey Creek | Renton Wetlands | Panther Creek |
|-------------|-----------|----------------|-------------|-----------------|----------------|---------------|-------------------|-------------|-----------------|---------------|
| 229 | 160 | 400 | 203 | 394 | 176 | 172 | 249 | 242 | 131 | 371 |

| <u>Natural Area Tree Statistics</u> | |
|---|-------------|
| Current Timber Value: | \$1,262,460 |
| • Ave. Board-foot Volume/Acre | 2,244 |
| • Lowest Board-foot Volume/Acre (Black River Riparian Forest) | 144 |
| • Highest Board-foot Volume/Acre (Springbrook Watershed) | 15,171 |
| Ideal Board-foot Volume/Acre | 130,000 |
| Ave. Trees/Acre | 263 |
| Lowest Trees/Acre (Renton Wetlands) | 131 |
| Highest Trees/Acre (May Creek Open Space) | 400 |
| Ideal Old Growth Trees/Acre | 20 |
| <p>Wildlife Values: Renton’s Natural Areas provide important wildlife benefits. Based upon trees/acre, natural areas are currently at the lower limit for wildlife habitat. While acceptable, relatively lower species diversity exists. Generally, for a larger diversity of wildlife, more trees per acre of a larger diameter are desirable.</p> | |
| <p>Silviculture for Washington Family Forests, WSU Extension Publication ED2000, D.P. Hanley & D.M. Baumgartner, Dec. 2005</p> | |

From the table, the number of trees per acre at May Creek Open Space and the natural area above Maplewood Golf Course are more heavily wooded than other areas.

Stand density goals are dependent upon the average size of trees at the end of a span of time. For example, old-growth tree standards call for very few trees per acre. Generally, the only way to attain old-growth size is for fewer trees to grow larger. Trees in very dense stands cannot attain large sizes because sunlight, water and nutrients are limiting growth. Dense stands require periodic thinning to add diameter to remaining trees and to attain old-growth sizes. This thinning process can occur naturally or be done intentionally. Thinning reduces the amount of time to reach a particular size.

The sidebar to the left contains general productivity information using inventory information.

The sidebar displays a timber value of \$1.3 million dollars. This is a stumpage value. Stumpage value is the lumber value of trees growing in the woods and expressed in thousands of board feet per acre (one board foot is 1” thick by 12” wide by 1’ long).⁶ For example, in the Springbrook Watershed/Watershed Park areas, there are 15,000 board feet per acre, also expressed as 15 MBF/A.

A tree species has a specific stumpage value determined by lumber market demand. For example, Douglas fir might have a value of

\$520/MBF (per thousand board feet). Tree value usually will be higher if logs are cut and stacked for hauling or delivered to a mill for processing.

Stumpage value in the sidebar above was determined using density information and assumptions made regarding average tree size and other tree volume calculations.

⁶ Forestry Handbook, 2nd Edition, Society of American Foresters

Natural Area “Working Forest” Values

Besides the values discussed above, natural area trees (as well as trees in parks and along streets) reduce stormwater run-off, create oxygen, intercept pollutants and provide many other benefits.

Because commercial harvesting of trees will be limited or non-existent on City natural area lands and because there is more than stumpage value for forest trees, other values can be determined for Renton’s natural area trees from other research conducted around the country on the “work” trees provide to people. These values are usually expressed in dollars saved if water detention structures were constructed instead of using trees to provide the same type of benefits or dollars saved in health care costs from pollution.

From the inventory of information collected regarding the quantity of trees, Renton’s “working forest” intercepts 115 million gallons of rainwater annually. The service trees provide in stormwater-runoff reductions in natural areas amount to a savings of \$5 million. This amount is a value associated with the cost of treating rainwater using conventional stormwater management structures and techniques.

Natural area trees also improve air quality by removing greenhouse gases such as carbon dioxide (CO²) and by producing oxygen. They also remove particulate matter in air pollution. The service provided by the working forest results in a cost savings of \$9.87 per tree or a total savings of over \$1 million on an annual basis.

Summary of the Natural Area Tree Inventory

Trees in 11 City-owned natural areas were inventoried using a sample-plot approach where ten one-tenth acre sample plots were placed randomly through a natural area. The result of this survey provides an indication of the quantity of tree species found in natural areas. Consistent with park and street trees, maple trees dominate. Significant numbers of cottonwood and alder trees are also present. There are a total of 105,367 trees. The main benefits of trees in natural areas are related to wildlife and soil stabilization with recreation activities playing a major role in most locations. Renton’s working forest provides other values related to stormwater mitigation and improving air quality.

Future inventory needs of natural area trees should consider the following:

- Exact location of natural area boundaries by pre-inventory survey of property boundaries
- Identification of boundary trees and their impact on adjacent properties
- Inventory tailored to management goals of individual natural areas

At the time of the inventory, Heritage Park, referred then as Heather Downs, was an undeveloped area and considered part of the natural area inventory. Since that time, the park has been developed and approximately half the trees in the inventory taken in 2003 exist, the others have been removed to create a beautiful park in an underserved area of the City.

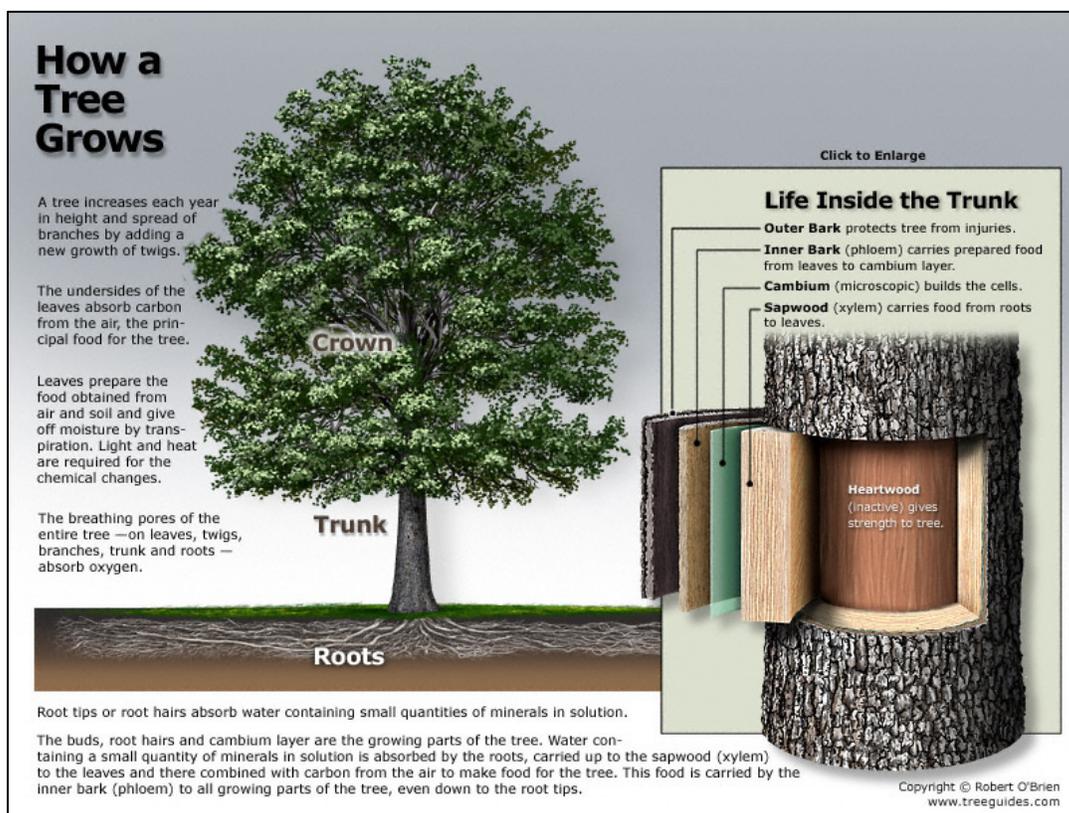
APPENDIX

- Table 1 – Street Trees by Genus and Species
- Table 2 – Street Tree DBH/Age-Class Distribution
- Table 3 – Street Tree Condition Groupings

- Table 4 – Park Trees by Genus and Species
- Table 5 – Park Tree DBH/Age-Class Distribution
- Table 6 – Park Tree Condition Groupings

- Tables of Natural Area Trees by Natural Area
 - Plot Information
 - Natural Area Maps⁷

- Maintenance Task Expenditure Summary



⁷ Maps shown are for reference only and do not depict actual property ownerships. Other property ownerships are not displayed to make the maps more readable. Please refer to ParcelViewer within RentonNet for more accurate parcel locations.

Appendix

Table 1. Street Trees by Genus and Species

| Scientific Name | Common Name | Quantity | % of Total |
|--|-----------------------|----------|------------|
| <i>Abies balsamea</i> | Balsam fir | 2 | 0.05% |
| <i>Abies concolor</i> | White fir | 8 | 0.19% |
| <i>Abies grandis</i> | Grand fir | 1 | 0.02% |
| <i>Abies procera</i> | Noble fir | 1 | 0.02% |
| <i>Acer campestre</i> | Hedge maple | 1 | 0.02% |
| <i>Acer circinatum</i> | Vine maple | 4 | 0.09% |
| <i>Acer griseum</i> | Paperbark maple | 2 | 0.05% |
| <i>Acer macrophyllum</i> | Bigleaf maple | 34 | 0.81% |
| <i>Acer palmatum</i> | Japanese maple | 54 | 1.28% |
| <i>Acer platanoides</i> | Norway maple | 820 | 19.43% |
| <i>Acer rubrum</i> | Red maple | 554 | 13.13% |
| <i>Albizia julibrissin</i> | Silk-tree or Mimosa | 1 | 0.02% |
| <i>Araucaria araucana</i> | Monkey puzzle | 1 | 0.02% |
| <i>Arbutus menziesii</i> | Pacific madrone | 7 | 0.17% |
| <i>Betula albo-sinensis</i> | Chinese paperbirch | 2 | 0.05% |
| <i>Betula lenta</i> | Sweet birch | 4 | 0.09% |
| <i>Betula nigra</i> | River birch | 15 | 0.36% |
| <i>Betula papyrifera</i> | Paper birch | 26 | 0.62% |
| <i>Betula pendula</i> | European white birch | 7 | 0.17% |
| <i>Carpinus betulus</i> | European hornbeam | 7 | 0.17% |
| <i>Carpinus caroliniana</i> | American hornbeam | 15 | 0.36% |
| <i>Catalpa speciosa</i> | Northern catalpa | 1 | 0.02% |
| <i>Cedrus atlantica</i> | Atlas cedar | 9 | 0.21% |
| <i>Cedrus deodara</i> | Deodar cedar | 16 | 0.38% |
| <i>Cercis canadensis</i> | Eastern redbud | 18 | 0.43% |
| <i>Chamaecyparis pisifera</i> | Japanese falsecypress | 8 | 0.19% |
| <i>Cornus florida</i> | Flowering dogwood | 11 | 0.26% |
| <i>Corylus avellana</i> | European filbert | 1 | 0.02% |
| <i>Corylus columna</i> | Turkish filbert | 19 | 0.45% |
| <i>Crataegus douglasii</i> | Black hawthorn | 1 | 0.02% |
| <i>Crataegus laevigata</i> | English hawthorn | 32 | 0.76% |
| <i>Cryptomeria japonica</i> | Japanese cedar | 1 | 0.02% |
| <i>Fraxinus americana</i> | White ash | 126 | 2.99% |
| <i>Fraxinus latifolia</i> | Oregon ash | 3 | 0.07% |
| <i>Fraxinus oxycarpa</i> | Desert or Raywood ash | 79 | 1.87% |
| <i>Ginkgo biloba</i> | Ginkgo | 4 | 0.09% |
| <i>Gleditsia triacanthos</i> var. <i>inermis</i> | Thornless honeylocust | 29 | 0.69% |
| <i>Ilex aquifolium</i> | English holly | 2 | 0.05% |
| <i>Ilex opaca</i> | American holly | 2 | 0.05% |
| <i>Juniperus communis</i> | Common juniper | 2 | 0.05% |
| <i>Juniperus virginiana</i> | Eastern redcedar | 2 | 0.05% |
| <i>Laburnum anagyroides</i> | Golden chain | 3 | 0.07% |
| <i>Laburnum x watereri</i> | Goldenchain | 3 | 0.07% |
| <i>Lavandula angustifoli</i> | Lavendar | 1 | 0.02% |

| Scientific Name | Common Name | Quantity | % of Total |
|------------------------------|------------------------------|----------|------------|
| Liquidambar styraciflua | American sweetgum | 238 | 5.64% |
| Liriodendron tulipifera | Tuliptree or Yellow Poplar | 6 | 0.14% |
| Magnolia x soulangiana | Saucer magnolia | 1 | 0.02% |
| Malus floribunda | Japanese flowering crabapple | 31 | 0.73% |
| Malus fusca | Oregon crabapple | 2 | 0.05% |
| Malus magdeburgensis | Flowering crabapple | 1 | 0.02% |
| Malus purpurea | Purple crabapple | 19 | 0.45% |
| Malus sargentii | Sargent crabapple | 4 | 0.09% |
| Not Identified | Unknown | 8 | 0.19% |
| Paulownia tomentosa | Empress tree | 1 | 0.02% |
| Picea abies | Norway spruce | 1 | 0.02% |
| Picea engelmannii | Engelman spruce | 2 | 0.05% |
| Picea glauca | White spruce | 4 | 0.09% |
| Picea koyamoi | Koyamoi spruce | 3 | 0.07% |
| Picea pungens | Colorado spruce | 2 | 0.05% |
| Pinus banksiana | Jack pine | 6 | 0.14% |
| Pinus contorta | Lodgepole pine | 5 | 0.12% |
| Pinus densiflora and cvs. | Japanese red pine | 6 | 0.14% |
| Pinus monticola | Western white pine | 1 | 0.02% |
| Pinus nigra | Austrian pine | 17 | 0.40% |
| Pinus palustris | Long-leaf pine | 1 | 0.02% |
| Pinus ponderosa | Ponderosa pine | 20 | 0.47% |
| Pinus resinosa | Red pine | 2 | 0.05% |
| Pinus strobus | Eastern White pine | 2 | 0.05% |
| Pinus sylvestris | Scotch pine | 16 | 0.38% |
| Pinus thunbergiana | Japanese black pine | 1 | 0.02% |
| Pinus virginiana | Scrub pine | 8 | 0.19% |
| Platanus x acerifolia | London planetree | 282 | 6.68% |
| Populus alba | White poplar | 9 | 0.21% |
| Populus deltoides | Eastern cottonwood | 2 | 0.05% |
| Populus nigra 'Italica' | Italian poplar | 15 | 0.36% |
| Populus tremuloides | Quaking aspen | 10 | 0.24% |
| Populus trichocarpa | Black cottonwood | 5 | 0.12% |
| Prunus | Cherry - other | 6 | 0.14% |
| Prunus cerasifera | Purple leaf plum | 676 | 16.02% |
| Prunus lusitanica | Portugal laurel | 1 | 0.02% |
| Prunus persica | Peach | 1 | 0.02% |
| Prunus sargentii | Sargent cherry | 162 | 3.84% |
| Prunus serrulata | Japanese flowering cherry | 95 | 2.25% |
| Prunus subhirtella | Higan cherry | 24 | 0.57% |
| Prunus x blireiana | Blireiana plum | 47 | 1.11% |
| Prunus x hillieri | Spire cherry | 4 | 0.09% |
| Prunus x yedoensis 'Akebono' | Akebono cherry | 7 | 0.17% |
| Pseudotsuga menziesii | Douglas fir | 134 | 3.18% |
| Pyrus calleryana cvs | Callery pear | 81 | 1.92% |
| Quercus palustris | Pin oak | 11 | 0.26% |

| Scientific Name | Common Name | Quantity | % of Total |
|------------------------------------|-------------------------------|-------------|----------------|
| <i>Quercus robur</i> | English oak | 35 | 0.83% |
| <i>Quercus rubra</i> | Northern red oak | 69 | 1.64% |
| <i>Rhus typhina</i> | Staghorn sumac | 4 | 0.09% |
| <i>Robinia pseudoacacia</i> | Black locust | 3 | 0.07% |
| <i>Robinia viscosa</i> | Clammy locust | 2 | 0.05% |
| <i>Salix babylonica</i> | Weeping willow | 1 | 0.02% |
| <i>Salix scouleriana</i> | Scouler willow | 1 | 0.02% |
| <i>Sequoia sempervirens</i> | Coast redwood | 3 | 0.07% |
| <i>Sorbus americana</i> | American mountainash | 1 | 0.02% |
| <i>Sorbus aucuparia</i> | European mountainash | 3 | 0.07% |
| <i>Styrax japonicus</i> | Japanese snowbell | 4 | 0.09% |
| <i>Syringa vulgaris</i> | Common lilac | 2 | 0.05% |
| <i>Thuja occidentalis</i> | Arborvitae or White cedar | 89 | 2.11% |
| <i>Thuja plicata</i> | Western red cedar | 31 | 0.73% |
| <i>Thujopsis dolabrata</i> | False arborvitae | 1 | 0.02% |
| <i>Tilia americana</i> | American linden or basswood | 4 | 0.09% |
| <i>Tilia cordata</i> | Littleleaf or European linden | 42 | 1.00% |
| <i>Tsuga heterophylla</i> | Western hemlock | 2 | 0.05% |
| <i>Ulmus glabra</i> 'Camperdownii' | Camperdown Scotch elm | 4 | 0.09% |
| | | 4220 | 100.00% |

Table 2. Street Tree DBH-Age Class Distribution

| DBH | No. | % of Total | Diameter Groupings | % of Total | DBH | No. | % of Total | Diameter Groupings | % of Total |
|-----|-----|------------|--------------------|------------|-----|-------------|----------------|--------------------|-------------|
| 1 | 140 | 3.32% | | | 25 | 15 | 0.36% | | |
| 2 | 418 | 9.91% | | | 26 | 16 | 0.38% | | |
| 3 | 377 | 8.93% | 935 | 22% | 27 | 13 | 0.31% | | |
| 4 | 493 | 11.68% | | | 28 | 9 | 0.21% | | |
| 5 | 434 | 10.28% | | | 29 | 5 | 0.12% | | |
| 6 | 386 | 9.15% | | | 30 | 7 | 0.17% | | |
| 7 | 259 | 6.14% | | | 31 | 7 | 0.17% | | |
| 8 | 220 | 5.21% | | | 32 | 4 | 0.09% | | |
| 9 | 258 | 6.11% | | | 33 | 4 | 0.09% | | |
| 10 | 156 | 3.70% | | | 34 | 1 | 0.02% | | |
| 11 | 119 | 2.82% | | | 35 | 1 | 0.02% | | |
| 12 | 219 | 5.19% | 2544 | 60% | 36 | 7 | 0.17% | 89 | 2% |
| 13 | 93 | 2.20% | | | 37 | 3 | 0.07% | | |
| 14 | 131 | 3.10% | | | 38 | 1 | 0.02% | | |
| 15 | 90 | 2.13% | | | 39 | 5 | 0.12% | | |
| 16 | 52 | 1.23% | | | 40 | 6 | 0.14% | | |
| 17 | 77 | 1.82% | | | 41 | 2 | 0.05% | | |
| 18 | 50 | 1.18% | | | 42 | 1 | 0.02% | | |
| 19 | 28 | 0.66% | | | 43 | 3 | 0.07% | | |
| 20 | 36 | 0.85% | | | 44 | 1 | 0.02% | | |
| 21 | 15 | 0.36% | | | 47 | 3 | 0.07% | | |
| 22 | 16 | 0.38% | | | 49 | 1 | 0.02% | | |
| 23 | 17 | 0.40% | | | 50 | 1 | 0.02% | | |
| 24 | 18 | 0.43% | 623 | 15% | 52 | 1 | 0.02% | 29 | 1% |
| | | | | | | 4220 | 100.00% | 4220 | 100% |

Table 3. Park Trees by Genus and Species

| Scientific Name | Common Name | Quantity | % of Total |
|---|----------------------------|----------|------------|
| <i>Abies grandis</i> | Grand fir | 1 | 0.03% |
| <i>Acer circinatum</i> | Vine maple | 11 | 0.38% |
| <i>Acer ginnala</i> | Amur maple | 5 | 0.17% |
| <i>Acer macrophyllum</i> | Bigleaf maple | 383 | 13.15% |
| <i>Acer palmatum</i> | Japanese maple | 4 | 0.14% |
| <i>Acer platanoides</i> | Norway maple | 88 | 3.02% |
| <i>Acer rubrum</i> | Red maple | 483 | 16.58% |
| <i>Acer saccharinum</i> | Sugar maple | 119 | 4.09% |
| <i>Aesculus hippocastan</i> | Horse chestnut | 11 | 0.38% |
| <i>Alnus oregona</i> | Red alder | 22 | 0.76% |
| <i>Alnus rubra</i> | Red alder | 3 | 0.10% |
| <i>Betula nigra</i> | River birch | 3 | 0.10% |
| <i>Betula papyrifera</i> | Paper birch | 2 | 0.07% |
| <i>Betula pendula</i> | Birch | 1 | 0.03% |
| <i>Betula pendula</i> | Paper birch | 13 | 0.45% |
| <i>Betula species</i> | Species birch | 1 | 0.03% |
| <i>Betula species</i> | Species birch | 2 | 0.07% |
| <i>Calocedrus decurrans</i> | Incense cedar | 8 | 0.27% |
| <i>Castanea mollissima</i> | Chinese chestnut | 2 | 0.07% |
| <i>Cedrus deodara</i> | Deodar cedar | 4 | 0.14% |
| <i>Cercidiphyllum japon</i> | Katsura tree | 2 | 0.07% |
| <i>Chamaecyparis lawson</i> | Port Orford cedar | 20 | 0.69% |
| <i>Chamaecyparis nootka</i> | Alaskan yellow cedar | 1 | 0.03% |
| <i>Cladrastis lutea</i> | Yellow wood | 10 | 0.34% |
| <i>Cornus florida</i> | Flowering dogwood | 5 | 0.17% |
| <i>Cornus kousa</i> | Japanese flowering dogwood | 8 | 0.27% |
| <i>Corylus cornuta</i> var. <i>california</i> | California hazel | 1 | 0.03% |
| <i>Crataegus laevigata</i> | English hawthorn | 12 | 0.41% |
| <i>Crategus lavalley</i> | Oregon crabapple | 1 | 0.03% |
| <i>Crategus lavalley</i> | Carriere hawthorn | 2 | 0.07% |
| <i>Crategus lavalley</i> | Carriere hawthorn | 3 | 0.10% |
| <i>Crategus lavalley</i> | Carriere hawthorn | 3 | 0.10% |
| <i>Crategus lavalley</i> | Carriere hawthorn | 4 | 0.14% |
| <i>Crategus lavalley</i> | Sargent crabapple | 4 | 0.14% |
| <i>Crategus lavalley</i> | Hawthorne | 16 | 0.55% |
| <i>Fagus grandifolia</i> | American beech | 1 | 0.03% |
| <i>Fagus sylvatica</i> | European beech | 82 | 2.81% |
| <i>Fraxinus ornus</i> | Flowering ash | 3 | 0.10% |
| <i>Fraxinus americana</i> | White ash | 23 | 0.79% |
| <i>Fraxinus latifolia</i> | Oregon ash | 21 | 0.72% |
| <i>Ginkgo biloba</i> | Ginkgo | 3 | 0.10% |
| <i>Gleditsia triacanthos</i> | Thornless honeylocust | 58 | 1.99% |
| <i>Larix occidentalis</i> | Western larch | 5 | 0.17% |
| <i>Liquidambar styraciflura</i> | Sweetgum | 6 | 0.21% |

Table 3. Park Trees by Genus and Species (Continued)

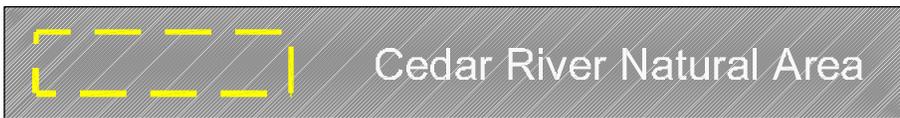
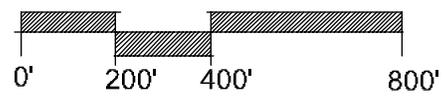
| Scientific Name | Common Name | Quantity | % of Total |
|--|---------------------------|----------|------------|
| <i>Liriodendron tulipifera</i> | Tulip tree | 75 | 2.51% |
| <i>Magnolia kobus</i> var. <i>loebneri</i> | Magnolia x loebneri | 13 | 0.45% |
| <i>Magnolia x soulangiana</i> | Saucer magnolia | 2 | 0.07% |
| <i>Malus sargentii</i> | Sargent crabapple | 1 | 0.03% |
| Not Identified | | 1 | 0.03% |
| Not Identified | | 13 | 0.45% |
| Not Identified - Broadleaf | | 2 | 0.07% |
| Not Identified - Conifer | | 1 | 0.03% |
| <i>Picea abies</i> | Norway spruce | 23 | 0.79% |
| <i>Picea glauca</i> | White spruce | 2 | 0.07% |
| <i>Picea sitchensis</i> | Sitka spruce | 1 | 0.03% |
| <i>Pinus</i> | Pine species | 6 | 0.21% |
| <i>Pinus contorta</i> | Shore pine | 84 | 2.88% |
| <i>Pinus densiflora</i> and cvs. | Japanese red pine | 91 | 3.12% |
| <i>Pinus nigra</i> | Austrian pine | 27 | 0.93% |
| <i>Pinus ponderosa</i> | Ponderosa pine | 12 | 0.41% |
| <i>Pinus resinosa</i> | Pinus species | 4 | 0.14% |
| <i>Pinus species</i> | Pinus species | 69 | 2.37% |
| <i>Pinus sylvestris</i> | Scots pine | 61 | 2.09% |
| <i>Platanus x acerifoli</i> | London plane | 115 | 3.95% |
| <i>Populus alba</i> | White poplar | 4 | 0.14% |
| <i>Populus deltoides</i> | Eastern cottonwood | 5 | 0.17% |
| <i>Populus species</i> | Populus species | 3 | 0.10% |
| <i>Populus trichocarpa</i> | Black cottonwood | 87 | 2.99% |
| <i>Prunus cerasifera</i> | Purple leaf plum | 2 | 0.03% |
| <i>Prunus emarginata</i> | Bitter cherry | 5 | 0.17% |
| <i>Prunus sargentii</i> | Sargent cherry | 9 | 0.31% |
| <i>Prunus serrulata</i> | Japanese flowering cherry | 21 | 0.72% |
| <i>Prunus species</i> | Akebono cherry | 7 | 0.24% |
| <i>Prunus species</i> | Prunus species | 30 | 1.03% |
| <i>Prunus x yedoensis</i> ' | Akebono cherry | 18 | 0.62% |
| <i>Pseudotsuga menziesi</i> | Douglas-fir | 274 | 9.41% |
| <i>Pyrus calleryana</i> 'Bradford' | Bradford pear | 11 | 0.38% |
| <i>Pyrus calleryana</i> cvs | Ornamental pear | 18 | 0.62% |
| <i>Quercus alba</i> | White Oak | 1 | 0.03% |
| <i>Quercus chrysolepis</i> | Canyon live oak | 14 | 0.48% |
| <i>Quercus palustris</i> | Pin oak | 36 | 1.20% |
| <i>Quercus rubra</i> | Northern red oak | 71 | 2.44% |
| <i>Rhus typhina</i> | Staghorn sumac | 32 | 1.10% |
| <i>Robinia pseudoacacia</i> | Black locust | 2 | 0.03% |
| <i>Salix alba</i> var. <i>tris</i> | Golden weeping willow | 2 | 0.07% |
| <i>Salix babylonica</i> | Weeping willow | 7 | 0.24% |
| <i>Salix scouleriana</i> | Scouler willow | 2 | 0.07% |

Table 3. Park Trees by Genus and Species (Continued)

| Scientific Name | Common Name | Quantity | % of Total |
|---------------------------------|-----------------------|-----------------|-------------------|
| <i>Sequoia sempervirens</i> | Coast redwood | 1 | 0.03% |
| <i>Sequoiadendron giganteum</i> | Giant sequoia | 24 | 0.82% |
| <i>Sorbus americana</i> | American Mountain Ash | 1 | 0.03% |
| <i>Taxus brevifolia</i> | Pacific yew | 1 | 0.03% |
| <i>Thuja plicata</i> | Western red cedar | 128 | 4.39% |
| <i>Tilia americana</i> | American basswood | 1 | 0.03% |
| <i>Tilia cordata</i> | Little-leaf linden | 3 | 0.10% |
| <i>Tiwanian cryptomerioides</i> | Tiwanian species | 1 | 0.03% |
| <i>Tiwanian cryptomerioides</i> | Tiwanian species | 2 | 0.07% |
| <i>Tsuga heterophylla</i> | Western hemlock | 7 | 0.24% |
| <i>Ulmus pumila</i> | Siberian elm | 1 | 0.03% |
| <i>Zelkova serrata</i> | Japanese zelkova | 24 | 0.82% |
| | | 2918 | 100.00% |

Table 4. Park Tree DBH-Age Class Distribution

| DBH | Quantity | % of Total | Diameter Groupings | % of Total | DBH | Quantity | % of Total | Diameter Groupings | % of Total |
|-----|----------|------------|--------------------|------------|-----|-------------|----------------|--------------------|-------------|
| 1 | 6 | 0.21% | | | 44 | 1 | 0.03% | | |
| 2 | 155 | 5.32% | | | 45 | 2 | 0.07% | | |
| 3 | 376 | 12.91% | 537 | 18% | 47 | 2 | 0.03% | | |
| 4 | 214 | 7.35% | | | 48 | 3 | 0.10% | | |
| 5 | 192 | 6.59% | | | 51 | 1 | 0.03% | | |
| 6 | 147 | 5.05% | | | 52 | 1 | 0.03% | | |
| 7 | 193 | 6.63% | | | 53 | 2 | 0.07% | | |
| 8 | 211 | 7.24% | | | 54 | 1 | 0.03% | | |
| 9 | 123 | 4.22% | | | 55 | 3 | 0.10% | | |
| 10 | 135 | 4.63% | | | 58 | 4 | 0.10% | | |
| 11 | 69 | 2.37% | | | 66 | 1 | 0.03% | | |
| 12 | 219 | 7.52% | 1503 | 52% | 69 | 1 | 0.03% | 44 | 1% |
| 13 | 74 | 2.54% | | | | 2918 | 100.00% | 2918 | 100% |
| 14 | 68 | 2.30% | | | | | | | |
| 15 | 117 | 4.02% | | | | | | | |
| 16 | 48 | 1.65% | | | | | | | |
| 17 | 40 | 1.37% | | | | | | | |
| 18 | 35 | 1.20% | | | | | | | |
| 19 | 43 | 1.48% | | | | | | | |
| 20 | 66 | 2.27% | | | | | | | |
| 21 | 42 | 1.44% | | | | | | | |
| 22 | 52 | 1.79% | | | | | | | |
| 23 | 33 | 1.13% | | | | | | | |
| 24 | 23 | 0.79% | 641 | 22% | | | | | |
| 25 | 28 | 0.96% | | | | | | | |
| 26 | 22 | 0.76% | | | | | | | |
| 27 | 12 | 0.41% | | | | | | | |
| 28 | 15 | 0.51% | | | | | | | |
| 29 | 14 | 0.48% | | | | | | | |
| 30 | 26 | 0.89% | | | | | | | |
| 31 | 9 | 0.31% | | | | | | | |
| 32 | 12 | 0.41% | | | | | | | |
| 33 | 34 | 1.17% | | | | | | | |
| 34 | 8 | 0.24% | | | | | | | |
| 35 | 7 | 0.24% | | | | | | | |
| 36 | 6 | 0.21% | 193 | 7% | | | | | |
| 37 | 4 | 0.14% | | | | | | | |
| 38 | 8 | 0.27% | | | | | | | |
| 40 | 2 | 0.03% | | | | | | | |
| 41 | 2 | 0.07% | | | | | | | |
| 42 | 3 | 0.10% | | | | | | | |
| 43 | 3 | 0.10% | | | | | | | |



City of Renton Tree Inventory and Assessment Report

**Table of Trees
Cedar River Natural Area**

| Cedar River | Scientific Name | Common name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|-------------|------------------------------|-----------------|-----------------|------------------|-----------|-------------|-------|
| Plot 1 | <i>Alnus oregona</i> | Red alder | 4 | 9 | 3"-4" | 3" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 5 | | 10"-20" | 13" | |
| Plot 2 | <i>Acer macrophyllum</i> | Big leaf maple | 11 | 32 | 6"-17" | 12" | |
| | <i>Alnus oregona</i> | Red alder | 21 | | 3"-5" | 3" | |
| Plot 3 | <i>Acer macrophyllum</i> | Big leaf maple | 9 | 16 | 9"-22" | 17" | |
| | <i>Alnus oregona</i> | Red alder | 7 | | 3"-5" | 3" | |
| Plot 4 | <i>Acer macrophyllum</i> | Big leaf maple | 11 | 11 | 9"-29" | 17" | |
| | | | | | | | |
| Plot 5 | <i>Populus trichocarpa</i> | Cottonwood | 4 | 14 | 19"-31" | 26" | |
| | <i>Alnus oregona</i> | Red alder | 9 | | 5"-8" | 5.5" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 1 | | 12" | 12" | |
| Plot 6 | <i>Populus trichocarpa</i> | Cottonwood | 5 | 15 | 17"-27" | 24" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 5 | | 6"-16" | 11" | |
| | <i>Alnus oregona</i> | Red alder | 5 | | 4"-7" | 5" | |
| Plot 7 | <i>Acer macrophyllum</i> | Big leaf maple | 8 | 11 | 7"-21" | 13" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 2 | | 25"-28" | 26.5" | |
| | <i>Alnus oregona</i> | Red alder | 1 | | 13" | 13" | |
| Plot 8 | <i>Acer macrophyllum</i> | Big leaf maple | 7 | 16 | 3"-17" | 7" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 1 | | 13" | 13" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 6 | | 20"-47" | 28" | |
| | <i>Alnus oregona</i> | Red alder | 2 | | 3"-5" | 4" | |
| Plot 9 | <i>Acer macrophyllum</i> | Big leaf maple | 5 | 7 | 7"-32" | 12" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 1 | | 12" | 12" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 1 | | 6" | 6" | |
| Plot 10 | <i>Pseudotsuga menziesii</i> | Douglas fir | 1 | 14 | 24" | 24" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 2 | | 10"-14" | 12" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 10 | | 3"-39" | 15" | |
| | <i>Alnus oregona</i> | Red alder | 1 | | 24" | 24" | |

**Table of Trees
Cedar River Natural Area**

| Cedar River | Scientific Name | Common name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|--------------------|------------------------------|--------------------|------------------------|-------------------------|------------------|--------------------|--------------|
| Plot 11 | <i>Pseudotsuga menziesii</i> | Douglas fir | 4 | 16 | 10"-35" | 19" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 7 | | 6"-19" | 9" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 5 | | 23"-25" | 23" | |
| Plot 12 | <i>Acer macrophyllum</i> | Big leaf maple | 9 | 18 | 4"-48" | 20" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 9 | | 4"20" | 10" | |
| Plot 13 | <i>Tsuga heterophylla</i> | Western hemlock | 4 | 9 | 6"-25" | 16.5" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 4 | | 8"-29" | 18.5" | |
| | <i>Salix species</i> | Willow | 1 | | 4" | 4" | |
| Plot 14 | <i>Pseudotsuga menziesii</i> | Douglas fir | 2 | 12 | 14"-41" | 27.5" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 3 | | 6"-9" | 7" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 3 | | 35"-37" | 36" | |
| | <i>Thuja plicata</i> | Western red cedar | 1 | | 6" | 6" | |
| | <i>Alnus oregona</i> | Red alder | 3 | | 12"-13" | 12.5" | |
| Plot 15 | <i>Pseudotsuga menziesii</i> | Douglas fir | 3 | 20 | 13"-49" | 29.5" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 8 | | 3"-8" | 7" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 8 | | 6"-24" | 15" | |
| | <i>Alnus oregona</i> | Red alder | 1 | | 5" | | |
| Plot 16 | <i>Acer macrophyllum</i> | Big leaf maple | 52 | 69 | 3"-12" | 7" | 52 stems |
| | <i>Tsuga heterophylla</i> | Western hemlock | 8 | | 3"-28" | 15.5" | |
| | <i>Thuja plicata</i> | Western red cedar | 7 | | 4"-21" | 12" | |
| | <i>Alnus oregona</i> | Red alder | 2 | | 9"-11" | 10" | |
| Plot 17 | <i>Acer macrophyllum</i> | Big leaf maple | 13 | 19 | 6"-21" | 11" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 3 | | 4"-23" | 11.5" | |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 1 | | 24" | 24" | |
| | <i>Thuja plicata</i> | Western red cedar | 2 | | 7"-18" | 12.5" | |
| Plot 18 | <i>Acer macrophyllum</i> | Big leaf maple | 41 | 46 | 6"-18" | 12" | 41 stems |
| | <i>Tsuga heterophylla</i> | Western hemlock | 2 | | 7"-8" | 7.5" | |
| | <i>Thuja plicata</i> | Western red cedar | 2 | | 6"-9" | 7.5" | |
| | <i>Alnus oregona</i> | Red alder | 1 | | 11" | 11" | |

**Table of Trees
Cedar River Natural Area**

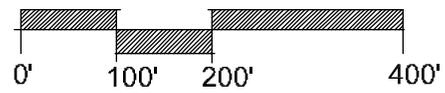
| Cedar River | Scientific Name | Common name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|--------------------|------------------------|--------------------|------------------------|-------------------------|------------------|--------------------|--------------|
| | | | | | | | |
| Plot 19 | Acer macrophyllum | Big leaf maple | 11 | 16 | 16"-25" | 14" | |
| | Pseudotsuga menziesii | Douglas fir | 1 | | 22" | 22" | |
| | Populus trichocarpa | Cottonwood | 1 | | 31" | 31" | |
| | Thuja plicata | Western red cedar | 1 | | 4" | 4" | |
| | Tsuga heterophylla | Western hemlock | 2 | | 7"-8" | 7.5" | |
| | | | | | | | |
| Plot 20 | Acer macrophyllum | Big leaf maple | 6 | 24 | 6"-20" | 11" | 6 stems |
| | Pseudotsuga menziesii | Douglas fir | 1 | | 35" | 35" | |
| | Populus trichocarpa | Cottonwood | 1 | | 38" | 38" | |
| | Tsuga heterophylla | Western hemlock | 9 | | 3"-10" | 6" | |
| | Acer Circinatum | Vine mape | 2 | | 4" | 4" | |
| | Alnus oregona | Red alder | 5 | | 4"-16" | 8" | |
| | | | | | | | |
| Plot 21 | Thuja plicata | Western red cedar | 5 | 30 | 9"-15" | 12" | |
| | Tsuga heterophylla | Western hemlock | 9 | | 3"-15" | 8" | |
| | Acer macrophyllum | Big leaf maple | 16 | | 8"-20" | 11" | |
| | | | | | | | |
| Plot 22 | Pseudotsuga menziesii | Douglas fir | 8 | 45 | 10"-36" | 19" | |
| | Acer macrophyllum | Big leaf maple | 16 | | 8"-17" | 13.5" | |
| | Thuja plicata | Western red cedar | 2 | | 5"-6" | 5.5" | |
| | Tsuga heterophylla | Western hemlock | 19 | | 2"-10" | 7" | |
| | | | | | | | |
| Plot 23 | Pseudotsuga menziesii | Douglas fir | 8 | 44 | 12"-27" | 15" | |
| | Acer macrophyllum | Big leaf maple | 12 | | 8"-20" | 16" | |
| | Thuja plicata | Western red cedar | 19 | | 3"-7" | 5" | |
| | Tsuga heterophylla | Western hemlock | 5 | | 3"-5" | 5" | |
| | | | | | | | |
| Plot 24 | Pseudotsuga menziesii | Douglas fir | 14 | 35 | 5"-24" | 12" | |
| | Tsuga heterophylla | Western hemlock | 18 | | 5"-9" | 6" | |
| | Acer macrophyllum | Big leaf maple | 3 | | 10"-13" | 11" | |
| | | | | | | | |
| Plot 25 | Acer macrophyllum | Big leaf maple | 3 | 30 | 9"-25" | 16.5" | |
| | Tsuga heterophylla | Western hemlock | 11 | | 3"-7" | 5" | |
| | Pseudotsuga menziesii | Douglas fir | 15 | | 8"-20" | 13" | |
| | Thuja plicata | Western red cedar | 1 | | 8" | 8" | |
| | | | | | | | |

**Table of Trees
Cedar River Natural Area**

| Cedar River | Scientific Name | Common name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|-------------|---------------------|-------------------|-----------------|------------------|-----------|-------------|-------|
| Plot 26 | Populus trichocarpa | Cottonwood | 12 | 16 | 5"-24" | 17" | |
| | Thuja plicata | Western red cedar | 3 | | 3"-8" | 4.5" | |
| | Acer macrophyllum | Big leaf maple | 1 | | 12" | | |
| Plot 27 | Acer macrophyllum | Big leaf maple | 21 | 24 | 2"-28" | 13" | |
| | Populus trichocarpa | Cottonwood | 3 | | 22"-30" | 16" | |

| Summary | |
|------------------------------------|--------|
| Total Number of Trees Counted | 618 |
| Average Number of Trees per Plot | 22.9 |
| Projected Number of Trees per Acre | 229 |
| Acreage of Natural Area | 237 |
| Projected Number of Trees in Area | 54,247 |
| Approx. Wooded Area (%) | 37,973 |

| By Species | Total | % of Total | Proj. Number of Trees by Species |
|-----------------------|-------|------------|----------------------------------|
| Acer macrophyllum | 296 | 47.9% | 25,982 |
| Acer circinatum | 2 | 0.3% | 176 |
| Alnus oregona | 62 | 10.0% | 5,442 |
| Populus trichocarpa | 35 | 5.7% | 3,072 |
| Pseudotsuga menziesii | 58 | 94.0% | 5,091 |
| Salix species | 1 | 0.2% | 88 |
| Tsuga heterophylla | 121 | 19.6% | 10,621 |
| Thuja plicata | 43 | 7.0% | 3,774 |



City of Renton Tree Inventory and Assessment Report

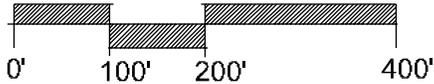
**Table of Trees
Cleveland Park (Undeveloped)**

| Cleveland Park | Scientific Name | Common name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|----------------|------------------------------|-------------------|-----------------|------------------|-----------|-------------|--|
| Plot 1 | <i>Alnus oregona</i> | Red alder | 7 | 8 | 11"-29" | 20" | Only 6 plots, prevented access by electric fences. |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 1 | | 29" | 29" | |
| Plot 2 | <i>Pseudotsuga menziesii</i> | Douglas fir | 4 | 9 | 20"-35" | 28" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 5 | | 6"-30" | 19" | |
| Plot 3 | <i>Alnus oregona</i> | Red alder | 12 | 12 | 4"-8" | 6" | |
| Plot 4 | <i>Alnus oregona</i> | Red alder | 28 | 28 | 7"-16" | 7" | |
| Plot 5 | <i>Acer macrophyllum</i> | Big leaf maple | 1 | 21 | 40" | 40" | |
| | <i>Alnus oregona</i> | Red alder | 20 | | 4"-12" | 8" | |
| Plot 6 | <i>Pseudotsuga menziesii</i> | Douglas fir | 10 | 18 | 8"-24" | 16" | |
| | <i>Thuja Plicata</i> | Western red cedar | 4 | | 6"-11" | 8.5" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 2 | | 8"-10" | 9" | |
| | <i>Ilex opaca</i> | Holly | 1 | | 4" | 4" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 1 | | 16" | 16" | |

**Table of Trees
Cleveland Park (Undeveloped)**

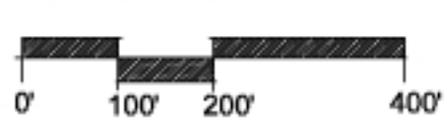
| <u>Summary</u> | | |
|------------------------------------|------|-------|
| Total Number of Trees Counted | | 96 |
| Average Number of Trees per Plot | | 16.0 |
| Projected Number of Trees per Acre | | 160 |
| Acreage of Natural Area | 23.7 | |
| Projected Number of Trees in Area | | 3,792 |
| Approx. Wooded Area (%) | 50 | 1,896 |

| <u>By Species</u> | Total in Count | Percent of Total | Projected Number of Trees by Species |
|------------------------------|----------------|------------------|--------------------------------------|
| <i>Acer macrophyllum</i> | 8 | 8.3% | 316 |
| <i>Alnus oregona</i> | 67 | 69.8% | 2,647 |
| <i>Ilex opaca</i> | 1 | 1.0% | 40 |
| <i>Pseudotsuga menziesii</i> | 15 | 15.6% | 593 |
| <i>Tsuga heterophylla</i> | 1 | 1.0% | 40 |
| <i>Thuja plicata</i> | 4 | 4.2% | 158 |



 May Creek Park

City of Renton
 Tree Inventory and Assessment Report



 Springbrook Watershed/Watershed Park

City of Renton Tree Inventory and Assessment Report

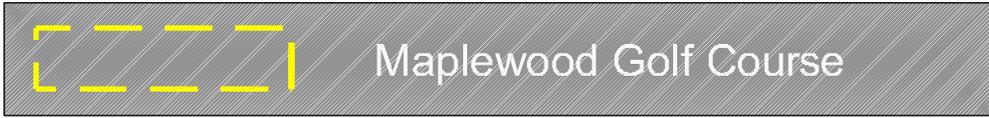
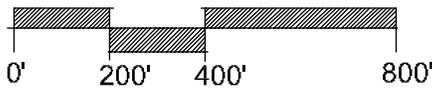
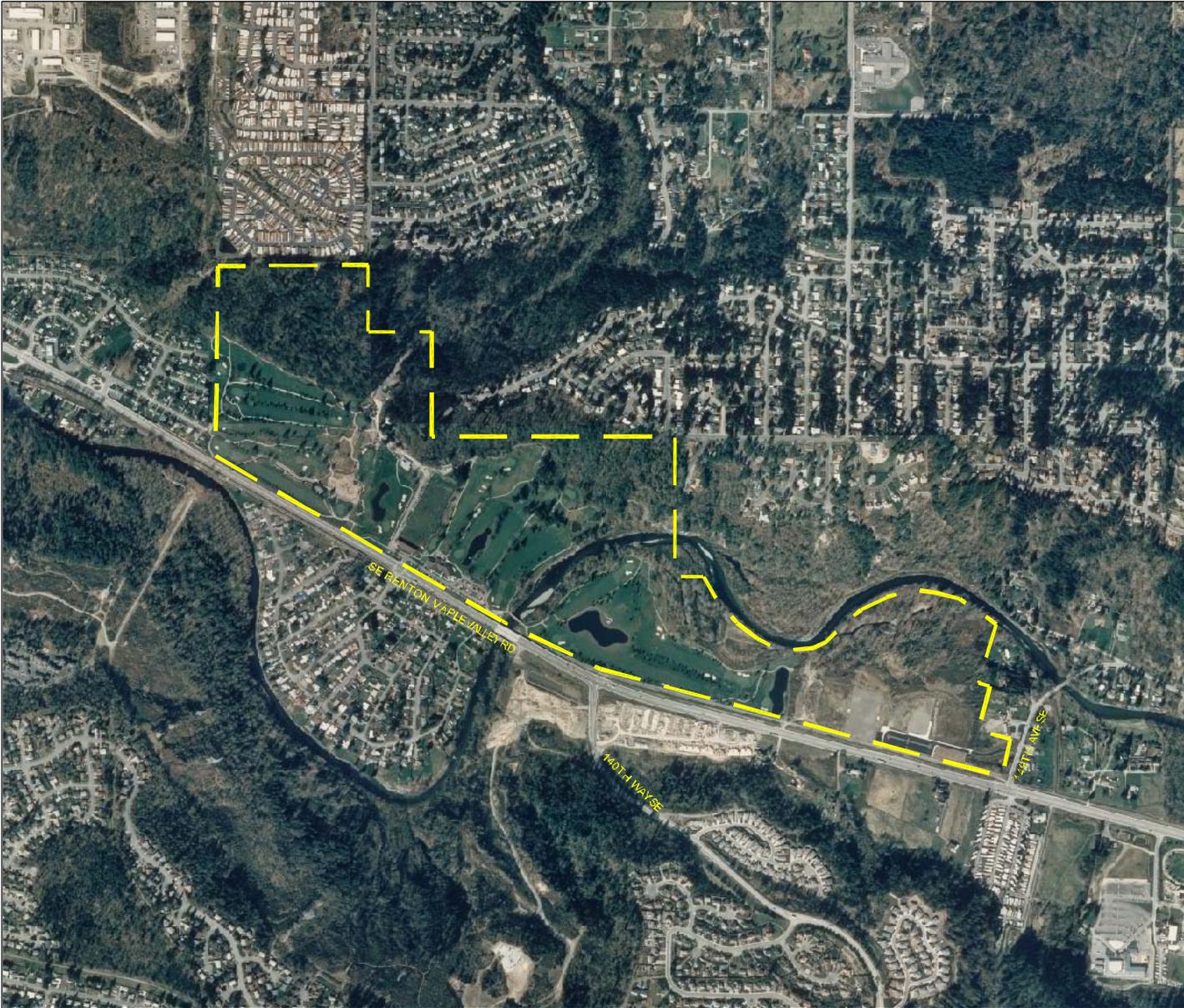
**Table of Trees
Springbrook-WatershedPark**

| Spring Creek Watershed | Scientific name | Common name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|------------------------|-------------------------------|-------------------|-----------------|------------------|-----------|-------------|-------|
| Plot 1 | <i>Acer macrophyllum</i> | Big leaf maple | 8 | 11 | 4"-23" | 12" | |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 2 | | 14"- 41" | 27.5" | |
| | <i>Thuja plicata</i> | Western red cedar | 1 | | 12" | 12" | |
| Plot 2 | <i>Alnus oregona</i> | Red alder | 6 | 16 | 4"-10" | 7" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 1 | | 21" | 21" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 8 | | 4"-8" | 6" | |
| Plot 3 | <i>Thuja plicata</i> | Western red cedar | 1 | | 12" | 12" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 1 | 14 | 5" | 5" | |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 6 | | 10"-16" | 19" | |
| Plot 4 | <i>Populus trichocarpa</i> | Cottonwood | 2 | | 5"-6" | 5.5" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 4 | | 5"-23" | 15.5" | |
| | <i>Alnus oregona</i> | Red alder | 1 | | 20" | 20" | |
| Plot 5 | <i>Pseudotsuga menziesii</i> | Douglas fir | 12 | 27 | 8"-24" | 17.5" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 13 | | 3"-22" | 9" | |
| | <i>Ilex opaca</i> | Holly | 1 | | 4" | 4" | |
| Plot 6 | <i>Thuja plicata</i> | Western red cedar | 1 | | 8" | 8" | |
| | <i>Acer macrophyllum</i> | Douglas fir | 10 | 13 | 4"-20" | 12" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 1 | | 33" | 33" | |
| Plot 7 | <i>Alnus oregona</i> | Red alder | 2 | | 4"-16" | 10" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 2 | 7 | 17"-29" | 23" | |
| | <i>Alnus oregona</i> | Red alder | 4 | | 6"-20" | 15" | |
| Plot 8 | <i>Pseudotsuga menziesii</i> | Douglas fir | 1 | | 20" | 20" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 21 | 42 | 9"-20" | 14" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 6 | | 4"-20" | 10" | |
| Plot 9 | <i>Pseudotsuga menziesii</i> | Douglas fir | 10 | | 3"-38" | 13" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 5 | | 3"-5" | 4" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 12 | 34 | 4"-12" | 8" | |
| Plot 10 | <i>Tsuga heterophylla</i> | Western hemlock | 13 | | 3"-4" | 3.5" | |
| | <i>Aesculus hippocastanum</i> | Horse chestnut | 1 | | 3" | 3" | |
| | <i>Alnus oregona</i> | Red alder | 2 | | 4" | 4" | |

**Table of Trees
Springbrook-WatershedPark**

| Spring Creek Watershed | Scientific name | Common name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|------------------------|------------------------------|----------------|-----------------|------------------|-----------|-------------|-------|
| | <i>Acer macrophyllum</i> | Big leaf maple | 6 | | 3"-15" | 6" | |
| Plot 9 | <i>Acer macrophyllum</i> | Big leaf maple | 11 | 13 | 6"-25" | 17" | |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 2 | | 15" | 15" | |
| Plot 10 | <i>Populus trichocarpa</i> | Cottonwood | 17 | 26 | 6"-20" | 13" | |
| | <i>Alnus oregona</i> | Red alder | 4 | | 4"-5" | 5" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 4 | | 4"-9" | 5.5" | |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 1 | | 3" | 3" | |

| Summary | | Total in Count | Percent of Total | Projected Number of Trees by Species |
|-------------------|------------------------------------|----------------|------------------|--------------------------------------|
| | Total Number of Trees Counted | | 203 | |
| | Average Number of Trees per Plot | | 20.3 | |
| | Projected Number of Trees per Acre | | 203 | |
| | Acreage of Natural Area | 54 | | |
| | Projected Number of Trees in Area | 80 | 10,962 | |
| | Approx. Wooded Area (%) | 80 | 8,770 | |
| By Species | | Total in Count | Percent of Total | Projected Number of Trees by Species |
| | <i>Acer macrophyllum</i> | 72 | 35.5% | 3,888 |
| | <i>Aesculus hippocastanum</i> | 1 | 0.5% | 54 |
| | <i>Alnus oregona</i> | 19 | 9.4% | 1,026 |
| | <i>Ilex opaca</i> | 1 | 0.5% | 54 |
| | <i>Populus trichocarpa</i> | 54 | 26.6% | 2,916 |
| | <i>Pseudotsuga menziesii</i> | 34 | 16.7% | 1,836 |
| | <i>Tsuga heterophylla</i> | 19 | 9.4% | 1,026 |
| | <i>Thuja Plicata</i> | 3 | 1.5% | 162 |



City of Renton
Tree Inventory and Assessment Report

**Table of Trees
Maplewood Golf Course**

| Maplewood Golf Course | Scientific Name | Common Name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|-----------------------|------------------------------|---------------------|-----------------|------------------|-----------|-------------|--------------------------------------|
| Plot 1 | <i>Tsuga heterophylla</i> | Western hemlock | 1 | 21 | 24" | 24" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 15 | | 4"-24" | 12" | |
| | <i>Thuja plicata</i> | Western red cedar | 3 | | 18"-33" | 24" | |
| | <i>Acer circinatum</i> | Vine maple | 1 | | 2" | 2" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 1 | | 28" | 28" | |
| Plot 2 | <i>Acer macrophyllum</i> | Big leaf maple | 15 | 30 | 12"-24" | 18" | |
| | <i>Acer circinatum</i> | Vine maple | 7 | | 3" | 3" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 7 | | 8"-18" | 11" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 1 | | 27" | 27" | |
| Plot 3 | <i>Acer macrophyllum</i> | Big leaf maple | 17 | 53 | 3"-20" | 9" | |
| | <i>Prunus virginiana</i> | Choke cherry | 6 | | 3"-8" | 5" | |
| | <i>Alnus oregona</i> | Red alder | 17 | | 3"-7" | 5" | |
| | <i>Corylus cornuta</i> | California hazelnut | 12 | | 2" | 2" | |
| | <i>Salix species</i> | Willow | 1 | | 4" | | |
| Plot 4 | <i>Acer macrophyllum</i> | Big leaf maple | 23 | 51 | 4"-28" | 20" | |
| | <i>Thuja plicata</i> | Western red cedar | 26 | | 3"-23" | 7" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 1 | | 10' | 10" | |
| | <i>Corylus cornuta</i> | California hazelnut | sporadic | | | 2" | "sporadic" = a small number of trees |
| | <i>Acer circinatum</i> | Vine maple | 1 | | 4" | | less than 3"DBH |
| Plot 5 | <i>Acer macrophyllum</i> | Big leaf maple | 17 | 37 | 2"-35" | 20" | |
| | <i>Thuja plicata</i> | Western red cedar | 19 | | 3"-18" | 7" | |
| | <i>Acer circinatum</i> | Vine maple | sporadic | | | 2" | |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 1 | | 18" | 18" | |
| Plot 6 | <i>Acer macrophyllum</i> | Big leaf maple | 10 | 39 | 4"-24" | 17" | |
| | <i>Thuja plicata</i> | Western red cedar | 20 | | 6"-20" | 12" | |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 9 | | 9"-29" | 16" | |
| Plot 7 | <i>Acer macrophyllum</i> | Big leaf maple | 19 | 71 | 3"-20" | 12" | |
| | <i>Thuja plicata</i> | Western red cedar | 28 | | 3"-28" | 10" | |
| | <i>Corylus cornuta</i> | California hazelnut | moderate | | 2" | 2" | |

**Table of Trees
Maplewood Golf Course**

| | | | | | | |
|---------|------------------------------|---------------------|----------|----|---------|-----|
| | <i>Alnus oregona</i> | Red alder | 5 | | 3"-14" | 7" |
| | <i>Salix species</i> | Willow | 15 | | 3"-4" | 3" |
| | <i>Prunus emarginata</i> | Cherry | 3 | | 3" | 3" |
| | <i>Populus trichocarpa</i> | Cottonwood | 1 | | 13" | 13" |
| | | | | | | |
| Plot 8 | <i>Acer macrophyllum</i> | Big leaf maple | 17 | 36 | 3"-15" | 9" |
| | <i>Thuja plicata</i> | Western red cedar | 5 | | 3"-7" | 5" |
| | <i>Populus trichocarpa</i> | Cottonwood | 4 | | 12"-13" | 12" |
| | <i>Prunus emarginata</i> | Cherry | 6 | | 6"-10" | 8" |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 3 | | 20" | 20" |
| | <i>Alnus oregona</i> | Red alder | 1 | | 7" | 7" |
| | | | | | | |
| Plot 9 | <i>Acer macrophyllum</i> | Big leaf maple | 17 | 29 | 4"-21" | 11" |
| | <i>Alnus oregona</i> | Red alder | 4 | | 7" | 7" |
| | <i>Tsuga heterophylla</i> | Western hemlock | 2 | | 9"-14" | 11" |
| | <i>Prunus emarginata</i> | Cherry | 1 | | 15" | 15" |
| | <i>Corylus cornuta</i> | California hazelnut | sporadic | | | 2" |
| | <i>Thuja plicata</i> | Western red cedar | 1 | | 4" | |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 4 | | 9" | 9" |
| | | | | | | |
| Plot 10 | <i>Pseudotsuga menziesii</i> | Douglas fir | 5 | 27 | 5"-9" | 5" |
| | <i>Acer macrophyllum</i> | Big leaf maple | 4 | | 6"-20" | 16" |
| | <i>Thuja plicata</i> | Western red cedar | 8 | | 3"-21" | 9" |
| | <i>Tsuga heterophylla</i> | Western hemlock | 8 | | 3"-14" | 7" |
| | <i>Alnus oregona</i> | Red alder | 1 | | 4" | 4" |
| | <i>Salix species</i> | Willow | 1 | | 3" | 3" |
| | <i>Corylus cornuta</i> | California hazelnut | sporadic | | | 2" |

**Table of Trees
Maplewood Golf Course**

| Summary | | | |
|----------------|------------------------------------|-----------------------|---|
| | Total Number of Trees Counted | | 394 |
| | Average Number of Trees per Plot | | 39.4 |
| | Projected Number of Trees per Acre | | 394 |
| | Acreage of Natural Area | 80 | |
| | Projected Number of Trees in Area | | 31,520 |
| | Approx. Wooded Area (%) | 30 | 9,456 |
| | | Total in Count | Percent of Total |
| | By Species | | Projected Number of Trees by Species |
| | <i>Acer macrophyllum</i> | 154 | 12,320 |
| | <i>Acer circinatum</i> | 9 | 720 |
| | <i>Alnus oregona</i> | 28 | 2,240 |
| | <i>Corylus cornuta</i> | 12 | 960 |
| | <i>Populus trichocarpa</i> | 7 | 560 |
| | <i>Prunus emarginata</i> | 10 | 800 |
| | <i>Prunus virginiana</i> | 6 | 480 |
| | <i>Pseudotsuga menziesii</i> | 22 | 1,760 |
| | <i>Salix species</i> | 17 | 1,360 |
| | <i>Tsuga heterophylla</i> | 19 | 1,520 |
| | <i>Thuja Plicata</i> | 110 | 8,800 |

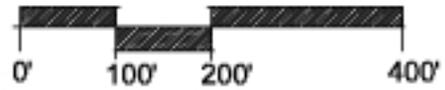
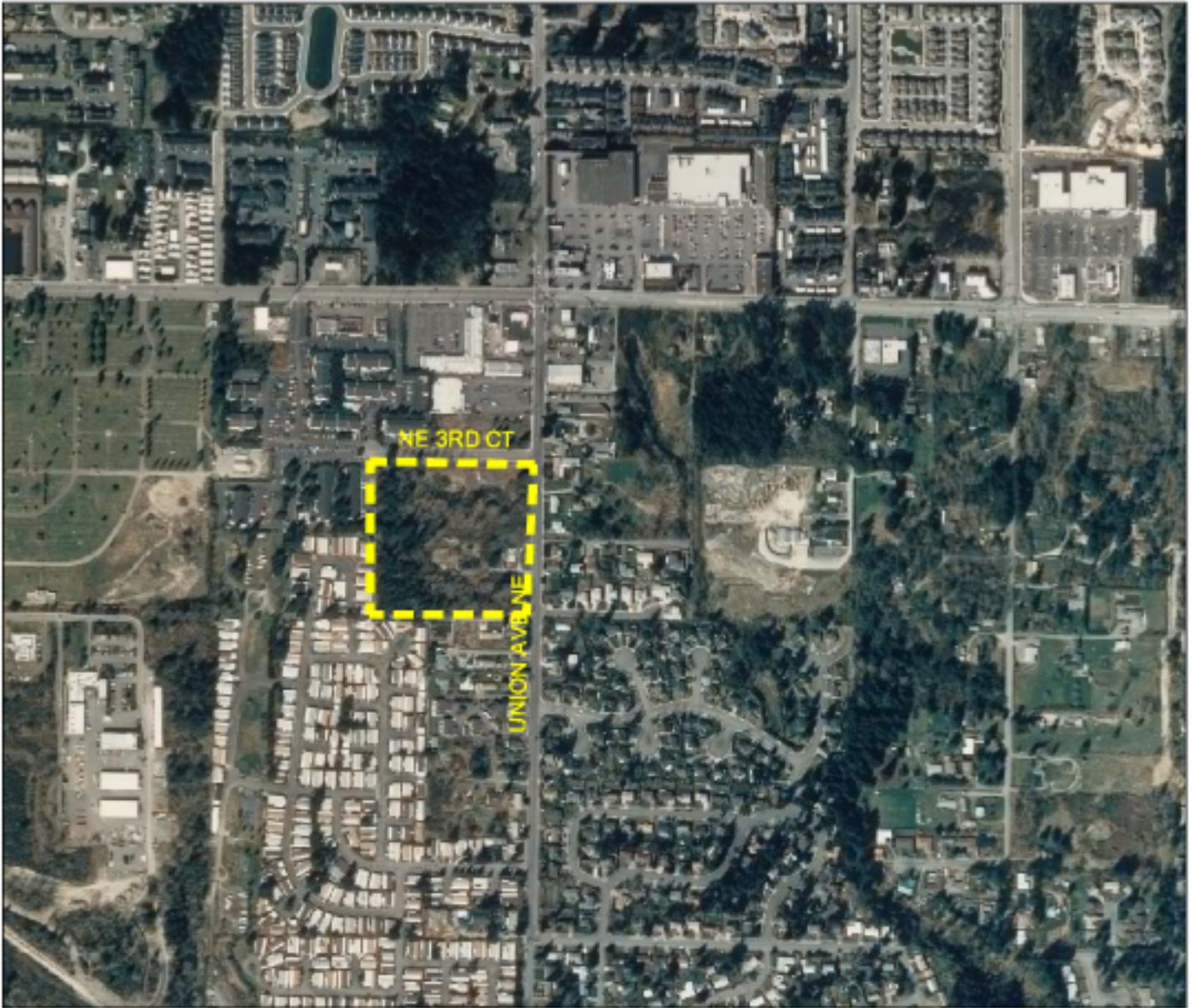
**Table of Trees
May Creek Open Space**

| May Creek | Scientific Name | Common Name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|-----------|-------------------------------|-------------------|-----------------|------------------|-----------|-------------|-------|
| Plot 1 | <i>Acer macrophyllum</i> | Big leaf maple | 5 | 13 | 11"-19" | 15" | |
| | <i>Alnus oregona</i> | Red alder | 7 | | 7"-15" | 11" | |
| | <i>Thuja plicata</i> | Western red cedar | 1 | | 20" | 20" | |
| Plot 2 | <i>Acer macrophyllum</i> | Big leaf maple | 2 | 13 | 3"-7" | 5" | |
| | <i>Alnus oregona</i> | Red alder | 5 | | 4"-8" | 6" | |
| | <i>Salix species</i> | Willow | 6 | | 4"-7" | 5.5" | |
| Plot 3 | <i>Populus trichocarpa</i> | Cottonwood | 3 | 17 | 20"-27" | 23.5" | |
| | <i>Alnus oregona</i> | Red alder | 9 | | 4"-12" | 8" | |
| | <i>Salix species</i> | Willow | 3 | | 4"-11" | 7.5" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 2 | | 4"-14" | 9" | |
| Plot 4 | <i>Alnus oregona</i> | Red alder | 32 | 33 | 3"-12" | 7.5" | |
| | <i>Aesculus hippocastanum</i> | Horse chestnut | 1 | | 15" | 15" | |
| Plot 5 | <i>Acer macrophyllum</i> | Big leaf maple | 3 | 8 | 3"-15" | 9" | |
| | <i>Alnus oregona</i> | Red alder | 5 | | 12"-17" | 14.5" | |
| Plot 6 | <i>Thuja plicata</i> | Western red cedar | 3 | 24 | 5"-7" | 6" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 3 | | 37"-44" | 40.5" | |
| | <i>Alnus oregona</i> | Red alder | 5 | | 9"-16" | 12.5" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 13 | | 8"-15" | 11.5" | |
| Plot 7 | <i>Alnus oregona</i> | Red alder | 10 | 21 | 7"-15" | 11" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 3 | | 6"-35" | 20.5" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 8 | | 4"-18" | 11" | |
| Plot 8 | <i>Populus trichocarpa</i> | Cottonwood | 8 | 10 | 6"-40" | 23" | |
| | <i>Alnus oregona</i> | Red alder | 2 | | 3"-17" | 10" | |
| Plot 9 | <i>Acer macrophyllum</i> | Big leaf maple | 14 | 17 | 3"-30" | 16.5" | |
| | <i>Alnus oregona</i> | Red alder | 1 | | 3" | 3" | |
| | <i>Thuja plicata</i> | Western red cedar | 2 | | 8" | 4" | |
| Plot 10 | <i>Pseudotsuga menziesii</i> | Douglas fir | 1 | 20 | 25" | 25" | |

**Table of Trees
May Creek Open Space**

| May Creek | Scientific Name | Common Name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|-----------|----------------------------|-------------------|-----------------|------------------|-----------|-------------|-------|
| | <i>Thuja plicata</i> | Western red cedar | 2 | | 12"-25" | 18.5" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 12 | | 7"-13" | 10" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 5 | | 15"-22" | 18.5" | |
| | | | | | | | |
| | | | | | | | |

| Summary | | | |
|----------------|------------------------------------|-----------------------|---|
| | Total Number of Trees Counted | | 176 |
| | Average Number of Trees per Plot | | 17.6 |
| | Projected Number of Trees per Acre | | 176 |
| | Acreage of Natural Area | 10 | |
| | Projected Number of Trees in Area | | 1,760 |
| | Approx. Wooded Area (%) | 60 | 1,056 |
| | | Total in Count | Percent of Total |
| | By Species | | Projected Number of Trees by Species |
| | <i>Acer macrophyllum</i> | 59 | 33.5% |
| | <i>Aesculus hippocastanum</i> | 1 | 0.6% |
| | <i>Alnus oregona</i> | 76 | 43.2% |
| | <i>Populus trichocarpa</i> | 22 | 12.5% |
| | <i>Pseudotsuga menziesii</i> | 1 | 0.6% |
| | <i>Salix species</i> | 9 | 5.1% |
| | <i>Thuja plicata</i> | 8 | 4.5% |



 Heritage Park

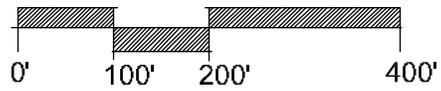
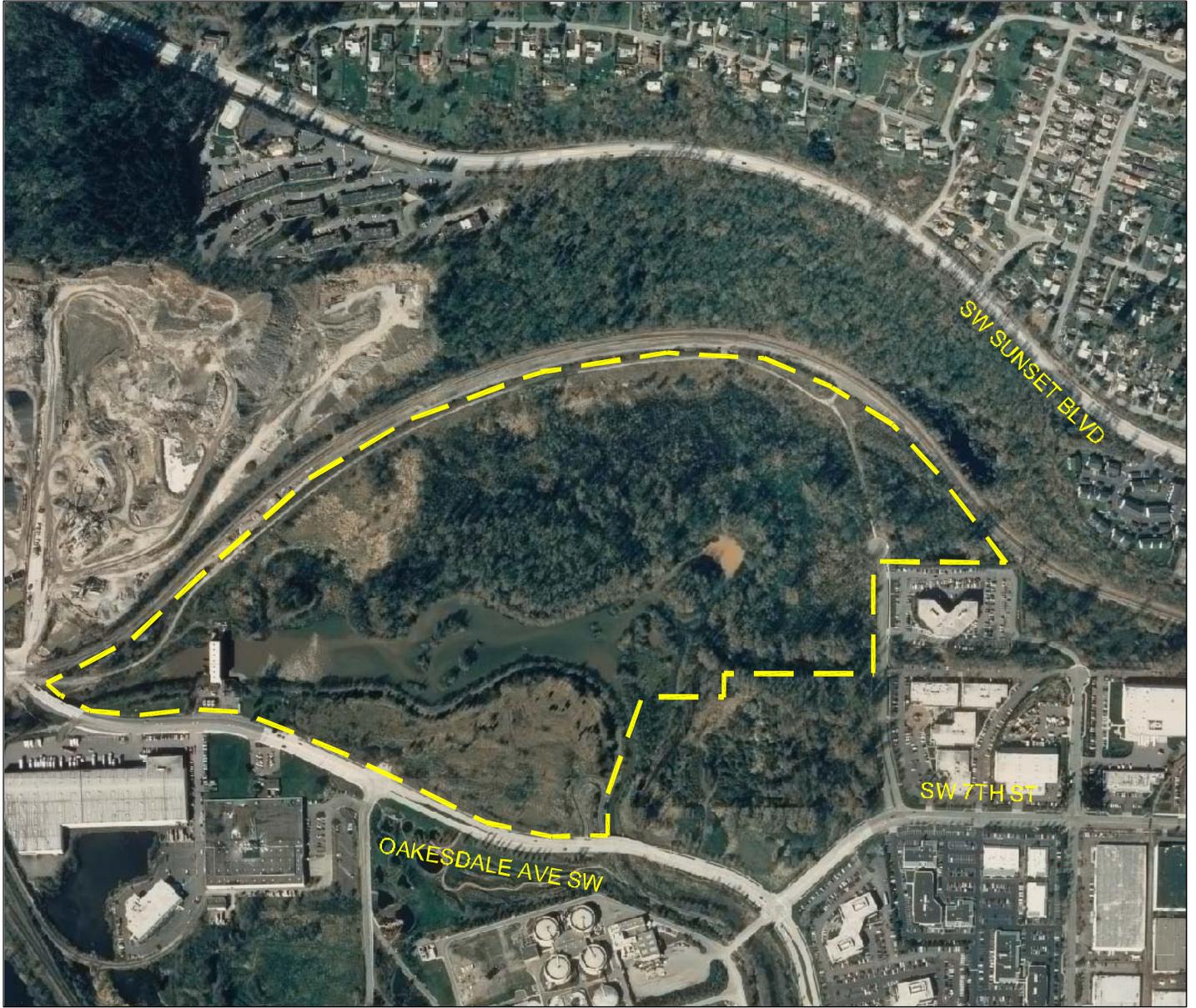
City of Renton Tree Inventory and Assessment Report

**Table of Trees
Heritage Park**

| Heather Downs | Scientific Name | Common Name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|---------------|------------------------------|-------------------|-----------------|------------------|-----------|-------------|--|
| Plot 1 | <i>Acer macrophyllum</i> | Big leaf maple | 11 | 15 | 6"-14" | 10" | Small area, restricted by blackberries 5 plots. |
| | <i>Alnus oregona</i> | Red alder | 3 | | 4"-19" | 11.5" | |
| | <i>Thuja plicata</i> | Western red cedar | 1 | | 27" | 27" | |
| Plot 2 | <i>Alnus oregona</i> | Red alder | 9 | 25 | 3"-14" | 8.5" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 15 | | 3"-17" | 12" | |
| | <i>Thuja plicata</i> | Western red cedar | 1 | | 5" | 5" | |
| | | | | | | | |
| Plot 3 | <i>Acer macrophyllum</i> | Big leaf maple | 10 | 28 | 12"-14" | 8" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 9 | | 4"- 39" | 21.5" | |
| | <i>Prunus emarginata</i> | Cherry | 6 | | 3"-8" | 5.5" | |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 3 | | 3"-8" | 5.5" | |
| | | | | | | | |
| | | | | | | | |
| Plot 4 | <i>Acer macrophyllum</i> | Big leaf maple | 1 | 4 | 6" | 6" | |
| | <i>Prunus emarginata</i> | Cherry | 2 | | 5"-8" | 6.5" | |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 1 | | 27" | 27" | |
| Plot 5 | <i>Pseudotsuga menziesii</i> | Douglas fir | 4 | 14 | 21"-32" | 26.5 | |
| | <i>Alnus oregona</i> | Red Alder | 10 | | 3"-8" | 5.5" | |

**Table of Trees
Heritage Park**

| | | | |
|-------------------|------------------------------------|-------------------------|---|
| Summary | | | |
| | Total Number of Trees Counted | | 86 |
| | Average Number of Trees per Plot | | 17.2 |
| | Projected Number of Trees per Acre | | 172 |
| | Acreage of Natural Area | 10.9 | |
| | Projected Number of Trees in Area | | 1,875 |
| | Approx. Wooded Area (%) | 70 | 1,312 |
| | Total in Count | Percent of Total | Projected Number of Trees by Species |
| By Species | | | |
| | <i>Acer macrophyllum</i> | 37 | 43.0% |
| | <i>Alnus oregona</i> | 22 | 25.6% |
| | <i>Populus trichocarpa</i> | 9 | 10.5% |
| | <i>Prunus emarginata</i> | 8 | 9.3% |
| | <i>Pseudotsuga menziesii</i> | 8 | 9.3% |
| | <i>Thuja plicata</i> | 2 | 2.3% |



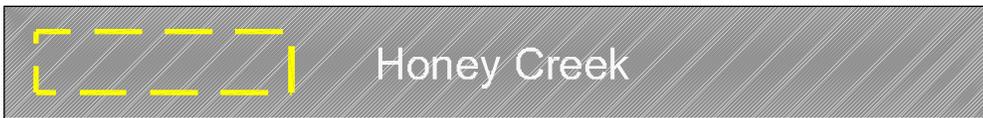
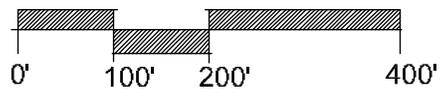
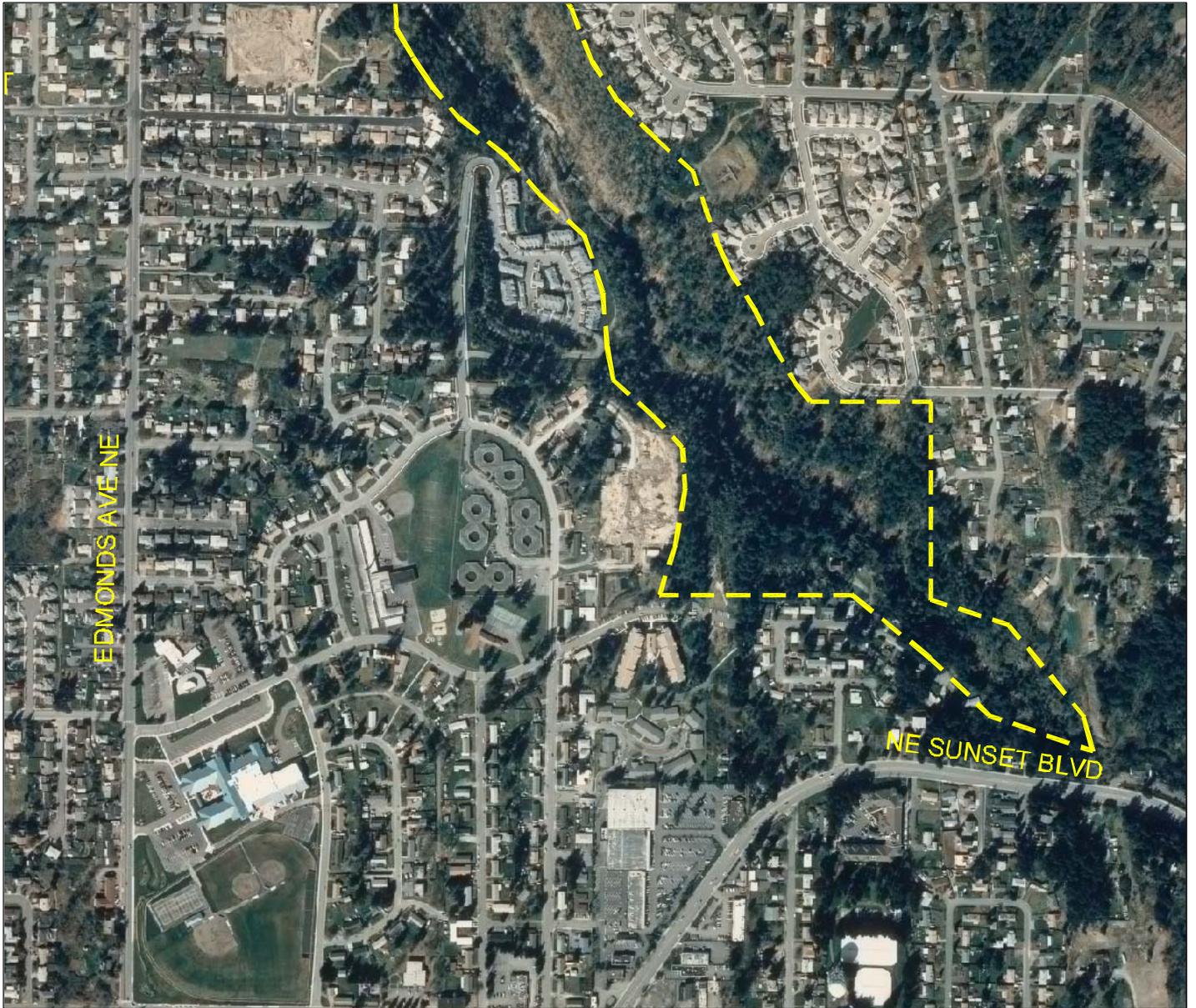
City of Renton
Tree Inventory and Assessment Report

Table of Trees
Black River Riparian Forest

| Black River | Scientific Name | Common Name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|-------------|------------------------------|-------------|-----------------|------------------|-----------|-------------|-------|
| Plot 1 | <i>Populus trichocarpa</i> | Cottonwood | 50 | 50 | 3"-12" | 7.5" | |
| Plot 2 | <i>Pinus species</i> | Pine | 1 | 2 | 17" | 17" | |
| | <i>Salix species</i> | Willow | 1 | | 5" | 5" | |
| Plot 3 | <i>Pseudotsuga menziesii</i> | Douglas fir | 4 | 34 | 6"-14" | 10" | |
| | <i>Laurus nobilis</i> | Laurel | 1 | | 4" | 4" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 27 | | 3"-22" | 8" | |
| | <i>Populus nigra</i> | Poplar | 2 | | 7"-10" | 8.5" | |
| Plot 4 | <i>Pseudotsuga menziesii</i> | Douglas fir | 4 | 16 | 6" | 6" | |
| | <i>Populus trichocarpa</i> | Cottonwood | 9 | | 9"-16" | 12.5" | |
| | <i>Pinus species</i> | Pine | 3 | | 8" | 8" | |
| Plot 5 | <i>Populus trichocarpa</i> | Cottonwood | 36 | 36 | 3"-56" | 13" | |
| Plot 6 | <i>Fraxinus latifolia</i> | Ash | 3 | 3 | 3"-5" | 4" | |
| Plot 7 | <i>Alnus oregona</i> | Red alder | 40 | 40 | 3"-11" | 7" | |
| Plot 8 | <i>Populus trichocarpa</i> | Cottonwood | 8 | 13 | 5"-39" | 13" | |
| | <i>Fraxinus latifolia</i> | Ash | 4 | | 3"-15" | 9" | |
| | <i>Alnus oregona</i> | Red alder | 1 | | 11" | 11" | |
| Plot 9 | <i>Populus trichocarpa</i> | Cottonwood | 23 | 32 | 3"-13" | 8" | |
| | <i>Salix species</i> | Willow | 9 | | 4"-8" | 6" | |
| Plot 10 | <i>Populus trichocarpa</i> | Cottonwood | 25 | 25 | 3"-6" | 4.5" | |

**Table of Trees
Black River Riparian Forest**

| | | | |
|------------------------------------|-----------------------|-------------------------|---|
| Summary | | | |
| Total Number of Trees Counted | | | 251 |
| Average Number of Trees per Plot | | | 25.1 |
| Projected Number of Trees per Acre | | | 251 |
| Acreage of Natural Area | 92 | | |
| Projected Number of Trees in Area | | 23,092 | |
| Approx. Wooded Area (%) | 60 | 13,855 | |
| | Total in Count | Percent of Total | Projected Number of Trees by Species |
| By Species | | | |
| <i>Alnus oregona</i> | 41 | 16.3% | 3,772 |
| <i>Fraxinus latifolia</i> | 7 | 2.8% | 644 |
| <i>Laurus nobilis</i> | 1 | 0.4% | 92 |
| <i>Pinus species</i> | 4 | 1.6% | 368 |
| <i>Populus nigra</i> | 2 | 0.8% | 184 |
| <i>Populus trichocarpa</i> | 178 | 70.9% | 16,376 |
| <i>Pseudotsuga menziesii</i> | 8 | 3.2% | 736 |
| <i>Salix species</i> | 10 | 4.0% | 920 |



City of Renton Tree Inventory and Assessment Report

**Table of Trees
Honey Creek Open Space**

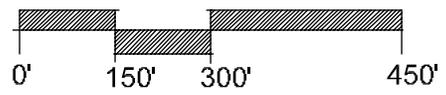
| Honey Creek | Scientific Name | Common Name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|-------------|------------------------------|---------------------|-----------------|------------------|-----------|-------------|-------|
| Plot 1 | <i>Pseudotsuga menziesii</i> | Douglas fir | 16 | 32 | 7"-28" | 13" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 2 | | 4"-6" | 5" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 4 | | 4"-12" | 9" | |
| | <i>Prunus emarginata</i> | Cherry | 1 | | 3" | 3" | |
| | <i>Corylus cornuta</i> | California hazelnut | 2 | | 3"-5" | 4" | |
| | <i>Acer circinatum</i> | Vine maple | 1 | | 3" | 3" | |
| | <i>Arbutus menziesii</i> | Madrone | 2 | | 14"-18" | 16" | |
| | <i>Thuja plicata</i> | Western red cedar | 4 | | 3"-5" | 4" | |
| | | | | | | | |
| Plot 2 | <i>Acer macrophyllum</i> | Big leaf maple | 16 | 21 | 3"-14" | 12" | |
| | <i>Alnus oregona</i> | Red alder | 1 | | 5" | 5" | |
| | <i>Corylus cornuta</i> | California hazelnut | 1 | | 3" | 3" | |
| | <i>Thuja plicata</i> | Western red cedar | 3 | | 5"-18" | 11" | |
| | | | | | | | |
| Plot 3 | <i>Pseudotsuga menziesii</i> | Douglas fir | 12 | 24 | 12"-28" | 12" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 8 | | 2"-8" | 6" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 2 | | 4"-5" | 4.5" | |
| | <i>Alnus oregona</i> | Red alder | 2 | | 7"-8" | 7.5" | |
| | | | | | | | |
| Plot 4 | <i>Pseudotsuga menziesii</i> | Douglas fir | 4 | 19 | 6"-19" | 13" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 6 | | 7"-12" | 9" | |
| | <i>Alnus oregona</i> | Red alder | 8 | | 11"-23" | 19" | |
| | <i>Thuja plicata</i> | Western red cedar | 1 | | 5" | 5" | |
| | | | | | | | |
| Plot 5 | <i>Acer macrophyllum</i> | Big leaf maple | 6 | 19 | 6"-25" | 16.8" | |
| | <i>Thuja plicata</i> | Western red cedar | 4 | | 3"-30" | 10" | |
| | <i>Acer circinatum</i> | Vine maple | 4 | | 3"-4" | 3.25" | |
| | <i>Alnus oregona</i> | Red alder | 2 | | 3"-7" | 5" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 3 | | 4" | 4" | |
| | | | | | | | |
| Plot 6 | <i>Populus balsamifera</i> | Poplar | 9 | 49 | 12"-24" | 20" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 32 | | 3"-6" | 5" | |
| | <i>Alnus oregona</i> | Red alder | 6 | | 6"-13" | 9" | |
| | <i>Thuja plicata</i> | Western red cedar | 1 | | 6" | 6" | |
| | <i>Acer circinatum</i> | Vine maple | 1 | | 4" | 4" | |
| | | | | | | | |

**Table of Trees
Honey Creek Open Space**

| Honey Creek | Scientific Name | Common Name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|-------------|------------------------------|-------------------|-----------------|------------------|-----------|-------------|-------|
| Plot 7 | <i>Acer macrophyllum</i> | Big leaf maple | 3 | 8 | 28"-30" | 29" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 2 | | 8"-15" | 11.5" | |
| | <i>Acer circinatum</i> | Vine maple | 1 | | 4" | 4" | |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 1 | | 17" | 17" | |
| | <i>Alnus oregona</i> | Red alder | 1 | | 16" | 16" | |
| Plot 8 | <i>Pseudotsuga menziesii</i> | Douglas fir | 9 | 15 | 4"-22" | 16" | |
| | <i>Acer macrophyllum</i> | Big leaf maple | 3 | | 3"-20" | 10" | |
| | <i>Tsuga heterophylla</i> | Western hemlock | 2 | | 3"-9" | 6" | |
| | <i>Thuja plicata</i> | Western red cedar | 1 | | 5" | 5" | |
| | | | | | | | |
| Plot 9 | <i>Acer macrophyllum</i> | Big leaf maple | 15 | 32 | 3"-6" | 10" | |
| | <i>Acer circinatum</i> | Vine maple | 2 | | 3" | 3" | |
| | <i>Alnus oregona</i> | Red alder | 8 | | 4"-10" | 7" | |
| | <i>Thuja plicata</i> | Western red cedar | 5 | | 2"-9" | 12" | |
| | <i>Pseudotsuga menziesii</i> | Douglas fir | 2 | | 5"-6" | 5.5" | |
| Plot 10 | <i>Pseudotsuga menziesii</i> | Douglas fir | 20 | 23 | 7"-28" | 21" | |
| | <i>Thuja plicata</i> | Western red cedar | 2 | | 3"-8" | 5.5" | |
| | <i>Alnus oregona</i> | Red alder | 1 | | 14" | 14" | |

**Table of Trees
Honey Creek Open Space**

| Summary | | | |
|----------------|------------------------------------|-----------------------|---|
| | Total Number of Trees Counted | | 242 |
| | Average Number of Trees per Plot | | 24.2 |
| | Projected Number of Trees per Acre | | 242 |
| | Acreage of Natural Area | 35.7 | |
| | Projected Number of Trees in Area | 85 | 8,639 |
| | Approx. Wooded Area (%) | | 7,343 |
| | | Total in Count | Percent of Total |
| | By Species | | Projected Number of Trees by Species |
| | <i>Acer macrophyllum</i> | 93 | 38.4% |
| | <i>Acer circinatum</i> | 9 | 3.7% |
| | <i>Arbutus menziesii</i> | 2 | 0.8% |
| | <i>Alnus oregona</i> | 29 | 12.0% |
| | <i>Corylus cornuta</i> | 4 | 1.7% |
| | <i>Populus balsamifera</i> | 9 | 3.7% |
| | <i>Pseudotsuga menziesii</i> | 64 | 26.4% |
| | <i>Tsuga heterophylla</i> | 11 | 4.5% |
| | <i>Thuja plicata</i> | 21 | 8.7% |



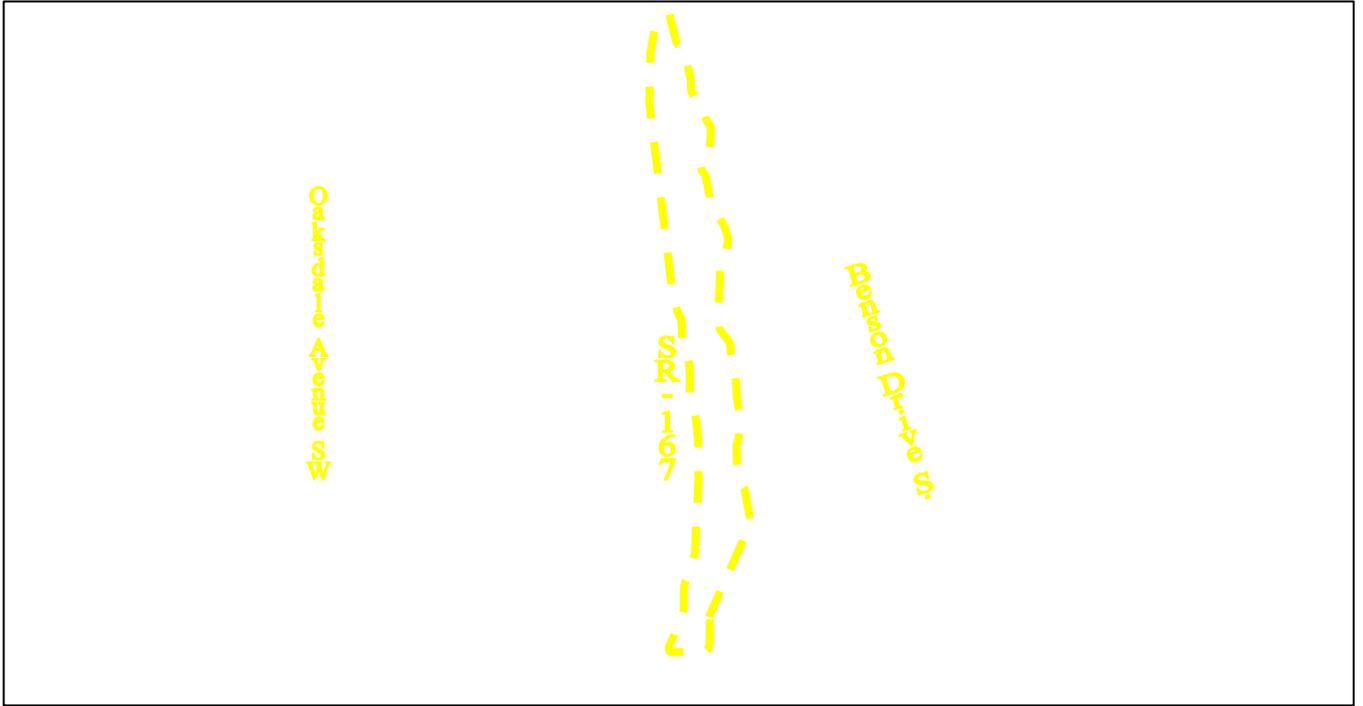
City of Renton Tree Inventory and Assessment Report

**Table of Trees
Renton Wetlands**

| Renton Wetlands | Scientific Name | Common Name | Number of trees | Subtotal By Plot | DBH Range | Average DBH | Notes |
|------------------------|------------------------------|--------------------|------------------------|-------------------------|------------------|--------------------|--------------------------------|
| Plot 1 | <i>Populus trichocarpa</i> | Cottonwood | 13 | 21 | 6"-19" | 8" | Edge of open area, near street |
| | <i>Salix species</i> | Willow | 8 | | 4"-7" | 5.5" | |
| Plot 2 | <i>Populus trichocarpa</i> | Cottonwood | 10 | 10 | 6"-19" | 8" | Dense area |
| Plot 3 | <i>Populus trichocarpa</i> | Cottonwood | 30 | 30 | 4"-18" | 8" | Dense area |
| Plot 4 | <i>Salix species</i> | Willow | 13 | 13 | 3"-13" | 5" | |
| Plot 5 | <i>Alnus oregona</i> | Alder | 4 | 4 | 6"-9" | 7.5" | |
| Plot 6 | <i>Populus trichocarpa</i> | Cottonwood | 2 | 12 | 9"-13" | 11" | |
| | <i>Salix species</i> | Willow | 10 | | 3"-6" | 4.5" | |
| Plot 7 | <i>Populus trichocarpa</i> | Cottonwood | 15 | 15 | 1"-2" | 1.5" | Pedestrian path |
| Plot 8 | <i>Pinus species</i> | Pine | 1 | 6 | 14" | 14" | Pedestrian path |
| | <i>Cedrus deodara</i> | Cedar | 3 | | 3"-15" | 9" | |
| | <i>Platanus acerifolia</i> | London Plane | 1 | | 14" | 14" | |
| | <i>Pseudotsuga menziesii</i> | Douglas Fir | 1 | | 16" | 16" | |
| Plot 9 | <i>Populus trichocarpa</i> | Cottonwood | 5 | 7 | 5"-34" | 18" | Dense area |
| | <i>Prunus emarginata</i> | Cherry | 2 | | 2"-4" | 3" | |
| Plot 10 | <i>Salix species</i> | Willow | 13 | 13 | 6"-13" | 7" | Edge of open area |

**Table of Trees
Renton Wetlands**

| Summary | | | |
|----------------|------------------------------------|-----------------------|---|
| | Total Number of Trees Counted | | 131 |
| | Average Number of Trees per Plot | | 13.1 |
| | Projected Number of Trees per Acre | | 131 |
| | Acreage of Natural Area | 125 | |
| | Projected Number of Trees in Area | | 16,375 |
| | Approx. Wooded Area (%) | 25 | 4,094 |
| | | Total in Count | Percent of Total |
| | By Species | | Projected Number of Trees by Species |
| | <i>Alnus oregona</i> | 4 | 500 |
| | <i>Cedrus deodara</i> | 3 | 375 |
| | <i>Pinus species</i> | 1 | 125 |
| | <i>Platanus acerifolia</i> | 1 | 125 |
| | <i>Populus trichocarpa</i> | 75 | 9,375 |
| | <i>Prunus emarginata</i> | 2 | 250 |
| | <i>Pseudotsuga menziesii</i> | 1 | 125 |
| | <i>Salix species</i> | 44 | 5,500 |



No Scale



Panther Creek Wetlands

City of Renton
 Tree Inventory and Assessment Report

**Table of Trees
Panther Creek Wetlands**

| Species | Trees/Acre | Adjusted Acres | Total | Parcel Number | Total Acres | % Wooded | Adj. Acres |
|--------------------|------------|----------------|-------|---------------|-------------|----------|------------|
| Bigleaf Maple | 126 | 23.7 | 2986 | 3340400995 | 0.14 | 0.1 | 0.014 |
| Vine Maple | 3 | 23.7 | 71 | 3340401010 | 0.58 | 0.3 | 0.174 |
| Alder | 73 | 23.7 | 1730 | 3340401020 | 2.45 | 0.4 | 0.980 |
| Cottonwood | 82 | 23.7 | 1943 | 3340401065 | 0.34 | 0 | 0 |
| Douglas Fir | 38 | 23.7 | 901 | 3340401076 | 0.25 | 0 | 0 |
| Willows | 10 | 23.7 | 237 | 3340401075 | 2.97 | 0.1 | 0.297 |
| W. Redcedar | 29 | 23.7 | 687 | 1923059016 | 19.4 | 0.5 | 9.695 |
| Oregon Ash | 2 | 23.7 | 47 | 3023059002 | 10.5 | 0.1 | 1.046 |
| Bay Laurel | 1 | 23.7 | 24 | 3023059076 | 5.37 | 0.95 | 5.101 |
| Pines | 1 | 23.7 | 24 | 3023059003 | 4.13 | 0 | 0.000 |
| Holly | 1 | 23.7 | 24 | 3023059004 | 6.24 | 0.25 | 1.560 |
| Beaked Filbert | 2 | 23.7 | 47 | 3023059119 | 2.73 | 0.1 | 0.273 |
| Bitter Cherry | 2 | 23.7 | 47 | 3023059062 | 6.47 | 0.1 | 0.647 |
| Common Chokecherry | 1 | 23.7 | 24 | 3023059124 | 1.75 | 0.1 | 0.175 |
| Totals | 371 | 23.7 | 8793 | 3023059026 | 72.53 | 0.4 | 3.704 |
| | | | | Totals | | 3.4 | 23.7 |

72.53 Acre Total (34% wooded)

Panther Creek Wetlands inventory was determined from the averages of other areas and quantities multiplied by the adjusted acres.

Maintenance Recommendation

The table on Page 68 displays information about costs to perform the maintenance tasks prescribed by evaluators in 2003. Because evaluators made hurried assessments and the data fields were limited, some assumptions have been made in the Maintenance Task Expenditure table to adjust the tasks and associated costs to “real-world” conditions. An evaluator listed a tree within a specific category, but the tree may require other work. Most of this other work is pruning either for clearance, to remove dead and diseased branches, for structure, or all of these.

The greatest assumption in the following table versus the data collected is for the category, “Monitor,” as well as some other categories. City staff has observed that most trees require tree pruning. Therefore, this assumption has been accounted for in the table on Page 68 under the “Pruning” heading for trees listed in the inventory database with the “Monitor” category. By not including pruning for most trees, actual work and costs would be under-evaluated. For example, if a tree was listed under “Unstake” the table on Page 68 accounts for pruning such trees as well as unstaking.

Another distinction in the table is the difference between “Pruning” and “Clearance Pruning.” Clearance pruning should be viewed as a higher priority than pruning and denotes the specific pruning task of raising branches over streets or sidewalks. While there are many more needing clearance pruning than indicated, the “Pruning” category covers this and other tree pruning work.

Also of note, Park tree pruning cost is relatively high compared with Street tree pruning cost. This is explained by the larger average size of park trees compared with the smaller average size of street trees. Larger trees cost more to prune.

The expenditure table uses hourly estimates for labor and equipment to determine the costs. The hourly rates are for City labor at \$35 per hour and equipment rates published by FEMA. These costs should be viewed as an example of expenditures if the work is performed by City staff and may vary using contractors and as labor and equipment rates change. Other than costs shown for “Repave/Root Repairs,” and “Mulch,” material costs were not included.

For any of the maintenance tasks in the table and because three years have passed since the information was collected, tree conditions should be checked prior to scheduling work to verify the conditions still exist or have changed. However, the table provides a good indication of the amount of expenditures to expect for budgeting purposes.

Maintenance Expenditure Summary

| Parks | | | | | | | |
|------------------------|----------|-----------|----------|-----------|-----------------|---------------------|--------------|
| Prune | Remove | Mulch | Unstake | Monitor | Clearance Prune | Repave/Repair Roots | Totals |
| \$ 632,308 | \$ - | \$ 3,984 | \$ 498 | \$ 9,788 | | | \$ 646,578 |
| Streets | | | | | | | |
| \$ 798,287 | \$ 2,000 | \$ 10,512 | \$ 1,944 | \$ 13,252 | \$ 31,376 | \$ 37,950 | \$ 895,321 |
| Category Totals | | | | | | | |
| \$ 1,430,595 | \$ 2,000 | \$ 14,496 | \$ 2,442 | \$ 23,040 | \$ 31,376 | \$ 37,950 | \$ 1,541,899 |

Estimates Explained

Prune - trees 13 inches dbh and smaller categorized "monitoring" or "not identified", those showing deadwood, damage, decay, disease, root problems, structure, topped and wires, as well as trees categorized for pruning.

Remove - as categorized and includes disease category when condition was poor

Mulch - as categorized except for street trees where it was indicated for pruning instead

Unstake - as categorized

Monitor - applied to trees 14 inches dbh or larger when monitor was indicated and the species was conifer

Clearance Prune - all trees categorized for clearance pruning over street and sidewalk

Repave/Repair Roots - repair sidewalks and roots

Estimates include labor, vehicles and profit of 10%. Materials and supplies not included.