CITY OF POULSBO

MASTER PUBLIC TREE PLAN

DRAFT

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The Poulsbo Tree Board dedicates this document to the memory of Betty Iverson, former Poulsbo Tree Board Member.

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PURPOSE STATEMENT

The purpose of this master plan is to develop a management tool that will provide the City's Urban Forestry Program a pro-active approach toward managing public trees. This plan includes the following:

Short and Long Term Management Goals.
Public tree maintenance information.
A current inventory of the City's public trees.
A recommended street tree and park tree list.
Design of a master plan for tree planting in designated areas of the public right-of-ways.
Integration of this plan with the various municipal departments that manage the City's urban forest.
Input from community members through public meetings.
Involvement and input from the Poulsbo Tree Board members.
City Council adoption of the Master Public Tree Plan and its contents.

The following sections are the basis for developing a public tree management program.

"Trees are the only part of the municipal infrastructure that actually increase in value"

Preston Cole, Urban Forester, City of Milwaukee, WI

INTRODUCTION

The City of Poulsbo offers the Master Public Tree Plan to provide information concerning the proper care and maintenance of its urban forest. This plan is intended for all who are responsible for the planting and maintenance of the City's public trees.

The development of the Master Public Tree Plan comes at a time when the City's 5-Year Urban Forestry Strategic Plan is at its final year. The success of the strategic plan's goals and objectives has constructed a foundation for the development and implementation of the Master Public Tree Plan.

This master plan reflects Poulsbo's commitment to plant and maintain a healthy and diverse community forest.

Vision of Poulsbo

Trees of various species, ages, and sizes are growing in all parts of the city, contributing to a green and healthy community. Tall slender conifers accentuate and add beauty to the skyline. Graceful tree branches arch over busy thoroughfares and quiet residential streets. Wooded corridors weave through the city, providing for coexistence of wildlife habitat, play areas for children and recreational space for all citizens. These trees give character to the City's neighborhoods and shopping areas. Trees create streets friendly to walkers and buffer between people and the hard edges of buildings and roads. People of all ages and walks of life are active in planting and caring for trees, demonstrating their faith in, and commitment to posterity. Evergreen trees grow throughout the city, a visual reminder of the special character of the Pacific Northwest. Deciduous trees mark the seasons, connecting us visually with the passage of time. Shady areas in public places welcome citizens on a summer's day and provide shelter from the rain. These trees help ensure that Poulsbo of the future will remain a most livable community.

City of Poulsbo Master Public Tree Plan

SECTION 1.

SHORT AND LONG TERM MANAGEMENT GOALS AND POLICIES

Poulsbo urban forestry related issues that were determined by the tree board members and council liaison during a monthly meeting.

- **Master Public Tree Plan**
- **Loss of Trees**
- **Choosing the Right Tree for the Right Place**
- **Inventory Update**
- **Existing Trees and Conflicts with Proposed Development**
- **Road Projects Need to Include Funds for Street Trees**
- **Damage to Existing Public Trees During Construction**
- **Overhead Utility Line Conflicts With Public Trees**
- **Public Tree Ordinance and Standards**
- **Maintenance**
- **Promotion of Trees and Their Benefits**
- **Urban Forestry Program Funding**

The following goals and associated policies are a result of the City of Poulsbo's Tree Advisory Board, Parks and Recreation Department and other municipal department efforts to recognize urban forestry related issues concerning staff and the community.

City of Poulsbo Master Public Tree Plan

Section 1.

Short Term Goals

1. Goal
To encourage and maintain a balance between tree lined streets and safe utility and transportation corridors.

> **Policy**
> The City shall provide appropriate guidelines and standards for utility design which will coexist with established and future tree plantings.
> **Policy**
> The City shall promote utility and municipal department coordination regarding utility maintenance and installation.
> **Policy**
> The City shall provide appropriate locations for street trees which do not conflict with standards for sight distance triangles and traffic sign placement.

2. Goal
To update and maintain the public tree inventory.

> **Policy**
> The City shall continue to maintain and update its public trees inventory.

3. Goal
To establish a public tree maintenance crew with certified arborists.

> **Policy**
> The City shall employ qualified individuals to fill positions to assist as the street tree maintenance crew and provide on-going training in landscape and tree maintenance activities.

4. Goal
To create and maintain comprehensive lists of street and park trees to be recommended in future plantings that are supported by ordinance.

> **Policy**
> The City shall adopt and enforce an approved street and park tree list.

City of Poulsbo Master Public Tree Plan

Section 1.

Short Term Goals

5. Goal
To coordinate street tree design/selection in the permitting and review process.

Policy
The City shall provide and encourage effective coordination and compliance with applicable design and development standards for each type of land use or street type associated with the establishment and maintenance of public trees.

6. Goal
To develop a public tree ordinance that presents planting and maintenance standards for all trees within public lands.

Policy
The City shall encourage continual input from the public, as well as from municipal departments and the Tree Advisory Board with regard to urban forestry standards and procedures associated with the planting, protection and maintenance of public trees.

Policy
The City shall review and amend policy, procedures and standards for establishing and maintaining the community urban forest.

Section 1.

Long Term Goals

1. Goal
To sustain a healthy urban forest which benefits the community with improved air quality, erosion control, stormwater retention, temperature reduction, aesthetics, and enhances wildlife resources.

> **Policy**
> The City will plant desirable trees on public property to enhance community attractiveness, and foster species and age diversity for the health and benefit of the urban forest.

2. Goal
To work towards no net loss of the overall community urban forest cover; in the long term, measurable gain.

> **Policy**
> The City shall mitigate the net loss of healthy forest canopy cover on publicly owned lands; and in the long term, assure measurable gain with consideration of species performance, practicality and maintenance requirements.

3. Goal
To discourage the unnecessary removal of existing healthy trees in the design, construction, or reconstruction of future parks, street projects, and other public property development.

> **Policy**
> The City will develop tree planting, protection and removal standards for the benefit of municipal departments, citizens, and development.

4. Goal
To support a street tree crew/program for the maintenance and planting of public trees in Poulsbo.

> **Policy**
> The City shall continue and expand it's support for the urban forestry program and maintenance crew.

City of Poulsbo Master Public Tree Plan

Section 1.

Long Term Goals

5. Goal
To establish funding mechanisms for the sustainability of the City's urban forestry program.

Policy
The City shall allocate funds and research alternative funding resources to ensure the sustainability of the public tree maintenance program.

Section 2.

CHAPTER _____. PUBLIC TREE ORDINANCE

Sec. 6.10.008. Purpose.

The purpose of this chapter is to encourage responsible management of trees within city parks, rights-of-ways, and open spaces. Proper planting, pruning, and maintenance are required to promote the community's tree resource and the benefits it provides.

The city council, city departments, and tree board recognize the need to establish a public tree management program as part of the urban forestry program. The focus of the urban forestry program will be on balancing the needs of the community and the urban forest.

Sec. 6.10.009. Urban Forestry Program.

A. Establishment.

The urban forestry program is established within the parks and recreation department. The parks and recreation department has administrative and maintenance jurisdiction over trees and shrubs within public rights-of-way and other public owned areas.

B. Responsible Official.

The city arborist is designated as the responsible official for administering the urban forestry program. In lieu of the 'city arborist' the director of Parks and Recreation Department will perform as the 'Responsible Official'.

C. Authority.

The city arborist regulates and permits the planting, pruning, removal, replacement, protection and maintenance of all trees and associated vegetation within the public rights-of-way and other public areas.

The city arborist examines all trees and associated vegetation in the City to determine if they are diseased, dead or hazardous, obstructing the rights-of-way, or posing a threat to public safety.

Section 2. CHAPTER _____. PUBLIC TREE ORDINANCE

Sec. 6.10.009. Urban Forestry Program.

The city arborist with the advice and assistance of the Poulsbo Tree Board shall perform duties that include, but not limited to, the following:

- Advocating trees within the city;
- Promoting public education about trees;
- Providing the Mayor and City Council with a yearly report regarding Tree Board activities;
- Promoting proper tree care and maintenance;
- Developing innovative and joint funding for urban forestry related projects from a variety of sources;
- Promoting the responsible planting of trees on public property;
- Providing for aesthetics within the City through implementation of the urban forestry program.

The city arborist, with the approval of the Poulsbo Tree Board and City Council, shall have the authority to amend or add to the Poulsbo Master Public Tree Plan at any time that circumstances make it advisable.

Sec. 6.10.010. Definitions.

The following words and phrases when used in this chapter, shall have the following meanings unless a different meaning is clearly required by the context:

Associated Vegetation shall mean native or non-native shrubs and ground covers within city parks, rights-of-ways, and open spaces.

City shall mean the City of Poulsbo.

City Arborist shall mean the contracted or city employee who is a current certified arborist by the International Society of Arboriculture and is responsible for administering and enforcing the provisions of this chapter.

Hazard Tree or *Hazardous Tree* shall mean any public tree rated as such by the city according to the tree hazard evaluation standards established by the International Society of Arboriculture.

Maintain or *maintenance* shall mean the entire care of trees within city parks, rights-of-ways, and open spaces, as well as the preparation of ground, fertilizing, mulching, planting, disease and insect control, trimming, pruning, staking, root control, watering, leaf litter, weed removal, and removal of dead and dying trees, unless specifically so stated.

Section 2. CHAPTER _____. PUBLIC TREE ORDINANCE

Sec. 6.10.010. Definitions.

Master Public Tree Plan shall mean a document adopted by council that presents street and park tree inventories, maintenance recommendations, recommended street tree and park tree lists, master design plan for street tree plantings and urban forestry program goals.

Public trees shall mean all trees and woody plants within city parks, rights-of-ways, and open spaces.

Planting shall mean to install public trees permanently in the ground.

Planting strip shall mean the area available for planting including tree pits between the street curb, the edge of the traveled portion of roadway and the property line.

Property owner shall mean the person owning such property as shown by the records of the Assessor's Office of Kitsap County, Washington.

Pruning shall mean cutting or removing any part of the branching structure of a plant in either the crown, trunk, and/or root areas.

Removal shall mean removal of a tree within city parks, rights-of-ways, and open spaces.

Street trees shall mean those trees and woody plants that are mainly ornamental cultivars selected to be planted according to a linear design plan within designated planting areas.

Urban Forestry Standards and *Specifications Manual* shall mean a document adopted by council which presents required standards and specifications for public tree planting, maintenance, removal and protection to be required.

Sec. _____. Street tree and Park tree planting list.

A. The city arborist shall have full advisory authority as to the selection, planting and maintenance of all trees and associated vegetation within city parks, rights-of-ways, and open spaces.

B. The city arborist shall approve the official tree planting list and public tree planting plans according to the City's Master Public Tree Plan. The city arborist in evaluating such plans prior to approval shall call upon the resources of the departments of public works, planning, engineering and parks and recreation to provide facts and information concerning trees within city parks, rights-of-ways, and open spaces.

Section 2. CHAPTER _____. PUBLIC TREE ORDINANCE

Sec. _____. Street tree and Park tree planting list.

C. All new plantings within planting strips, rights-of-way, open space of the city shall be confined to trees from the latest adopted official Master Public Tree Plan. Replacement planting may conform to existing trees or native species in the planting strip by approval of the city arborist.

Sec._____. Public tree planting plans and Standards.

A. The planting of public trees in the city shall be governed by general and specific tree planting plans approved by the city arborist. The plans shall be based upon the policies indicated in this chapter, the Urban Forestry Standards and Specifications Manual for Planting, Maintenance, Pruning and Protection, and upon the following standards:

1. The city arborist shall evaluate types and varieties of trees from the adopted master public tree plan and the nature of the particular area to be planted.

2. The city arborist shall approve the general or specific plan. The city arborist, in evaluating the plan prior to approval, may call upon the resources of the departments of public works, planning, engineering, and parks and recreation to furnish facts concerning the matter.

The city arborist shall be guided by and apply within city parks, rights-of-ways, and open spaces the following standards when formulating and approving a street tree planting plan.

1. Trees listed on the adopted master public tree plan and approved street tree list are to be used, although other trees may be planted on an experimental basis or where native species are applicable.

2. Trees shall be at located suitable intervals, with consideration given to minimizing interference by the trees with existing or planned utilities, driveway approaches, street intersections, existing vegetation, street signs, traffic signs, and building exposures.

3. Selection of a particular species of tree for a specific block, street, or section of the city, shall be based upon the nature of the species and the width of the planting strip, topography, soil conditions, zoning regulations, street patterns, building setbacks, utilities, master public tree plan and availability of the particular species.

Section 2. CHAPTER _____. PUBLIC TREE ORDINANCE

Sec. _____. Property owner requests.

A. A majority of the abutting property owners in a given block, street, or area of the city where tree planting is required, may petition for the uniform planting of a tree variety of their choice. Such petition shall be approved if made from the adopted master public tree plan and the selection does not conflict with the standards in this chapter and Urban Forestry Standards and Specifications for Planting, Maintenance, Pruning and Protection.

B. A petition to the city arborist bearing the signatures of not less than ninety (90) percent of the property owners of any block may be filed with the city arborist, requesting a change in the variety of trees in the planting strip adjacent to their properties. Such petition may be approved by the city arborist, provided the tree selection is made from the master public tree plan and the selection does not conflict with the standards of the Urban Forestry Standards and Specifications Manual.

C. All expenses of such change will be borne by the property owners requesting the change. The work will be done under the supervision of the City Arborist.

Sec. _____. Public tree maintenance, inspection and removal.

A. It shall be the responsibility of the city to provide proper maintenance according to the Public Tree Care Standards and Specifications Manual for Planting, Maintenance, Pruning and Protection for all trees and associated vegetation within city parks, rights-of-ways, and open spaces. Exemption: Please reference Section __ Nonliability of city.

B. The city arborist shall conduct a continual inspection program of public trees within the city. All trees found by the city arborist to be dead, dying or in a hazardous condition shall be removed.

C. Public tree maintenance shall follow the standards and specifications presented within the current Urban Forestry Standards and Specifications Manual.

Section 2. CHAPTER _____. PUBLIC TREE ORDINANCE

Sec. _____. Protection of public trees.

A. No person shall plant, install or maintain shrubs, low growing trees, vines, fences, signs or stakes, or any other object, except temporary protection for newly planted lawns, or cause or create conditions or uneven ground, holes or hazards in planting strips along the streets of the city. When determined by the city arborist that any such plantings or installations are a hazard to the public or detrimental to the approved tree planting plan, the city arborist shall have full authority to request such hazard or detriment to be removed or eliminated.

B. No person shall, without written permission from the city arborist, plant, remove, trim, prune, top or cut any public tree. Upon permission being granted to any person, the work shall be done under the supervision of the city arborist. Private utilities shall obtain an annual permit describing yearly tree or vegetation maintenance prior to work activity within the public right-of-way.

C. No person without lawful authority shall interfere or cause or permit any person to interfere with employees of the city who are engaged in the planting, maintaining, treating, or removing of any tree or plant in the planting strips or in the removing of any stone, cement, or any substance in any such street, sidewalk, planting strip, alley, or other public place.

D. No person shall willfully injure or destroy any tree on the street or in public planting areas of the city.

Sec. _____. Nonliability of city.

Nothing in this chapter shall be deemed to impose any liability upon the city, or upon any of its officers or employees concerning private property. The owner and occupant of any private property shall have the duty to maintain sidewalks, trees and shrubs upon private property, or property under their control, including sidewalks and planting strips in front of such private property.

Section 2. CHAPTER _____. PUBLIC TREE ORDINANCE

Sec. ___. Urban Forestry Account.

Purpose.

Whereas the City of Poulsbo establishes an urban forestry budget tree account to be administered by the Parks and Recreation Department director. Therefore, the purposes of this chapter are:

A. To provide financial stability for the installation, maintenance and preservation of municipal trees;

B. To provide for the protection, preservation, replacement, proper maintenance, education, and use of trees and woodlands located in this city, in order to preserve and enhance the city's physical and aesthetic character;

C. To implement the goals and policies of the urban forestry program;

D. To provide for the care of these natural resources in the interest of a healthier and safer place in which to live and to promote the general welfare of the residents of this city.

Urban Forestry Account.

There is hereby established within the city an urban forestry account for the purpose of planting and maintaining trees within the city right-of-way and all city owned property.

A. Collections and Deposits. All fines collected for violations of (or of Chapters __, __, ___.) this chapter shall be deposited into the urban forestry account. All donations and mitigation fees collected in relation to the preservation of trees, or the enhancement of wooded buffer areas shall also be deposited into the urban forestry account. In addition, the following sources of funds may be placed in the urban forestry account:

1. Other monies allocated by the City Council

2. Sale of trees or wood from city property where the proceeds from such a sale have not been dedicated to another purpose.

3. Civil penalties imposed under Section ##.## or settlements in lieu of penalties. At the discretion of the city attorney, costs incurred by the city to enforce Chapters ##.##, ##.##, may be deducted from the civil penalties.

Section 2. CHAPTER _____. PUBLIC TREE ORDINANCE

Urban Forestry Account.

Maintenance of Account. The urban forestry account shall be maintained by the Finance Department as a separate, interest-bearing account.

Use of Funds. The city shall use the city urban forestry tree account for the following purposes:

1. Maintaining and preserving wooded areas within the city.

2. Identifying and maintenance of landmark trees.

3. Maintaining public trees, woody plants and trees located in other public rights-of-way.

4. Other purposes relating to trees, and woody plants as determined by the City Council.

5. Purchase and care of nursery stock.

Sec. _____. Violations and penalties.

1. Any planting, destruction, pruning, or maintenance, or lack thereof, that does not comply with this chapter or the Urban Forestry Standards and Specifications Manual is a violation of this chapter and shall be a civil infraction as defined in PMC ____. Each separate violation shall be deemed a separate offense. Failure to comply with a condition of approval to plant or prune shall be a separate infraction each day the failure to comply continues.

2. Violation of any part of this chapter is hereby declared a public nuisance and may be abated by the appropriate proceedings pursuant to PMC _____.

3. Upon request of the mayor, direction from council, city arborist, and/or at the request of citizens, the City Attorney may institute appropriate action in any court to require the replacement of trees by PMC _____.

Section 2. CHAPTER _____. PUBLIC TREE ORDINANCE

Section . Mitigation Required.

In addition to any penalty imposed under PMC _____, any person who commits the following violations shall be responsible for mitigation of such violation as provided below:

1. A public tree that has been planted in violation of the standards in the Tree Manual shall be replanted in compliance with the manual.
2. A tree that has been planted in right-of-way and is not on the City's approved tree street list or master public tree plan, shall be replaced with an approved species from the list or plan except where native species or existing species are desirable.
3. An improperly pruned municipal tree shall be removed when corrective pruning cannot remedy the tree's health or form. A replacement tree shall be planted in replacement according to the approved street tree or park tree lists, as well as the master street tree design plan.
4. The removal or destruction , of a public tree in violation of this chapter shall be mitigated by:

    a. Planting a replacement tree, the species and site location approved by the city arborist, with either a 2" caliper deciduous tree or 6' tall coniferous tree at a minimum, and;
    b. Paying into the City's Urban Forestry Account an amount of money equal to the value of the removed tree. For trees up to 3" in caliper, the replacement value of the tree shall be required. For trees that are too large to replace by nursery or field stock, the violator shall pay the appraised value of the tree. The tree's appraised value shall be determined by the city arborist using the current criteria established by the current International Society of Arboriculture, Guide for Plant Appraisal.

Section 2. CHAPTER _____. PUBLIC TREE ORDINANCE

Section . Mitigation Required.

c. In the event a public tree is damaged as the result of construction or on a demolition site so as it may die within eighteen months but is not rated as a hazard, a sum of money equal to the tree's value shall be deposited with the City for a period of eighteen months. If the tree survives during that period, the money shall be refunded.

d. Any replacement tree that dies within three years of planting shall be replaced by the party responsible for the planting. If the replacement is not done, the City may plant the approved tree(s) and assess the costs to the responsible party.

SECTION 3.

POULSBO MASTER STREET TREE DESIGN PLAN

Purpose, Audience, and Objectives

This Master Street Tree Design Plan is a map for the future. The purpose of this plan is to identify and analyze the street tree resources in the City of Poulsbo and to formulate a plan for managing and enhancing this valuable resource. Through the implementation of this plan, we will:

1) Create healthier and safer streets for pedestrians, bicyclists, transit and motorists;
2) Make Poulsbo a more beautiful place to live in and visit;
3) Bring a sense of natural beauty into our city streets and other public areas;
4) Increase residential and commercial property values;
5) Increase civic pride.

The primary audience for this plan is elected officials, City Staff and citizens. The decision makers are charged with implementing the policies established in this plan. Staff, will rely on this plan as a technical guide in selecting tree species, tree planting locations and maintenance standards. Furthermore, the citizens of Poulsbo will be assured that their public tree resource will be established, maintained and protected for future generations.

Primary Master Street Tree Design Plan Objectives:

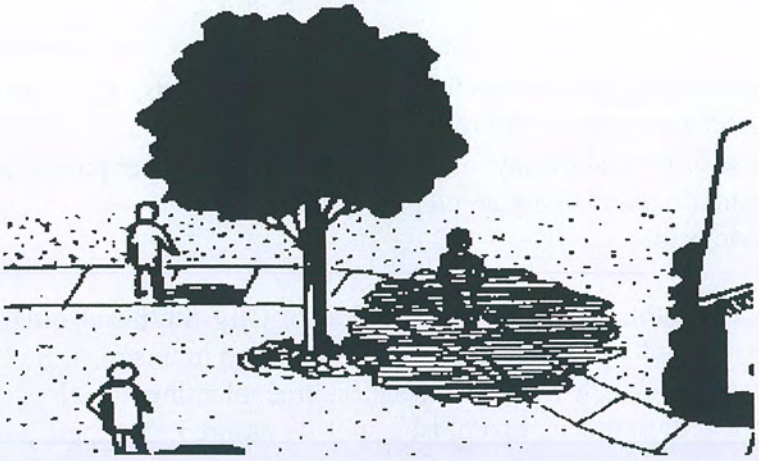
1) Create a usable tool for the enhancement and management of our street trees
2) Provide clear direction and priorities for management of our street trees
3) Identify and document our existing street tree resources so we can track and measure our implementation efforts
4) Estimate costs for enhancement and management
5) Perform as a marketing tool to solicit grants and other funding

SECTION 3. POULSBO MASTER STREET TREE DESIGN PLAN

A. Why We Need Trees

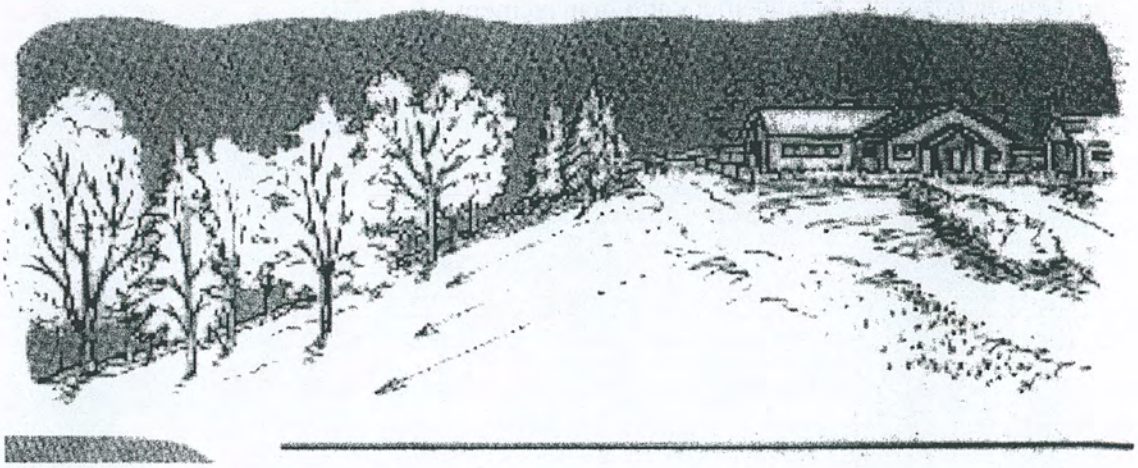
Trees save energy and reduce noise pollution. They shade buildings, cool the air, provide protection from the wind and absorb unwanted noise.

Figure 1.1 Trees provide shade.



Trees improve water and air quality. They reduce erosion and filter pollutants out of the air, water and soil.

Figure 1.2 Trees provide erosion control..

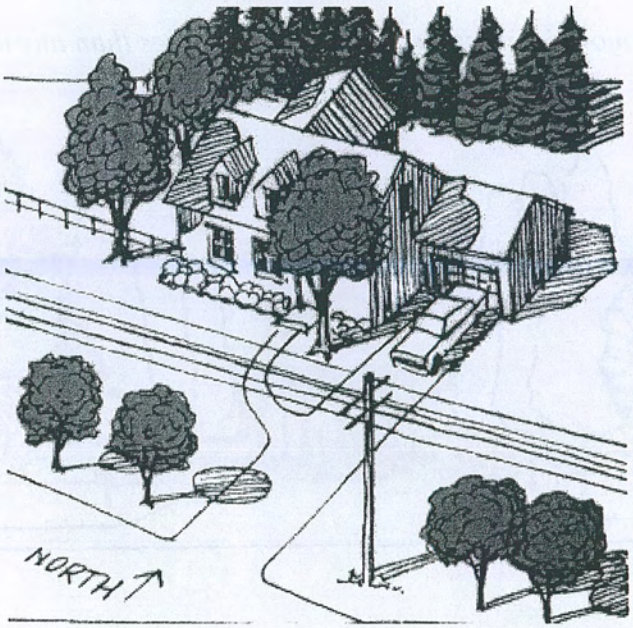


SECTION 3. POULSBO MASTER STREET TREE DESIGN PLAN

A. Why We Need Trees

Trees beautify our community, enhance property values and provide wildlife habitat.

Figure 1.3 Trees increase property values.



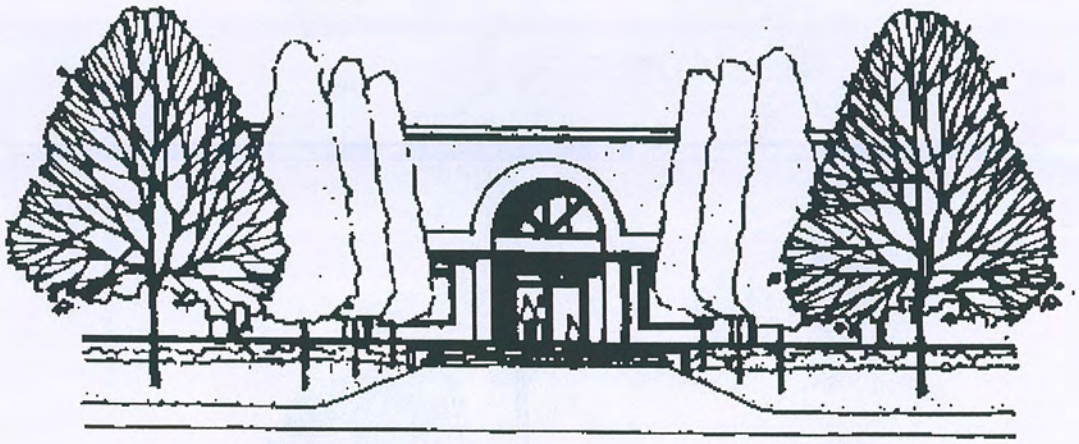
SECTION 3. POULSBO MASTER STREET TREE DESIGN PLAN

A. Why we need Street Trees

Besides the benefits all trees provide, street trees serve a special role in the urban environment. They help to enclose the travel corridor by defining and reinforcing a three-dimensional space around and over the street. No man-made element of the infrastructure can accomplish this effect.

Street trees are the most visible of public trees. When we travel, whether by foot, bike, bus or car, we experience street trees more intimately than other trees in the City.

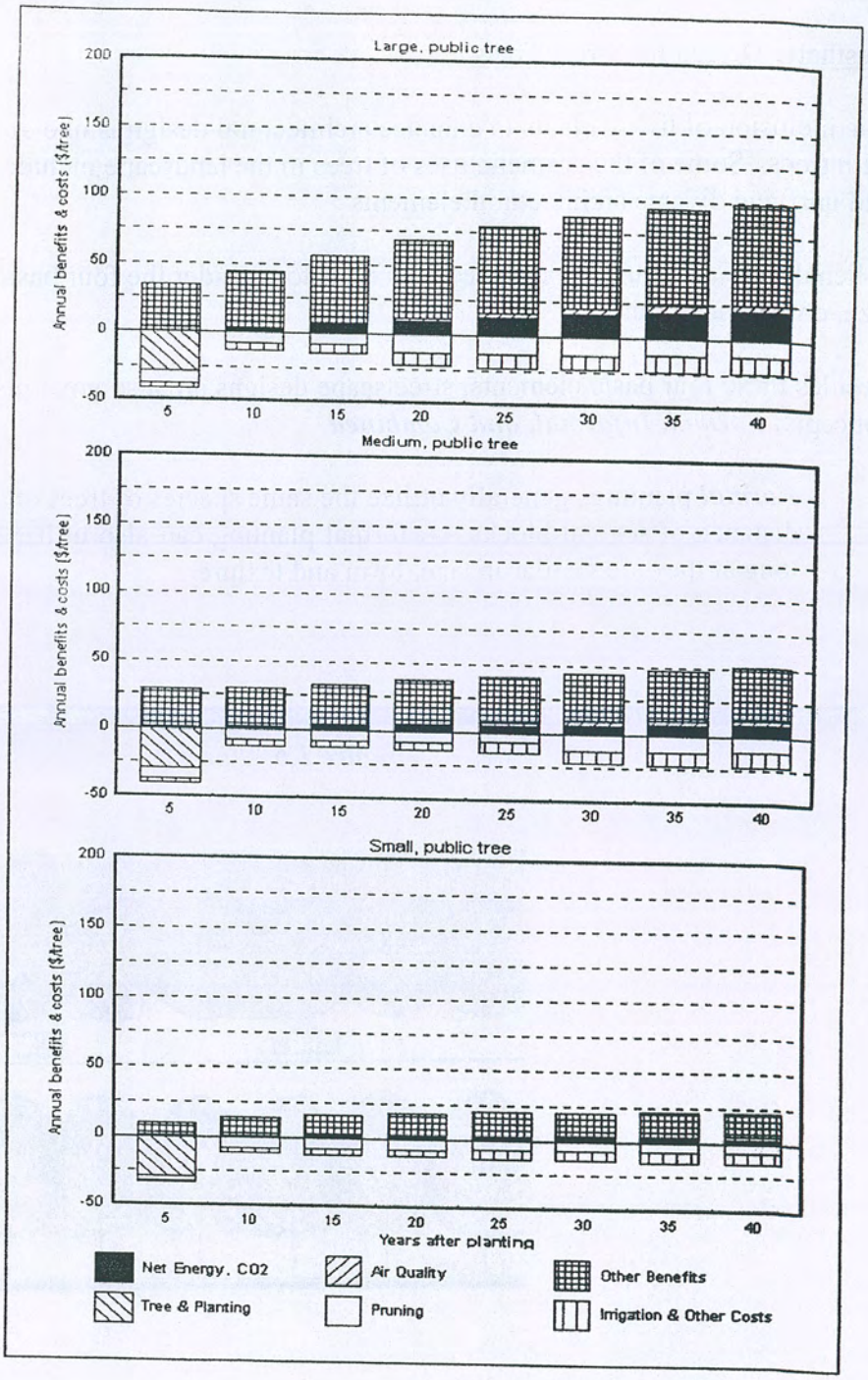
Figure 1.4 We have more interactions with our street trees than any other public trees.



B. The Value of Street Trees

Trees benefit our society in a number of ways. They provide aesthetics, wildlife habitat, timber, shade, erosion control, filtering air pollution, etc. Perhaps the most overlooked fact is the simplest and most powerful: we like trees. An urban landscape without trees is likely to feel barren, lifeless, and inhospitable. Many of these benefits can be easily quantified, while some are hard to equate with a monetary value. An example of identifying benefits and costs of urban and community forests is presented in Figure 1-5. The following graphs present benefit summaries of three size classes of public trees. Please note that costs are greatest during the initial establishment period and as the tree increases in age the benefits surpass the maintenance costs throughout its life.

Figure 1-5. Public street/park tree estimated annual benefits and costs.



8. Public street/park trees. Estimated annual benefits and costs for a large (red oak), medium (Norway maple), and small (purple-leaf plum) public street/park tree.

Source: Western Washington and Oregon Community Tree Guide: Benefits, Costs and Strategic Planting. USDA Forest Service, Center for Urban Forest Research, 2002

SECTION 3. POULSBO MASTER STREET TREE DESIGN PLAN

C. STREETSCAPE DESIGN

Aesthetic Design for Street Trees

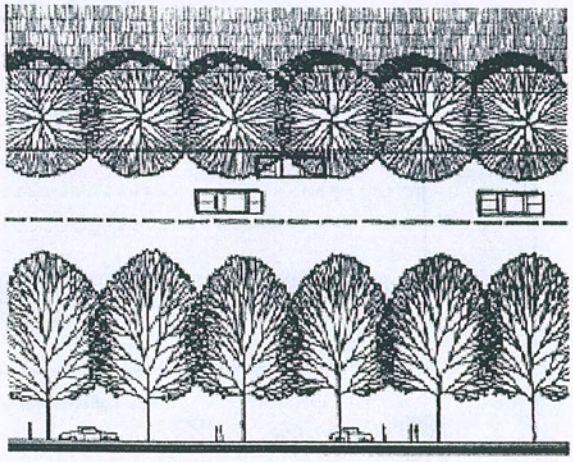
The inclusion of living plants to enhance architectural design is one of the reasons for designing with trees. Some of the aesthetic uses of trees in the landscape include: Softening line and mass; and unifying diverse architectural elements.

When designing a landscape project you need to consider the four basic elements of design: form, size, color, and texture.

Besides these four basic elements, streetscape designs are also governed by three different planting concepts: ***Formal, Informal, and Combined***.

> ***Formal*** plantings generally utilize the same species of trees on both sides of the street for a distance of several blocks. A formal planting can also utilize different species of trees as long at they are similar in size, form and texture.

Figure 1.6 "Formal"

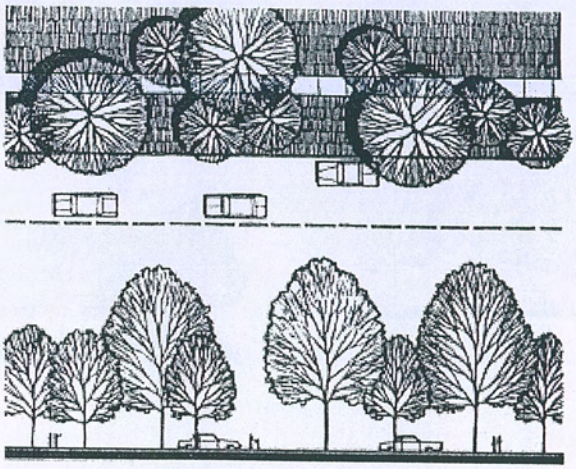


SECTION 3. POULSBO MASTER STREET TREE DESIGN PLAN

C. STREETSCAPE DESIGN

Informal plantings emphasize randomness, a large number of species, and irregular spacing. An informal planting concept is most appropriate for large areas such as parks. As a general rule, informal plantings in planting strips adjacent to streets is applicable only if the area for planting is large (15 feet wide or more). Without sufficient width in the planting strip, the desired informal effect cannot be achieved. The recent Viking Avenue streetscape planting is an example of an informal planting

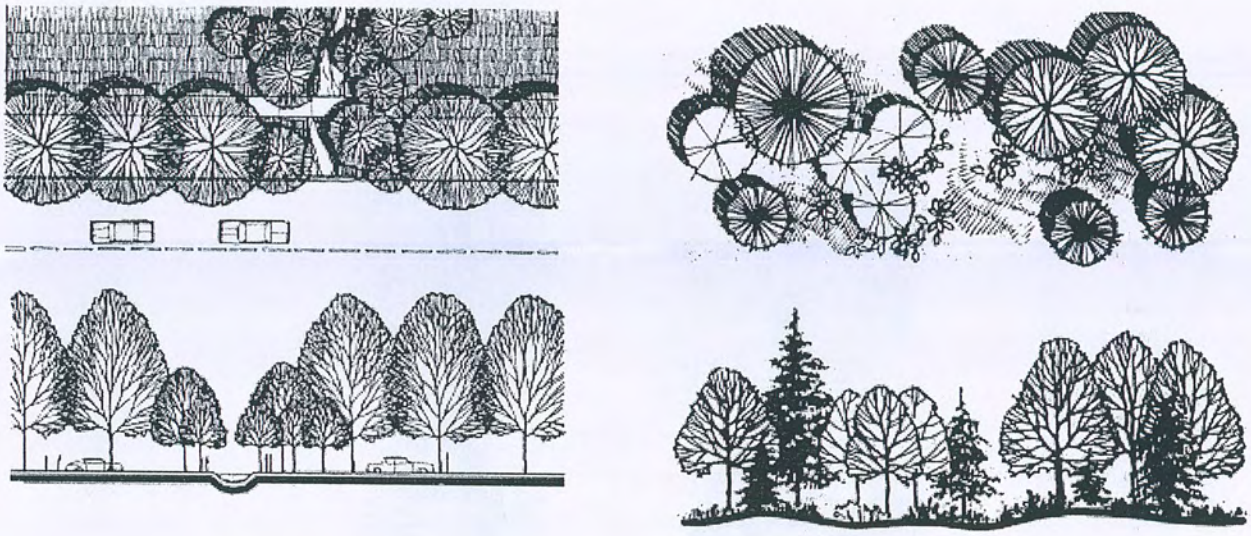
Figure 1.7 "Informal"



C. STREETSCAPE DESIGN

Combined plantings include elements of both formal and informal planting concepts. Generally one species of trees is used on both sides of the streets for the majority of the planting, with a different species (of different size, form, color, or texture) used to accent some particular feature, like an intersection, building, entryway, etc.

Figure 1.8 "Combined"



There are opportunities to utilize all three of these planting concepts in the City of Poulsbo. However, formal and combined concepts are the most appropriate for most of our plantings.

In addition to the various design options, there are also options related to locations of the street trees with regard to the sidewalk and the road.

Street Trees in Planting Strips: Planted in a strip large enough to accommodate the mature growth of the trees is probably the ideal planting location for street trees. A planting strip helps to separate pedestrians from traffic lanes. The wider the planting strip the larger a tree can be, and the greater the buffering capacity for pedestrians.

C. STREETSCAPE DESIGN

Street Trees Planted in Pits with Tree Grates: This is a common planting option in areas with confined planting spaces and high pedestrian traffic. An example of trees in pits with grates is found at Hav Veien Walkway.

Street Trees Planted Behind the Sidewalk: When the curb, sidewalk and other street improvements are already installed, or if the planting strip is too narrow, the only place to plant a street tree is behind the sidewalk. There are advantages and disadvantages to this planting location. By planting the tree behind the sidewalk, the tree no longer buffers the pedestrians from the traffic lane, and it becomes more difficult to obtain the canopy effect of street trees over the roadway. However, if the planting strip is less than 5 feet wide we run the risk of the tree roots damaging the sidewalk and/or curbs. By placing the tree behind the sidewalk there is potentially more soil volume available to the roots of the tree. Since trees planted behind the sidewalk are likely to be growing on private property instead of public right-of-way, we won't have the same level of control in choosing species and regulating the maintenance of the trees.

D. Planting

Volunteers

Tree planting with volunteers works best along residential local access streets. Ideally, the homeowner who will eventually be responsible for maintaining the trees is the one who actually plants the tree(s).

Contract Tree Planters

For large tree planting projects, or where tree planting is part of a larger project, contracting may be the most appropriate way to plant street trees. One of the problems associated with contract tree planting, is the cost to administer the contract.

"In-house" Crews

Tree planting by "in-house" City crews, may be the most efficient way to plant street trees. The biggest problem associated with "in-house" tree planting, is timing. If the tree planting takes place in the spring, chances are very good, that our "in-house" crews will be too busy with other work activities. If the tree planting takes place in the fall or early winter it would probably fit our crews schedules better.

New Development

There will be many instances where the street trees will be planted by a developer as part of their required frontage improvements. Generally this would be done at no cost to the City.

SECTION 3.
POULSBO MASTER STREET TREE DESIGN MATRIX

This portion of the Poulsbo Master Street Tree Design Plan will identify areas that can be planted with street trees.

The following street tree information is presented in a matrix. Each focus area will be identified with the associated block sections. The odd or even address side of each block face will be displayed if an opportunity for planting exists.

The proposed tree species/cultivar is presented in the odd or even side of the block section. There may be more than one tree species/cultivar presented within a block section for either odd or even address sides. The multiple listings of trees within a block section offers the streetscape designer the available tree types that can be planted as formal, informal, and combined designs.

Existing site constraints are noted as well. For example; the "OP" abbreviation represents the existence of Overhead Powerlines, "SW" abbreviation represents the existence of Sidewalks. Additional information includes the suggested planting location for that specific block face. For example; "P" symbol represents that the trees would be planted in a Tree Pit/Street trees in grates. Another example is the "I" which represents an infill-planting situation. There will be an "X" marked in the block that indicates the individual situation for each proposed planting, whether its the odd or even address side of the section.

Not all 'Local Residential' streets are represented as well as potential development associated streets. However, the street tree planting matrix as well as the sample street tree planting matrix present resource information as well as comparative examples for developing an appropriate streetscape design.

TREE PLANTING MATRIX

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	FINN HILL RD									
O	NW Karkainan LN – Viking Ave. NW	X				X			SN	Tartarian Maple
E	NW Karkainan LN – Viking Ave. NW		X			X			SN	Tartarian Maple

Matrix Abbreviations/Symbols
O/E = Odd and Even address side of the block face.
NC = No Curb
OP = Overhead Powerlines
SW = Sidewalk
PS = Planting Strip
BW = Behind Walk (plant tree behind sidewalk)
I = Infill (plant new trees within or near existing trees - try to match with similar species, size, shape, flower, etc.)
P = Pit (plant tree in sidewalk cutout - tree grate)

TREE TYPE
Short Narrow (SN) = Less than 35 ft. tall, Less than 20 feet wide.
Short Wide (SW) = Less than 35 ft. tall, More than 20 feet wide.
Tall Narrow (TN) = More than 35 ft. tall, Less than 20 feet wide.
Tall Wide (TW) = More than 35 ft. tall, more than 20 feet wide.

SECTION 3.
POULSBO MASTER STREET TREE DESIGN MATRIX

TREE PLANTING MATRIX

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	NW LINDVIG WY									
O	Viking Ave. NW – Front St. NE					X			SW	Norwegian Sunset Maple
E	Viking Ave. NW – Front St. NE			X		X		X	TW	Norwegian Sunset Maple

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	VIKING AVE. NW									
O	Finn Hill Rd – ST RT 305	X							SN	Thornless Cockspur Hawthorn
E	Finn Hill Rd – ST RT 305	X	X						SN	Henry Maple

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	FRONT ST. NE									
O	ST RT 305 – NW Lindvig Wy	X	X						SW SN	Maackia Red Cascade Mt Ash
E	ST RT 305 – NW Lindvig Wy	X							SW SN	Maackia Red Cascade Mt Ash
O	NW Lindvig Wy – Jensen Wy NE		X			X			SN SW	Serviceberry 'Princess Diana' Aurora Dogwood
E	NW Lindvig Wy – Jensen Wy NE					X			SN SW	Serviceberry 'Princess Diana' Aurora Dogwood
O	Jensen Wy NE – NE Sunset St.		X			X			SN SW	Serviceberry 'Princess Diana' Aurora Dogwood
E	Jensen Wy NE – NE Sunset St.					X			SN SW	Serviceberry 'Princess Diana' Aurora Dogwood
O	NE Sunset St. – King Olav Vie		X			X		X	SN SW	Serviceberry 'Princess Diana' Aurora Dogwood

SECTION 3.
POULSBO MASTER STREET TREE DESIGN MATRIX

TREE PLANTING MATRIX

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	DOWNTOWN BUSINESS CORRIDOR Front St.									
O	King Olav Vie – NE Hostmark St.				X			X	SN	Rocky Mt. Glow Maple
E	King Olav Vie – NE Hostmark St.				X			X	SN	Rocky Mt. Glow Maple

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	FJORD DR.									
E	NE Hostmark St. – 6th Ave.					X	X		SN	Adirondack Crabapple
O	NE Hostmark St. – 6th Ave.	X	X				X		SN	Adirondack Crabapple
E	6th Ave. – 9th Ave. NE					X	X		SW	Golden Raindrops Crabapple
O	6th Ave. – 9th Ave. NE	X	X				X		SW	Golden Raindrops Crabapple
E	9th Ave. NE – City Limits					X	X		SN	Jewelberry Crabapple
O	9th Ave. NE – City Limits	X	X				X		SN	Jewelberry Crabapple

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	JENSEN WAY									
E	NE Sunset St. – NE Iverson Rd.		X						SW	Pacific Sunset Maple
O	NE Sunset St. – NE Iverson Rd.								SW	Pacific Sunset Maple
E	NE Iverson Rd. – Front St. NE		X			X		X	SN	Tartarian Maple
O	NE Iverson Rd. – Front St. NE							X	SN	Tartarian Maple

SECTION 3.
POULSBO MASTER STREET TREE DESIGN MATRIX

TREE PLANTING MATRIX

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	4th AVE. NE									
E	NE Torval Canyon Rd. – NE Iverson Rd.	X	X				X		SN	Red Cascade Mt. Ash
O	NE Torval Canyon Rd. – NE Iverson Rd.	X					X		SN	Red Cascade Mt. Ash

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	NE HOSTMARK ST.									
E	Fjord Dr. – ST RT 305					X			TN	Pyramidal European Hornbeam
O	Fjord Dr. – ST RT 305	X	X			X			SW	Japanese Hornbeam
E	ST RT 305 – Caldart Ave. NE		X			X			SW	Lavelle Hawthorn
O	ST RT 305 – Caldart Ave. NE	X							SW	Lavelle Hawthorn
E	Caldart Ave. NE – Noll Rd. NE		X			X			SW	Wireless Zelkova
O	Caldart Ave. NE – Noll Rd. NE	X							SW	Wireless Zelkova

Matrix Abbreviations/Symbols
O/E = Odd and Even address side of the block face.
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PS = Planting Strip
BW = Behind Walk (plant tree behind sidewalk)
I = Infill (plant new trees within or near existing trees - try to match with similar species, size, shape, flower, etc.)
P = Pit (plant tree in sidewalk cutout - tree grate)
TREE TYPE
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SECTION 3.
POULSBO MASTER STREET TREE DESIGN MATRIX

TREE PLANTING MATRIX

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	STATE ROUTE 305									
O	Viking Ave. NW (City Entry) – Bond Rd NE	X	X						SW SN TN	Hedge Maple Adirondack Crabapple Jacquemontii Birch
E	Viking Ave. NW (City Entry) – Bond Rd NE	X							TN SW	Sourwood Hogan Western Red Cedar
O	Bond Rd NE – NE Forest Rock LN	X							SW SN	Hogan Western Red Cedar Sieboldii Magnolia
E	Bond Rd NE – NE Forest Rock LN	X	X						SN SW	Tartarian Maple Persian Parrotia
O	NE Forest Rock LN – NE Lincoln Dr	X							SW SW	Hedge Maple Adirondack Crabapple
E	NE Forest Rock LN – NE Lincoln Dr	X	X						SW SW SW SN	Prairifire Crabapple Maackia Lavelle Hawthorn Serviceberry 'Princess Dianna'
O	NE Lincoln Dr – NE Hostmark St	X							TN TN	Pyram. European Hornbeam Tschoniskii Crabapple
E	NE Lincoln Dr – NE Hostmark St		X						TN SN SN SW	Crimson Spire Oak Sieboldii Magnolia Tartarian Maple Persian Parrotia
O	NE Hostmark St – City Limit	X							SN SN	Adirondack Crabapple Lavelle Hawthorn
E	. NE Hostmark St – City Limit	X	X					X	SW SW	Wireless Zelkova Japanese Tree Lilac

SECTION 3.
POULSBO MASTER STREET TREE DESIGN MATRIX

TREE PLANTING MATRIX

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	NE LINCOLN DR									
E	Fjord Dr – ST RT 305	X							SN SW	Serviceberry 'Princess Diana' Trident Maple
O	Fjord Dr – ST RT 305		X			X			SN SW	Serviceberry 'Princess Diana' Trident Maple
E	ST RT 305 – Caldart Ave. NE					X			TN TN	Jacquemontii Birch Empire Ash
O	ST RT 305 – Caldart Ave. NE		X			X			SN SN	Stellar Pink Dogwood Galaxy Magnolia
E	Caldart Ave. NE – Ridgwood Ct					X			SW SN	Canada Red Chokecherry Butterly Japanese Maple
O	Caldart Ave. NE – Ridgwood Ct		X			X			SW SN	Canada Red Chokecherry Butterly Japanese Maple

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SECTION 3.
POULSBO MASTER STREET TREE DESIGN MATRIX

TREE PLANTING MATRIX

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	10th AVE. NE									
E	NE Forest Rock Ln – NE Liberty Rd	X							SW SW SW	Trident Maple Pacific Sunset Maple Mt. Saint Helens Plum
O	NE Forest Rock Ln – NE Liberty Rd	X				X			SW SW SW	Trident Maple Pacific Sunset Maple Mt. Saint Helens Plum
E	NE Liberty Rd – NE Lincoln Rd	X				X			SW SW SN	Thornless Cockspur Hawthorn Pacific Sunset Maple Henry Maple
O	NE Liberty Rd – NE Lincoln Rd	X				X			SW SW SN	Thornless Cockspur Hawthorn Pacific Sunset Maple Henry Maple

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	CALDART AVE. NE									
E	Miss Ellis Lp – NE Hostmark St					X			SW SW SW	Hedge Maple Toba Hawthorn Mt. Saint Helens Plum
O	Miss Ellis Lp – NE Hostmark St		X			X			SW	Hedge Maple a Hawthorn Saint Helens Plum
E	NE Hostmark St – NE Lincoln Dr	X								l Cascade Mt Ash
O	NE Hostmark St – NE Lincoln Dr	X								viceberry Princess Diana Coles Select

Caldart N of Lincoln
Mt. Fuji Cherry

Caldart Heights
Chateau Ridge
Haldon Glen

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. tall, Less than 20 feet
. tall, More than 20 feet
ft. tall, Less than 20 feet
ft. tall, more than 20 feet

SECTION 3.
POULSBO MASTER STREET TREE DESIGN MATRIX

TREE PLANTING MATRIX

O/E	FOCUS AREA Block Section	NC	OP	SW	PS	BW	I	P	TREE TYPE	SUGGESTED SPECIES
	NE MESFORD ST									
E	Caldart Ave. NE – Noll Rd NE	X	X			X			SW SN	Maackia Tartarian Maple
O	Caldart Ave. NE – Noll Rd NE	X							SW TN	Gerling Red Maple Autumn Applause Ash

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APPENDIX A. POULSBO PUBLIC TREE CARE STANDARDS AND SPECIFICATIONS MANUAL

Table of Contents

1. Purpose
2. Definitions
3. Scope
4. Tree Planting
5. Tree Pruning and Maintenance
6. Tree Removal
7. Tree Protection

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1. Purpose. The purpose of these regulations is to encourage responsible management of public tree resources within the City of Poulsbo, in a fashion consistent with the goals and policies of the Comprehensive Plan and Master PublicTree Plan. Because trees growing on public property provide benefits to the greater public at large, they are a public asset and are deserving of protection. Proper protection, planting, and maintenance are required to promote tree health, ensure, safety and aesthetics, foster species diversity, and enhance design, thus preserving the public tree canopy. Therefore, the purposes of this chapter are:

A. Encourage the planting of new trees and the maintenance of existing trees for all of the benefits they provide the community.

B. Maintain public trees in a healthy and non-hazardous condition using current and accepted aboricultural practices.

C. Manage trees and vegetation on public property in a manner that represents the best interests of the public.

D. Encourage a diversity of appropriate species of trees for specific planting sites.

City of Poulsbo Master Public Tree Plan

APPENDIX A. POULSBO URBAN FORESTRY STANDARDS AND SPECIFICATIONS MANAUL

2. Definitions. For the purpose of this chapter certain words and terms are defined as follows:

   A. Appropriate Tree. An appropriate tree is a tree suited at maturity for the space which it occupies without creating a hazard to public health and safety.
   B. Certified Arborist. One who has passed the International Society of Arboriculture's extensive Certification Exam, has current accreditation and represents the City of Poulsbo either as staff or consultant designation.
   C. City. City of Poulsbo
   D. Climbing Spurs. Sharp, pointed devices affixed to the tree climber's legs used to assist in climbing trees (also know as gaffs, hooks, climbers).
   E. Crown Reduction Pruning. The reduction of the top, sides, or individual limbs by means of removal of the leader or longest portion of a limb to a lateral no less than one-third of the total diameter of the original limb, removing no more than one-quarter of the leaf surface.
   F. Hazard Tree. Any tree with a combination of structural defect and/or disease that makes it subject to a high probability of failure, according to the current International Society of Aboriculture's Tree Hazard Evaluation Standards for Hazard Tree Rating, a Professional Certified Arborist's Recommendation, and a proximity to persons or property that is immediately threatening.
   G. Public Tree. Shall mean all trees and woody plants within city parks, rights-of-ways, and open spaces.
   H. Street Tree. Trees growing within the City's street rights-of-ways.
   I. Tree. Means any living woody plant characterized by one or more main stems or trunks and many branches.
   J. Tree Center. A tree's center is determined to be at the base of the tree or trunk where it meets the root ball or existing grade.
   K. Topping. The severe cutting back of limbs to stubs larger than three inches in diameter within the tree's crown to such a degree so as to remove the normal canopy for that particular species, and disfigure the tree. It is not an acceptable tree pruning practice.

City of Poulsbo Master Public Tree Plan

APPENDIX A. POULSBO URBAN FORESTRY STANDARDS AND SPECIFICATIONS MANAUL

3. Scope. The provisions of this Chapter shall apply to the planting, maintenance, removal, and protection of all public trees as defined in this ordinance.

   A. Trees on lands managed by the City of Poulsbo including parks, open space, facilities, and public rights-of-way. Tree removal, pruning and/or planting in these areas shall be subject to review and approval of the City Arborist.
   B. Trees on lands managed by the City of Poulsbo for storm water management purposes. Tree removal, pruning and/or planting in these areas shall be subject to review and approval of the City Arborist.
   C. Trees within critical areas as defined in PMC _____. Tree removal or pruning in these areas will be subject to review and approval of the City Planning Department and City Arborist.
   D. Trees on lands managed by the City of Poulsbo for public benefit and service.

4. Tree Planting.

   A. Tree planting on lands managed by the City of Poulsbo including parks, open space, facilities, and public rights-of-way. Private parties may plant trees on property owned or managed by the City with written permission of the City Arborist. To obtain permission the applicant(s) shall:

      1. Submit a written request to the City a minimum of thirty (30) days prior to the planting.
      2. Prepare a tree planting plan identifying the species, size, and location of trees to be planted. The proposed species, size and locations must be consistent with current and potential uses of the property as determined by City Staff and City Arborist review pursuant to PMC Chapter _____. Street Trees or Zoning Ordinance.
      3. Comply with the presented planting standards and Poulsbo Public Infrastructure Standards and Specifications, and Engineering Department Details.
      4. Underground utilities shall be identified prior to ground breaking, and the approval of any affected utilities secured.
      5. Nuisance Tree Abatement. Any planting of public trees that fails to comply with the standards established within the Urban Forestry Standards and Specifications and is declared a public nuisance by City Staff or City Arborist may be abated pursuant to PMC _____. Hazardous Conditions On Public Street Rights-of-Way or other publicly owned property PMC 3113. Chapter _____.

APPENDIX A. POULSBO URBAN FORESTRY STANDARDS AND SPECIFICATIONS MANAUL

4. Tree Planting.

B. Rights-of-Way Street Tree Spacing and Location Guidelines

The following standards are guidelines to assure minimum impact on streets, sidewalks, utilities, sewers, other infrastructure, and pedestrian and vehicular safety. The guidelines are based on the size of the tree at maturity. All municipal departments may propose modifications to these guidelines in conjunction with the City Arborist's approval.

4. Tree Planting.

RIGHTS-of-WAY STREET TREE SPACING AND LOCATION GUIDELINES

CRITERIA **Spacing and distances refer to a trees center and the number of feet it should be planted from a described constraint.**	**Small Trees**	**Medium Trees**	**Large Trees**
Recommended Spacing between trees (refer to approved street tree list) off-center	15 to 30 feet	Minimum 30 feet	Minimum 40 feet
Planting distance from curb and sidewalk	2 feet	3 feet	5 feet
Planting distance from street corners and or intersections	30 feet	30 feet	30 feet
Planting distance from utility poles	20 feet	20 feet	30 feet
Planting distance from street light poles	20 feet	30 feet	40 feet
Planting distance from hydrants	10 feet	10 feet	15 feet
Planting distance from alleys, driveways	20 feet	20 feet	30 feet
Planting distance behind guardrails	3 feet	3 feet	3 feet
Planting distance from buildings	5 to 10 feet	10 + feet	15 to 30 feet
Planting distance from sewer lines	5 feet	5 feet	10 feet
Planting distance from other underground utilities	3 feet	3 feet	5 feet
Reference City of Poulsbo Approved Street Tree List Planting Recommendations and Associated Site Constraints as part of Section 3., City of Poulsbo Urban Forestry Standards and Specifications Manual.			

C. Planting Guidelines

1. City policy for public trees is to plant "The Right Tree in the Right Place". Site location factors or constraints include: The size of the planting strip, soil conditions, topography, overhead utilities, mature tree canopy height and width, planting site (developed or undeveloped). Species diversity is important to prevent large scale losses through disease or insect susceptibility and maturation.
2. Tree wells cut in walkway area must have a minimum of sixteen (16) square feet. Any variation to a four foot by four foot tree well must have prior approval from the appropriated municipal department.
3. No planting holes shall be dug or prepared until their location is approved by the City Arborist and utility locates have been completed.
4. All planting holes shall be at least fifty (50) percent wider than the root ball of the tree to be planted and at least the depth of the root ball. The tree should be centered in the hole and set at a depth that will allow the base of the trunk to remain free of soil once planted. The upper half of the root ball shall be cleared of wire baskets, burlap, containers, twine, tags, and wire must be removed from the tree prior to backfilling the hole. Containerized and root bag planting stock shall have these items removed from the tree prior to planting. For any containerized stock, circling roots must be loosened prior to planting in the hole.
5. When backfilling the hole, the soil should be tamped firmly but not tightly packed around the roots. All planting holes and cavities between the roots and the surrounding soil should be filled. Once the planting hole is filled with soil, the tree should be watered thoroughly with a minimum of five (5) gallons of water.
6. Staking of new trees may be required during the first year of growth. Stakes and ties should be removed from the tree at the end of the first year. Stakes must be placed outside the rootball area. Stakes shall be made of 2x2 wood and the ties shall be made of plastic lock-link material. Larger caliper trees may require guy wires, straps, duckbill anchors, and other requirements deemed necessary by the City Arborist.
7. All new tree plantings in areas with curbs and/or walks should include an approved root barrier device if deemed necessary by the City Arborist.
8. The soil surfaces surrounding the root system of a newly planted tree should be mulched with a minimum of two (2) inches of organic mulch. Use of recycled composted and screened yard debris as mulch is encouraged.
9. All new tree plantings shall be watered with a minimum of five (5) gallons at a time, at least once a week during the first two growing seasons to become properly established. Additional water should be applied as necessary during periods of extreme drought or summer months. (June-October).

APPENDIX A. POULSBO URBAN FORESTRY STANDARDS AND SPECIFICATIONS MANAUL

C. Planting Guidelines

Quality of Planting Material

10. Plant materials shall conform to American Association of Nurserymen standards for Nursery Stock (current ANSI standards for Grade 1 planting stock). Plant materials shall be of standard quality, true to name and type. Broken, damaged, diseased, or substandard tree stock will not be allowed to be planted in the rights-of-way or other public owned property. Furthermore, planting stock shall have initial branch height of at least six (6) feet above grade. Trees planted must be free from bark damage, decay, sunscald, insect pests, or other objectionable disfigurements, and shall be a minimum of two (2) inches in caliper.
11. The City Arborist or staff may request an inspection of any trees scheduled for planting within rights-of-way and public owned property. The City Arborist or staff has the right to disapprove of any planting stock which does not meet the planting material specifications and guidelines.
12. Street tree planting design within an established residential area shall be at the discretion of the individual property owner, acting in accordance with the specifications for street trees.

5. Tree Pruning and Maintenance

1. Pruning public trees. Private parties may have public trees pruned with written permission from the City Arborist. To obtain permission the applicant(s) shall:

    A. Submit a written request to the City at least thirty (30) days prior to pruning;
    B. The City Arborist and or representative shall respond to the request within fifteen (15) working days upon the date the application was received.
    C. Identify the trees to be pruned and the specific work to be performed;
    D. Pay for all costs associated with the proposed pruning; and
    E. Comply with the pruning standards in the Street Tree Evaluation & Maintenance Standards Section of the manual.
    F. If a contractor is performing the tree work, they must provide proof of insurance, bonds, and business or contractor's license.
    G. Comply with and provide proof of additionally required municipal permits prior to implementing tree work.

D. Tree Pruning and Maintenance

2. Topping and climbing trees with spurs are prohibited. Topping of public trees is prohibited. Climbing spurs may be used to climb a public tree only if it is to be removed, climber emergency rescue, or storm related emergency. Trees severely damaged by storms or other causes, or certain trees under utility wires or other obstructions where other pruning practices are impractical may be exempted from this ordinance at the determination of the City Arborist and or City Representative.
3. Insect and disease abatement. The City may prune, spray, or otherwise maintain public trees in order to control infestations of insects or disease, or to maintain public safety.
4. Application of fertilizers, pesticides or insecticides on public trees is prohibited by private contractors or individuals without written permission from the City Arborist.
5. Tree work within the street rights-of-way may require a right-of-ways obstruction permit issued by the city.
6. The City and or City Arborist shall receive written notice from all utility companies, municipal, county, state or federal agencies and or their contracted representatives for utility line clearance work. The written notice from the utility and or representing contractor shall contain the following:

    A. Submit a report specifying either the circuit, area, or address of work that will take place during the calendar year or specific dates within city limits.
    B. Submit requested removal information for any trees within public rights-of-way per each circuit, areas, or address thirty (30) days prior to beginning work on the specific circuit, area, or address.
    C. Submit notification that utility line clearance work will begin on a specific circuit, area, or address thirty (days) prior to beginning work for the noted circuit.

7. The City Arborist will review submitted information concerning utility line clearance work and respond to utility company or a contracted representative within fifteen (15) working days of receiving their specific circuit, area, or address and associated tree pruning and removal requests.

City of Poulsbo Master Public Tree Plan

APPENDIX A. POULSBO URBAN FORESTRY STANDARDS AND SPECIFICATIONS MANAUL

Pruning Guidelines

8. All pruning associated with public owned trees shall comply with current National Arborist Association pruning standards. Crown reduction pruning shall only be allowed when the City Arborist agrees that such pruning is necessary to reduce a hazardous condition.
9. When clearance, skirting or window pruning is performed, no more than thirty (30) percent of the live crown may be removed in any two (2) year period.
10. All root pruning associated with clearing, grubbing, and construction shall comply to the following:
    A. Proposed root pruning work on publicly owned trees shall be noted on site plans, landscape plans, and grading and clearing plans.
    B. Excavation activity within a tree's critical root zone (area beneath the canopy of a tree), as well as pruning of roots larger than three (3) inches in diameter shall be completed in the presence of the City Arborist or Staff. The City Arborist or City Representative shall be notified two (2) working days prior to commencing work.
    C. The critical root zone shall not be exposed overnight. If exposure is to occur, then wet burlap shall be applied to the exposed surface and root area.
    D. If root pruning is necessary, preserve the root bark ridge, which is similar in structure and function to the branch bark ridge. Directional root pruning is the recommended technique and should be used during hand excavation around tree roots. Directional root pruning properly cuts the target root to a lateral root that is growing downward or in a favorable direction.
    E. All roots identified for pruning or removal shall be cut cleanly with sharp hand tools. It is recommended that hand pruners, loppers, and/or appropriate handsaw be used. No wound dressing shall be used.

City of Poulsbo Master Public Tree Plan

APPENDIX A. POULSBO URBAN FORESTRY STANDARDS AND SPECIFICATIONS MANAUL

D. Tree Pruning and Maintenance

11. All pruning shall be performed in such a manner that the trees are maintained in optimum health as determined by the City Arborist.
12. All tree related maintenance shall adhere to the safety requirements set forth in the most current edition of the American National Standard for Tree Care Operations.
13. The City shall formulate a plan and schedule to periodically review/monitor all public tree resources for possible maintenance needs.
14. The City shall adhere to the maintenance standards herein, unless, otherwise modified by the City Arborist.

6. Tree Removal

1. Hazard Trees – The City may remove any public tree determined to be a hazard by the City Arborist or representative according to the current International Society of Arboriculture's Hazard Tree Evaluation Form and Diagnostic Procedures.
2. All approved public tree removal work shall be performed by a licensed, bonded, and insured contractor.
3. Public tree removal process. No public owned tree shall be cut down, killed, or removed for any reason without complying with the following procedure:
    A. File an application to the City Arborist and submit the application with the requested removal(s) to the City Arborist a minimum of thirty (30) days prior to anticipated starting date.
    B. The City Arborist and or representative shall respond to the permit application within fifteen (15) working days upon the date the application was received.
    C. Mitigate the loss of the removal(s) pursuant to the mitigation section of this ordinance and PMC _____.

6. Tree Removal

4. Public tree removal, when allowed. A public tree removal request (permit) shall be approved only when one or more of the following conditions exist as determined by the City Arborist:
    A. The identified tree(s) are infected with an epidemic insect or disease for which removal is the recommended practice to prevent transmission to other trees;
    B. The tree(s) is a public nuisance;
    C. The tree(s) is determined to be a safety hazard that pruning, transplanting, or other treatments cannot correct;
    D. The tree(s) severely interferes with the growth and development of a more desirable tree;
    E. Required infrastructure work or improvements would kill the tree(s) or render it a hazard.
    F. The removal of the tree(s) is necessary to implement or maintain the vegetation management plan for a specific area, as approved by the City Arborist;
    G. The removal of the tree(s) is necessary to provide the only reasonable access to an adjacent property.

7. Public Tree Loss Mitigation

1. Mitigation is required if a public tree is removed, injured, or damaged by a private or public party, unless specifically ruled otherwise by the City Arborist. The mitigation value shall be calculated by the City Arborist.

City of Poulsbo Master Public Tree Plan

APPENDIX A. POULSBO URBAN FORESTRY STANDARDS AND SPECIFICATIONS MANAUL

8. Vegetation Management Plans for Public Trees

1. Vegetation Management Plans. When a private or public party requests the removal of a public tree(s), the applicant shall be required to develop, present, and implement (if approved) a vegetation management plan for the property, and receive a written permit (PMC ____Street Trees.) The applicant shall be required to pay all costs associated with the development and implementation of such plan.

   The plan shall ensure:

   A. Protection of slopes and soil stability on the property;
   B. Protection of critical areas as defined in PMC ____.
   C. Protection of Heritage trees or trees identified as significant;
   D. City maintenance costs for the property are maintained at or below the current levels,
   E. Compliance with all applicable federal, state, and local regulations.
   F. Opportunity for public review and comments.

   City staff or the City Arborist may require that the vegetation management plan be prepared by qualified professionals.

City of Poulsbo Master Public Tree Plan

APPENDIX A. POULSBO URBAN FORESTRY STANDARDS AND SPECIFICATIONS MANAUL

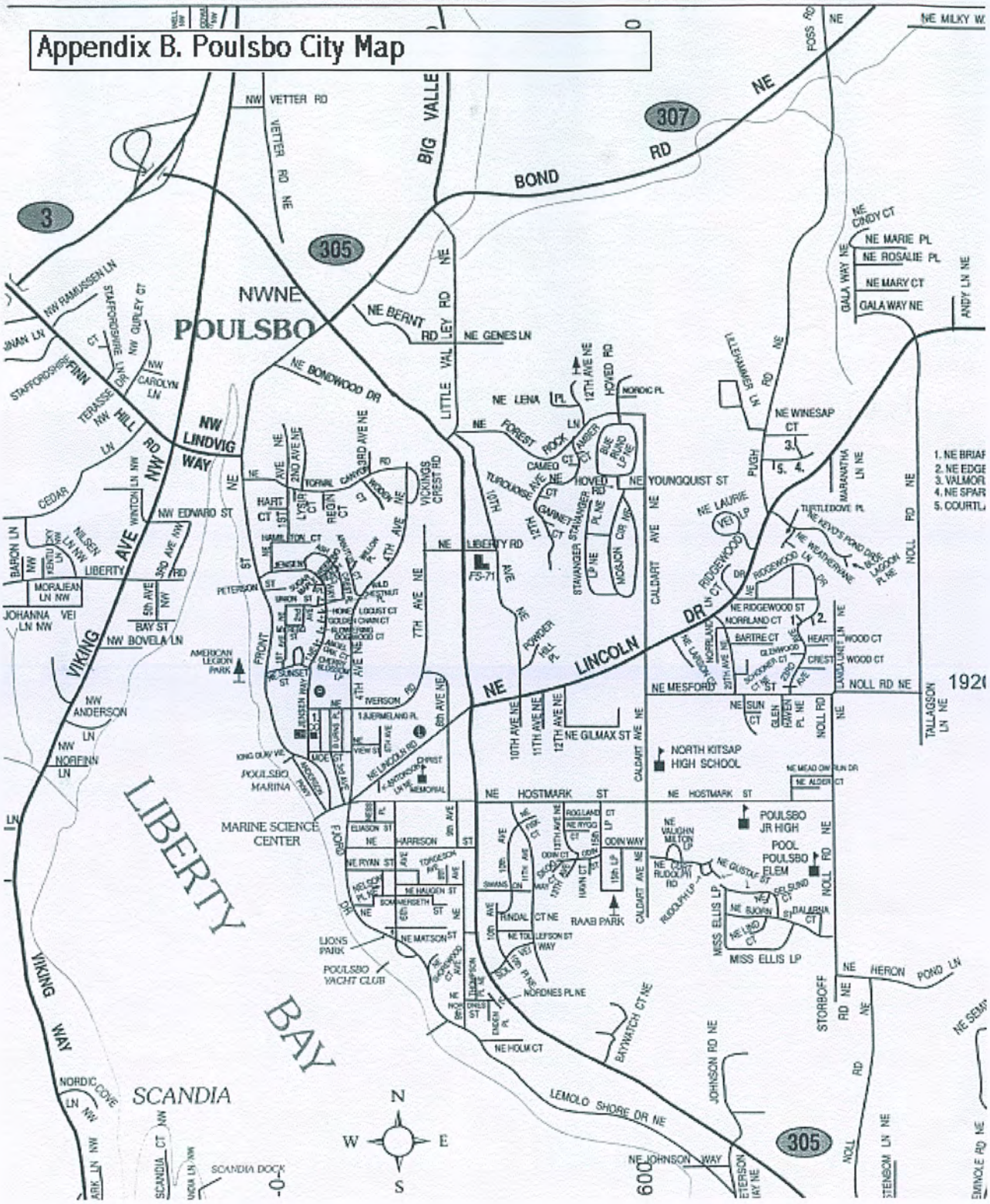
9. Tree Protection

No person shall abuse, destroy, or mutilate any public tree. This includes breaking stakes or supports to the tree, or causing or encouraging any burning near or around the trunk. No person shall deface or injure a public tree by attaching any sign or notice, nails, screw, or other such devices to it.

1. The following presents the recommended procedures for protecting public trees during construction.

    A. Site, landscape or street tree plans in conjunction with development shall show all existing public trees. Public trees to be retained and those to be removed shall be indicated. Every effort should be made to preserve desirable trees.
    B. During the erection, repair, alteration, or removal of any buildings or structure, public trees to be retained shall be marked prominently. Where retained trees might be adversely affected within the critical root zone or canopy area, they shall be protected by fencing.
    D. Protection fencing locations for retained trees shall be determined by the City Arborist.
    C. Protective fencing shall be erected and maintained along the outer edge and completely surrounding the protected area of all retained trees or groups of trees. Fences shall be constructed of chain link at least four feet high, unless other types of fencing is authorized by the City Arborist.
    E. No person may conduct any activity within the protective fenced area around the retained trees, including, but not limited to, parking equipment, placing solvents, storing building materials and soil deposits, dumping concrete washout and locating burn holes.
    F. Protective fencing shall stay in place until the City Arborist authorizes the removal or a final certificate of occupancy is issued, whichever occurs first.
    G. In the interest of preserving public trees, Public Works Department will coordinate with the City Arborist by notifying of any applications for new curb, gutter, walkway or driveway installations, or other improvements which might require the removal of, or cause injury to, any public tree, or interfere with the goals of the Master Public Tree Plan.

Appendix B. Poulsbo City Map



City of Poulsbo, Urban Forest Inventory Summary

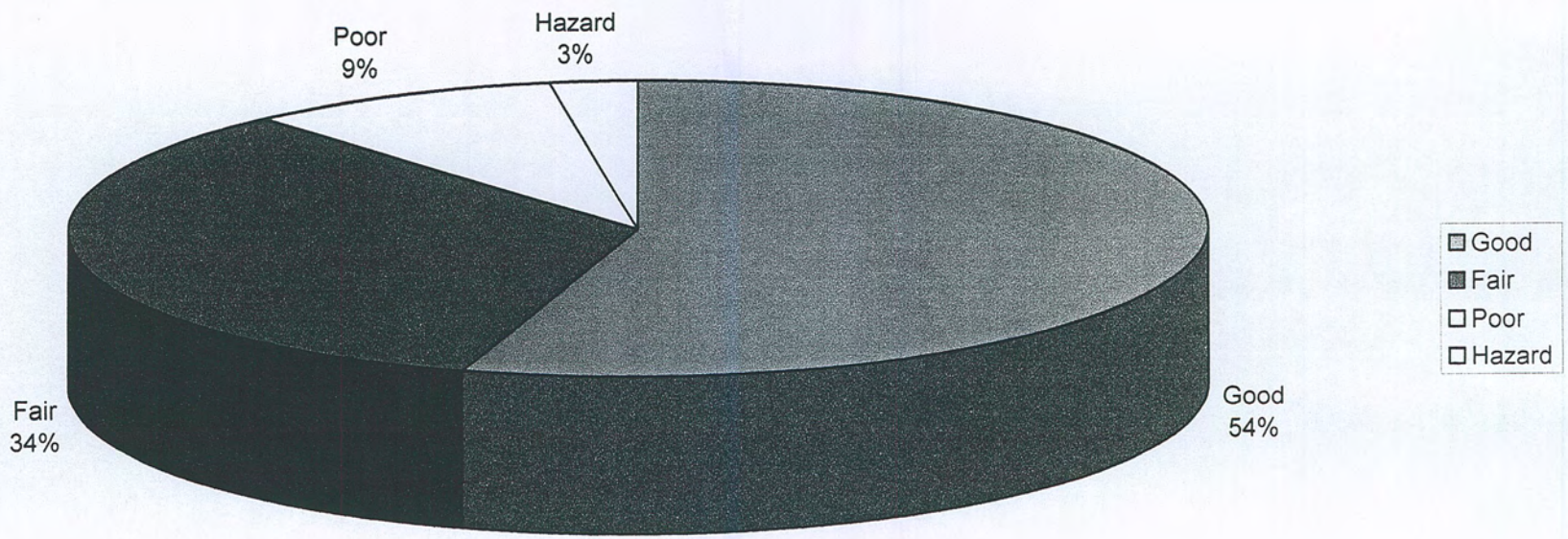
Appendix D. Work Needs

SIZE	Tree Removal	Clearance Pruning	Structure Pruning	Standard Pruning	Safety Pruning	Monitoring	Grand Total
0-4"	7	13	61	104	0	48	233
4-12"	5	32	56	67	0	26	186
12-24"	9	5	39	43	1	25	122
24"+	12	0	0	29	7	9	57
Total	**33**	**50**	**156**	**243**	**8**	**108**	**598**

Maintenance

SIZE	Mulch	Cable Support	Grand Total
0-4"	186	0	186
4-12"	81	0	81
12-24"	25	3	28
24"+	4	0	4
Total	**296**	**3**	299

Appendix G. City of Poulsbo - Public Tree Condition



City of Poulsbo Master Public Tree Plan

APPENDIX I. PUBLIC TREE HAZARD RATING SYSTEM

Policy Guidelines for Tree Retention and Removal.

Trees in Public Areas

- Guidelines for leaving or removing trees
- Hazard rating system/point system
- Annual inventory/overview based on these guidelines
- Contractor guidelines for maintenance

Long-Range Planning for Developed Public Sites

Standardized evaluation criteria for leaving or removing trees and hazard rating system/point system.

Objectives

1) present the need to develop long term management plans for developed sites and outline a suitable process;
2) present a standard for evaluation tree hazards evaluation;
3) provide an up-to-date field for accurate identification of insects and diseases and their damages;
4) introduce methods for evaluating the probability of tree failure in the form of a tree collapse model.
5) present a standard for recording developed site evaluations.

The goals of hazard tree evaluation and hazard management are to strike a balance between maximizing public safety, minimizing costs, and maintaining sustainability of the recreation resource.

Establishing a Baseline Hazard Tree Evaluation System

The development of a baseline evaluation system requires a systematic approach that should be organized in planning sessions before conducting evaluations.

The following represents a suggested approach toward developing a hazard tree detection and correction program for public property.

I. Stratify the area into risk zones on a map, e.g.:

- 1 = Low risk areas such as woods, open fields or areas with trees and low foot traffic and no property, as well as roads leading into public facilities.
- 2 = Moderate risk areas, such as foot paths, open picnic areas without fixed picnic tables, etc.
- 3 = High risk areas, such as picnic grounds, playgrounds, restrooms, shelters, and other structures, parking lots, interpretive signs and kiosks along trails, and any other places where people might congregate.

City of Poulsbo Master Public Tree Plan

APPENDIX I. PUBLIC TREE HAZARD RATING SYSTEM

II. Annual Site Examinations

Timing and frequency of examinations may vary, but all developed sites should be reconnoitered for new evidence of hazardous trees at least annually. In addition to the minimal annual exam, sites should be examined after a recent storm occurrence and once the severe weather season(s) have passed.

Annual site exams should be done systematically. They normally consist of a walk-through examination of the zones, where each tree and all areas of the developed site are observed for new evidence of hazard or defect. All trees within striking range of a target, either fixed or transitory, should be examined.

Generally, only trees greater than 6 inches diameter at breast height (DBH) should be examined. Smaller trees cause little damage and are considerably less prone to failure under most conditions. Under certain circumstances, trees less than 6 inches in diameter may require periodic inspection if their proximity to a particularly sensitive target (a target that likely would be damaged by impact) suggests unacceptable hazard, but this is exceptional.

III. Evaluate and inspect each individual tree in high hazard zones.

- Document the fact that all trees on the site have been inspected, not just those deemed hazardous. It is not necessary to number each of the trees unless there is that need for a 100% inventory, but if the personnel and funding are available, this is the best way to document that each tree was inspected.

- Trees should be inspected in a systematic fashion, including roots, trunk and crown. It doesn't matter in what order these are examined, as long as the inspector is consistent. Inexperienced hazard tree inspectors should work in teams of two or more.

IV. Promptly implement any corrective actions to be taken. If resources are limited, address high priority hazardous trees first.

Components of Tree Hazard Analysis

Hazard rating consists of inspecting potentially hazardous trees and estimating the probability of failure and striking targets during the time between examinations, ranking by risk from high to low, and prioritizing for treatment. Since it is not reasonable to eliminate all hazards from a recreation or public site, municipal staff must decide what constitutes an acceptable level of risk, and treat or mitigate as necessary to achieve that level while minimizing disturbances and impacts on aesthetics and recreation enjoyment. This not only requires inspecting each tree in the context of its location in the area, it also requires documentation or tracking needed to maintain an ongoing record of tree condition and date of examination or re-evaluation. Tracking maximizes the economic efficiency of hazard monitoring programs in the long run since only those trees needing re-evaluation in a given year are evaluated. A systematic tracking system also minimizes program disruptions or discontinuities in the event of personnel changes.

The degree to which a tree is hazardous hinges on four factors:

(1) its potential for failure;
(2) its potential for striking a target in the event of failure;
(3) the potential that serious damage will result; and
(4) the value of the potential target(s)

City of Poulsbo Master Public Tree Plan

APPENDIX I. PUBLIC TREE HAZARD RATING SYSTEM

Minimum value for any factor results in significantly reduced risk.

Potential for Failure

The job of estimating the potential for tree failure (the likelihood of failure) is difficult because of the many interacting variables that come into play, but it can be done with reasonable assurance. Tree size, age, form, species, condition, and location must all be considered along with plant association, successional stage, stand structure, stand species composition, climatic and soil conditions, and presence and extent of defect. Failure potential is estimated by examining a tree, determining the factors and conditions that contribute to failure or weakening, and estimating the likelihood that those factors and conditions will simultaneously occur before the next inspection period. Variables that are evaluated include:

(1) the lean of a tree and factors that contributed to the lean;
(2) whether a tree has recently been root-sprung (lateral root anchorage has been compromised);
(3) whether trees that leaned over some time ago have righted their tops subsequently and have acceptable lateral anchorage;
(4) the presence of forked tops or a recent weakening of a forked top;
(5) the presence and extent of lethal or weakening root, stem, or branch disease or insect infestation;
(6) the season of the year when high winds are likely and its relationship to the visitor-use season;
(7) the direction of prevailing winds and the potential for wind eddies;
(8) the presence of damage caused by recreationists, roadbuilding or maintenance activities, installation of septec systems and drainage fields, or tree poisoning by effluent from waste disposal stations or restrooms;
(9) the presence of dead, broken, or hanging branches;
10) the presence of basal scars, trunk injuries, lightning strikes, wind shake, frost cracks, cankering, dead tops, broken tops, V-shaped branch crotches, stem swellings, undermined roots, excessive soil compaction, slime flux, basal resinosis, mechanical injury, crooked stem, and;
11) evidence of root disease infection and mortality, species composition of adjacent trees, opportunities for lateral spread of the disease, and presence of natural barriers to disease spread.

City of Poulsbo Master Public Tree Plan

APPENDIX I. PUBLIC TREE HAZARD RATING SYSTEM

A Standard for Rating

The standard system suggested here incorporates two important components. The first component addresses the potential for tree failure within a specified time period. Failure potential is rated on a scale of 1 to 4 in order of increasing potential:

1 = VERY LOW FAILURE POTENTIAL
Sound trees will not likely be exposed to extremes of weather.

2 = LOW FAILURE POTENTIAL
Trees with only minor defects (stem decay with more than an acceptable rind of sound wood), in areas sheltered from weather extremes, or sound trees likely be exposed to weather extremes (wind, snow loads).

3 = MEDIUM FAILURE POTENTIAL
Trees with moderate defects (at or near the threshold of acceptable rind thickness), or that are growing in shallow soil, are shallow-rooted, or are exposed to high water table, and that will likely to be exposed to strong winds and snow, (extent of defect alone does not justify removal or hazard mitigation); or highly defective trees in areas well-sheltered from weather extremes; or highly defective trees exposed to weather extremes which only occur in the off season.

4 = HIGH FAILURE POTENTIAL
Highly defective trees in unsheltered areas or trees with root anchorage limited by erosion, excavation, undermining, or adverse soil conditions and dead trees or those with root disease.

The second component of hazard rating addresses damage potential in the event of a failure. This portion of the rating must incorporate the determined stratified risk zones and the likelihood that a failed tree or tree part will strike a target within that zone. Furthermore, determine of the likelihood of damage, and an estimate of target value. Damage potential is rated on a scale of 1 to 4 in order of increasing potential:

1 = NO DAMAGE
Target impact will involve only very small tree parts; or there is no chance that failure parts will cause damage when they impact a target.

2 = MINOR DAMAGE
Failure of only small tree parts, and impacts in occupied areas are indirect; or failures will likely occur when area is unoccupied; damage when it occurs, is to a low value target(s).

3 = MEDIUM DAMAGE
Failure involves small trees or medium-sized tree parts, and impacts will likely occur in areas with targets; impacts will be direct, and damage will likely be moderate, and target value is moderate.

4 = EXTENSIVE DAMAGE
Failure involves medium to large tree parts or entire trees, and impacts will be direct in areas with targets; a target value is high, and damages to property will likely be severe; or serious personal injury or death is likely to result.

City of Poulsbo Master Public Tree Plan

APPENDIX I. PUBLIC TREE HAZARD RATING SYSTEM

The hazard classification for each individual tree is determined by combining the values from the two parts of the rating system. Seven risk classes ranging from 2 to 8 are possible. Treatment priorities by risk class are as follows;

Risk Class	Treatment Priority
8	very high
7	high
6	moderate
2-5	low

Establishing a Semi-Permanent Tree Record

Whether or not a tree has a defect, a complete tree record should be developed at the time of the inventory and updated with each re-evaluation. The tree record should contain all the data needed to discover trends for individual trees. When observed in aggregate, stand level trends will become obvious. Each tree record form should have columns for each parameter that is to be measured or observed periodically, and rows to enter the observations for each examination. The street tree inventory field data record sheets and the volunteer training manual could be used for the development of an inventory system:

The following information should be recorded:

1) identification of the public facility or public park area
2) name of data collection person
3) date of evaluation or inventory
4) tree identification number
5) tree species
6) tree location (map, determine reference point)
7) tree diameter at breast height
8) tree height
9) symptoms of root problems (injury, loss of anchorage, disease)
10) cause of root problems
11) cause of butt problems
12) symptoms of stem problems
13) thickness of remaining sound wood (rind)
14) other problems, dead or hanging limbs, dead top
15) risk rating/tree value rating/hazard rating
16) recommended treatment
17) date treatment accomplished
18) date of next scheduled examination;

This information can be compiled into a permanent database. Answer files may be generated annually, listing the trees indicated in prior inspections that are to be monitored in a given year. Files would provide the locations of specific trees relative to reference points, their species, size, and type of defect, their prior extent of defect, the appropriate monitoring interval, prior hazard and risk ratings, and recommended treatments.

City of Poulsbo Master Public Tree Plan

APPENDIX J. PUBLIC TREE MAINTENANCE COSTS

Guide to Calculating Tree Maintenance Cost

1) Each tree had an associated work needs class identified as it was inventoried.

These classes included:

Tree removal, Clearance Pruning, Structure pruning, Standard pruning, Safety pruning, Mulch, Cable Support & Monitoring.

2. The tree inventory was then summarized. The summary identifies the number of trees in each work needs class by diameter class. (This summary is attached in the table labeled, **City of Poulsbo, Urban Forest Inventory Summary.**

3. Then an estimate of the number of labor minutes per work task was developed. This information was based on local conditions and data published in the September/October, 2001 Journal of the Society of Municipal Arborists. (This information is attached in the table labeled **City of Poulsbo, Urban Forest Maintenance Management System, Estimated Labor per Work Task.)**

4. The summarized tree inventory and labor estimates were then combined, resulting in an estimate of the "man-hours" of labor required to perform the various work tasks in the City of Poulsbo.

5. Finally this work was prioritized, in the attached table, labeled **Tree Maintenance Cost Summary.** It includes:

a. "Safety related priority work" – These are all tasks that should be performed as soon as possible to ensure health and human safety. These are all one-time expenditures.

b. "Non – Safety Priority work – These tasks are necessary primarily for tree health and are also one time expenditures.

c. On-going maintenance - This is preventative tree maintenance work. Each tree should be either structure and/or standard pruned once every 3-5 years, to prevent the trees from becoming a problem and to ensure their health and longevity.

6. The "Tree Maintenance Cost Summary" provides both the estimated number of "man-hours" and an estimated cost for the work if it were performed by a contract crew. Since the estimated man-hours is equivalent to the amount of time it would take one person to perform each task, the cost in dollars can be easily adjusted by changing the cost of the crew per hour ($80.00 per hour was used in this example) and by changing the number of people on the crew (2 person crew was used in this example).

APPENDIX J. PUBLIC TREE MAINTENANCE COSTS

Guide to Calculating Tree Maintenance Cost

Following is an example:
Safety Pruning 8 trees, 18.3 man-hours to perform work.

Crew 1 (2 person @ $80/hour) = (18.3 man hours / 2 person crew) * $80 / hour = $732.00
Crew 2 (3 person @ $120/hour) = (18.3 man hours / 3 person crew) * $120 / hour = $732.00
Crew 3 (3 person @ $100/hour) = (18.3 man hours / 3 person crew) * $100 / hour = $610.00

City of Poulsbo Master Public Tree Plan

APPENDIX J. PUBLIC TREE MAINTENANCE COSTS

Public Tree Maintenance Cost Summary

Safety Related Priority Work
(One time expense)

Work Task	Number of Trees	Estimated Man-hours	Estimated Cost if Contracted @$80/hour (2 person crew)
Tree Removal	33	222	$8,880.00
Safety Pruning	8	18.3	$732.00
Cable Support	3	7.3	$292
Clearance Pruning	50	28.2	$1128.00
Safety Related Work Total =		**275.8**	**$11,072.00**

Non Safety Related Priority Work
(One time expense)

Work Task	Number of Trees	Estimated Man-hours	Estimated Cost if Contracted @$80/hour (2 person crew)
Crown Raise	4	2.6	$104.00
Mulch	296	66.1	$2644.00
Non-Safety Related Work Total =		**68.7**	**$2,788.00**

On-going Maintenance (Annual Expense)

Work Task	Number of Trees	Estimated Annual Man-hours	Estimated Annual Cost if Contracted @$80/hour (2 person crew)
Structure Pruning (Each Tree Pruned once every 3-5 years)	156	36.9	$1476.00
Standard Pruning (Each Tree Pruned once every 5 years)	243	78.4	$3136 (At $60/hour)
Monitoring	108	28.2	$1692.00
On-going Maintenance Annual Work Total =		**143.5**	**$6,344.00 / year**

APPENDIX K. Master Street Tree List & Tree Spacing Standards

Table 1 - "Medium Trees"

SCIENTIFIC NAME	COMMON NAME	CULTIVARS	TREE HEIGHT	TREE WIDTH	MINIMUM PLANTING STRIP WIDTH
Ostrya virginiana	Hop Hornbeam /Ironwood		30'	20'	4'
Oxydendron arboreum	Sourwood/Sorrel Tree		30'	20'	6'
Carpinus betulas fastigiata	European Hornbeam	Pyramidal Hornbeam	35'	25'	4'
Pyrus calleryana	Callery Pear	Chanticlear	35'	28'	4'
Carpinus betulas	Pyramidal European Hornbeam		35'	25'	6'
Acer campestre	Hedge Maple		35'	35'	6'
Acer campestre	Hedge Maple	Evelynn	35'	30'	6'
Acer rubrum	Red Maple	Autumn Flame	35'	35'	8'
Acer truncatum x A.platanoides	Shangtung Hybrid Maple	Pacific Sunset	35'	25'	8'
Acer truncatum x A.platanoides	Red Maple	Norwegian Sunset	35'	25'	8'
Fraxinus pennsylvania	Green Ash	Urbanite	35'	25'	8'
Fraxinus pennsylvania	Green Ash	Skyward	35'	20'	8'
Quercus macrocarpa	Bur Oak		35'	25'	8'
Quercus alba	White Oak		35'	25'	8'
Quercus garryana	Oregon White Oak		35'	30'	8'
Ginkgo biloba	Ginkgo (male)	Lakeview	35'	20'	6'
Ginkgo biloba	Ginkgo (male)	Princeton Sentry	35'	20'	6'
Magnolia kobus	Kobus Magnolia	Merrill Leonard Messel	35'	25'	6'
Acer platanoides	Norway Maple	Columnar	35'	15'	6'
Magnolia denudata	Heptapeta	Yulan Magnolia	35'	30'	6'
Phelodendron amurense	Amur Corktree	Shademaster	35'	35'	8'
Quercus muehlenbergii	Chinkapin Oak		35'	25'	8'
Quercus phellus	Willow Oak		35'	35'	8'
	Ruby Red Horsechestnut	Briotti	35'	25'	8'
Ginkgo biloba	Ginkgo (male)	Autumn Gold	35'	30'	8'
Koelreuterra paniculata	Goldenrain Tree		35'	35'	8'
Acer platanoides	Norway Maple	Crimson King	35'	25'	8'
Acer platanoides	Norway Maple	Olmsted	35'	20'	8'
Acer platanoides	Norway Maple	Crimson Sentry	35'	15'	8'
Acer platanoides	Norway Maple	Olmsted	35'	20'	8'
Cercidiphyllum japonicum	Katsuratree		35'	35'	8'
Fraxinus americana	Empire Ash		50'	20'	6'

APPENDIX K. Master Street Tree List & Tree Spacing Standards

Table 1 - "Large Trees"

SCIENTIFIC NAME	COMMON NAME	CULTIVARS	HEIGHT	WIDTH	PLANTING
Malus transitoria	Crabapple	Tschonoskii	40'	20'	4'
Acer rubrum	Red Maple	Bowhall	40'	20'	6'
Acer rubrum	Red Maple	Scarlet Sentinal	40'	20'	6'
Acer rubrum	Red Maple	Karpick	40'	20'	6'
Pyrus calleryana	Callery Pear	Chanticlear	40'	20'	6'
Pyrus calleryana	Callery Pear	Aristocrat	40'	30'	6'
Acer rubrum	Red Maple	October Glory	40'	35'	8'
Celtis laevigata x occidentalis	Magnifica Hackberry	Magnifica	40'	40'	8'
Corylus colurna	Turkish Hazelnut		40'	25'	8'
Liquidambar styraciflua	Sweetgum	Worpelsdon, Festival, Burgendy	40'	30'	8'
Celtis occidentalis	Hackberry	Prairie pride	40'	40'	8'
Eucommia ulmoides	Hardy Rubber Tree		40'	30'	8'
Fraxinus americana	White Ash	Autumn Applause	40'	25'	8'
Quercus rubra	Red Oak		40'	30'	8'
Quercus coccinea	Scarlet Oak		40'	30'	8'
Gleditsia triacanthos	Honeylocust	Halka	40'	40'	8'
Quercus acutissima	Sawtooth Oak		40'	45'	8'
Betula jaquemontii	Jaquemonti Birch		40'	30'	8'
Quercus bicolor	Swamp White Oak		40'	35'	8'
Acer platanoides	Norway Maple	Parkway	40'	25'	8'
Acer saccharum	Sugar Maple	Fairview	40'	50'	8'
Acer saccharum	Sugar Maple	Goldspire	40'	13'	8'
Aesculus hippocastanum	Baumann Horsechestnut	Baumannii	40'	35'	8'
Castanea mollissima	Chinese Chestnut		40'	35'	8'
Castanea sativa	Spanish Chestnut		40'	35'	8'
Nyssa sylvatica	Black Gum		40'	35'	8'
Tilia cordata	Corzan	Corinthian	40'	20'	8'
Tilia euchlora	Crimean Linden		40'	30'	8'
Tilia platyphyllos	Bigleaf Linden		40'	30'	8'
Quercus crimschmidt	Crimsonspire Oak		45'	15'	6'
Quercus robur	English Oak	Fastigiata	45'	15'	6'
Acer rubrum	Red Maple	Red Sunset	45'	35'	8'
Fraxinus pennsylvania	Green Ash	Marshall	45'	30'	8'
Fraxinus pennsylvania	Green Ash	Summit	45'	40'	8'
Fraxinus americana	White Ash	Autumn purple	45'	40'	8'
Fraxinus americana	White Ash	Champaign County	45'	30'	8'
Quercus robur	English Oak		45'	15'	8'

APPENDIX K. CITY OF POULSBO MASTER STREET TREE LIST

There are many site constraints that may limit the species of trees that can be planted. The following are typical site constraints that are associated with an urban street tree planting.

~ Sidewalk width.
~ Rooting space (tree pit size, planting strip width)
~ Building setback (distance from curb)
~ Canopy or Building overhang (distance from curb)
~ Signage/Windows or Entryways (placement, size, use, safety)
~ Soils
~ Climate
~ Pedestrian Clearance
~ Underground and Overhead Utilities
~ Tree (root and crown growth, maintenance, aesthetics, etc.)
~ Vehicle Parking
~ Site Clearance

Tree Size Abbreviations: SM = small, MED. = medium, LRG = large

APPENDIX K.
Master Street Tree List & Tree Spacing Standards

This chapter includes the Master Street Tree List and Tree Spacing Standards. The purpose behind having a master street tree list is to ensure that any street tree that is planted in the City right-of-way is appropriate for the planting site, in terms of mature size, rooting habits, etc. The tree spacing standards are designed so street trees will not interfere with site clearance triangles, traffic signs/signals, street lights, or other utilities.

Table 1 - "Small Trees"

SCIENTIFIC NAME	COMMON NAME	CULTIVARS	TREE HEIGHT	TREE WIDTH	MINIMUM PLANTING STRIP WIDTH
Acer circinatum	Vine Maple		15'	15'	6'
Acer platanoides	Norway Maple	Globe	15'	18'	8'
Malus transitoria	Crabapple	Red Jewel	15'	10'	9'
Sorbus tianshanica	Mountain Ash	Red Cascade Coral Fire	16'	15'	6'
Acer grandidentatum	Rocky Mt. Glow Maple	'Schmidt'	25'	15'	8'
Malus transitoria	Crabapple	Adirondack	18'	20'	6'
Malus transitoria	Crabapple	Golden Raindrops	18'	20'	8'
Acer tartaricum	Tatarian Maple		25'	20'	4'
Cornus kousa chinensis	Kousa Dogwood	Milky Way	20'	15'	6'
Syringa reticulata	Ivory Silk Tree Lilac	Ivory Silk	20'	25'	6'
Prunus cerasifera	Flowering plum	Mt. St. Helens	20'	15'	8'
Prunus cerasifera	Flowering plum	Krauter Vesuvius Thundercloud	20' 20'	15' 20'	8' 8'
Acer palmatum	Japanese Maple	'Butterfly'	12'	6'	6'
Prunus serrulata	Flowering Cherry	Royal Burgundy	20'	10'	9'
Amelanchier x grandiflora	Serviceberry	Princess Diana	20'	15'	4'
Amelanchier x grandiflora	Serviceberry	Cole's Select	20'	15'	4'
Amelanchier x grandiflora	Serviceberry	Robin Hill	20'	15'	4'
Acer grisium	Paperbark Maple		20'	15'	6'
Carpinus caroliniana	American Hornbeam		20'	20'	6'
Magnolia	Magnolia Hybrid	Galaxy	20'	15'	6'
Acer platanoides	Norway Maple	Globe	20'	20'	8'
Malus transitoria	Crabapple	Prairifire	20'	8'	9'
Sassafras albidum	Sassafras Tree		25'	25'	6'
Prunus x yeodoensis	Flowering Cherry	Akebono Daybreak	25'	25'	8'
Crataegus crus-galli	Thornless Cockspur Hawthorn		25'	13'	9'
Crataegus phaenopyrum	Washington Hawthorn		25'	10'	9'
Acer henryi	Henry Maple		25'	25'	4'
Styrax japonicus	Japanese snowbell		25'	25'	6'
Acer platanoides	Norway Maple	Crimson Sentry	25'	15'	8'
Acer griseum	Paperbark Maple		25'	20'	8'
Crataegus x lavallei	Lavalle Hawthorn		28'	25'	6'

APPENDIX K. Master Street Tree List & Tree Spacing Standards

Table 1 - "Large Trees, Cont."

SCIENTIFIC NAME	COMMON NAME	CULTIVARS	HEIGHT	WIDTH	PLANTING
Ulmus parvifolia	Chinese Elm	Dynasty Lacebark Elm	45'	35'	9'
Tilia americana	Basswood	Legend	45'	35'	6'
Tilia cordata	Little Leaf Linden	Chancole	45'	30'	6'
Tilia cordata		Greenspire	45'	30'	6'
Betula nigra	River Birch	Heritage	45'	30'	8'
Acer platanoides	Norway Maple	Schwedleri	45'	35'	8'
Acer saccharum	Sugar Maple	Green Mountain	45'	35'	8'
Castanea dentata	American Chestnut		45'	35'	8'
Tilia heterophylla	Bee Tree Linden		45'	35'	8'
Fraxinus quadrangulata	Blue Ash		45'	30'	8'
Quercus robur	Skymaster Eng. Oak	Pyramich	50'	25'	6'
Acer rubrum	Red Maple	Schlesinger	50'	45'	8'
Platanus acerifolia	London Plane	Bloodgood	50'	40'	9'
Zelkova serrata	Zelkova	Green Vase	50'	40'	9'
Tilia americana	Basswood	Fastigiata	50'	25'	6'
Tilia cordata	Fairview	Fairview	50'	25'	6'
Tilia x flavescens		Glenleven	50'	35'	6'
Quercus palustris	Pin Oak		50'	35'	8'
Acer platanoides	Norway Maple	Deborah	50'	45'	8'
Acer platanoides	Norway Maple	Emerald Lustre	50'	40'	8'
Acer platanoides	Norway Maple	Emerald Queen	50'	40'	8'
Acer platanoides	Norway Maple	Summershade	50'	40'	8'
Magnolia acuminata	Cucumber tree		50'	35'	8'
Tilia americana	Basswood	Redmond	50'	35'	8'
Fraxinus pennsylvania	Green Ash	Patmore	55'	45'	8'
Fagus sylvatica	European Beech	Dawyckii Fistigiata	60'	15'	4'
Liriodendron tulipifera	Tulip-tree		60'	35'	8'

APPENDIX L. CITY OF POULSBO PARKS & RECREATION MASTER TREE LIST

CITY OF POULSBO PARKS AND RECREATION TREE LIST				
SCIENTIFIC NAME	COMMON NAME	CULTIVARS	HEIGHT	WIDTH
Abies amabilis	Pacific Silver Fir		80'	35'
Abies grandis	Grand Fir		100'	35'
Abies procera	Noble Fir		80'	40'
Acer buergeranum	Trident Maple		20'	20'
Acer campestre	Hedge Maple		35'	35'
Acer campestre	Hedge Maple	Evelynn	35'	30'
Acer circinatum	Vine Maple		15'	15'
Acer henryi	Henry Maple		25'	25'
Acer griseum	Paperbark Maple		25'	20'
Acer palmatum	Butterfly Japanese Maple	Butterfly	18'	8'
Acer palmatum	Weeping Green Japanese Maple	Viridis	6'	8'
Acer palmatum	Japanese Maple	Bloodgood	18'	18'
Prunus serrulata	Flowering Cherry	Kanzan	18'	15'
Acer palmatum	Japanese Maple		20'	24'
Acer platanoides	Norway Maple	Globe	15'	18'
Acer ginnala	Amur Maple	Flame	20'	20'
Acer macrophyllum	Bigleaf Maple		55'	50'
Acer platanoides	Norway Maple	Globe	20'	20'
Acer platanoides	Norway Maple	Crimson Sentry	25'	15'
Acer platanoides	Norway Maple	Columnar	35'	15'
Acer platanoides	Norway Maple	Crimson King	35'	25'
Acer platanoides	Norway Maple	Olmsted	35'	20'
Acer platanoides	Norway Maple	Crimson King	35'	25'
Acer platanoides	Norway Maple	Crimson Sentry	35'	15'
Acer platanoides	Norway Maple	Olmsted	35'	20'
Acer platanoides	Norway Maple	Parkway	40'	25'
Acer platanoides	Norway Maple	Schwedleri	45'	35'
Acer platanoides	Norway Maple	Deborah	50'	45'
Acer platanoides	Norway Maple	Emerald Lustre	50'	40'
Acer platanoides	Norway Maple	Emerald Queen	50'	40'
Acer platanoides	Norway Maple	Summershade	50'	40'
Acer rubrum	Red Maple	Autumn Flame	35'	35'
Acer rubrum	Red Maple	Autumn Flame	35'	35'
Acer rubrum	Red Maple	Bowhall	40'	20'
Acer rubrum	Red Maple	Scarlet Sentinal	40'	20'
Acer rubrum	Red Maple	Karpick	40'	20'
Acer rubrum	Red Maple	October Glory	40'	35'
Acer rubrum	Red Maple	Red Sunset	45'	35'
Acer rubrum	Red Maple	Schlesinger	50'	45'
Acer saccharum	Sugar Maple	Fairview	40'	50'

APPENDIX L. CITY OF POULSBO PARKS & RECREATION
TREE LIST

Acer saccharum	Sugar Maple	Green Mountain	45'	35'
Acer tartaricum	Tartarian Maple		25'	20'
Acer truncatum x A.platanoides	Shangtung Hybrid Maple	Norwegian Sunset	35'	25'
Acer truncatum x A.platanoides	Shangtung Hybrid Maple	Pacific Sunset	35'	25'
Aesculus carnea	Ruby Red Horsechestnut	Briotti	35'	25'
Aesculus hippocastanum	Baumann Horsechestnut	Baumannii	40'	35'
Alnus crispa	Sitka Alder		10'	20'
Amelanchier x grandiflora	Serviceberry	Princess Diana	20'	15'
Amelanchier x grandiflora	Serviceberry	Autumn brilliance	20'	15'
Amelanchier x grandiflora	Serviceberry	Robin Hill	20'	15'
Betula jaquemontii	Jacquemontii Birch		40'	30'
Betula nigra	River Birch	Heritage	45'	30'
Carpinus betulas	European Hornbeam		35'	25'
Carpinus betulas fastigiata	European Hornbeam	Pyramidal European Hornbeam	35'	25'
Carpinus caroliniana	American Hornbeam		20'	20'
Carpinus japonicus	Japanese Hornbeam		20'	25'
Calolcedrus decurrens	Incense Cedar		70'	25'
Castanea dentata	American Chestnut		45'	35'
Castanea mollissima	Chinese Chestnut		40'	35'
Castanea sativa	Spanish Chestnut		40'	35'
Celtis laevigata x occidentalis	Magnifica Hackberry	Magnifica	40'	40'
Cercidiphyllum japonicum	Katsuratree		35'	35'
Cercis canadensis	Eastern Redbud		25'	30'
Chamaecyparis nootkatensis	Alaska Yellow-Cedar		70'	20'
Cladrastis lutea	Yellowood		30'	20'
Cornus nuttallii	Western Flowering Dogwood		50'	30'
Cornus kousa chinensis	Kousa Dogwood	Milky Way	20'	15'
Corylus colurna	Turkish Hazelnut		40'	25'
Crataegus x lavallei	Lavalle Hawthorn		28'	25'
Crataegus crus-galli	Thornless Cockspur Hawthorn		25'	13'
Crataegus x mordenensis	Toba Hawthorn	Toba'	20'	25'
Crataegus phaenopyrum	Washington Hawthorn	Princeton Sentry	20'	12'
Crataegus phaenopyrum	Washington Hawthorn		25'	10'
Davidia involucrata	Dove Tree		35'	28'
Eucommia ulmoides	Hardy Rubber Tree		40'	30'
Fagus grandifolia	American Beech		40'	35'
Fraxinus americana	White Ash	Autumn Applause	40'	25'
Fraxinus americana	White Ash	Autumn purple	45'	40'
Fraxinus americana	White Ash	Champaign County	45'	30'
Fraxinus ornus	Flowering Ash		40'	20'
Fraxinus pennsylvania	Green Ash	Urbanite	35'	25'
Fraxinus pennsylvania	Green Ash	Skyward	35'	20'

APPENDIX K. Master Street Tree List & Tree Spacing Standards

Table 1 - "Large Trees, Cont."

SCIENTIFIC NAME	COMMON NAME	CULTIVARS	HEIGHT	WIDTH	PLANTING
Ulmus parvifolia	Chinese Elm	Dynasty Lacebark Elm	45'	35'	9'
Tilia americana	Basswood	Legend	45'	35'	6'
Tilia cordata	Little Leaf Linden	Chancole	45'	30'	6'
Tilia cordata		Greenspire	45'	30'	6'
Betula nigra	River Birch	Heritage	45'	30'	8'
Acer platanoides	Norway Maple	Schwedleri	45'	35'	8'
Acer saccharum	Sugar Maple	Green Mountain	45'	35'	8'
Castanea dentata	American Chestnut		45'	35'	8'
Tilia heterophylla	Bee Tree Linden		45'	35'	8'
Fraxinus quadrangulata	Blue Ash		45'	30'	8'
Quercus robur	Skymaster Eng. Oak	Pyramich	50'	25'	6'
Acer rubrum	Red Maple	Schlesinger	50'	45'	8'
Platanus acerifolia	London Plane	Bloodgood	50'	40'	9'
Zelkova serrata	Zelkova	Green Vase	50'	40'	9'
Tilia americana	Basswood	Fastigiata	50'	25'	6'
Tilia cordata	Fairview	Fairview	50'	25'	6'
Tilia x flavescens		Glenleven	50'	35'	6'
Quercus palustris	Pin Oak		50'	35'	8'
Acer platanoides	Norway Maple	Deborah	50'	45'	8'
Acer platanoides	Norway Maple	Emerald Lustre	50'	40'	8'
Acer platanoides	Norway Maple	Emerald Queen	50'	40'	8'
Acer platanoides	Norway Maple	Summershade	50'	40'	8'
Magnolia acuminata	Cucumber tree		50'	35'	8'
Tilia americana	Basswood	Redmond	50'	35'	8'
Fraxinus pennsylvania	Green Ash	Patmore	55'	45'	8'
Fagus sylvatica	European Beech	Dawyckii Fistigiata	60'	15'	4'
Liriodendron tulipifera	Tulip-tree		60'	35'	8'

APPENDIX L. CITY OF POULSBO PARKS & RECREATION
MASTER TREE LIST

Pyrus calleryana	Callery Pear	Chanticlear	40'	20'
Pyrus calleryana	Callery Pear	Aristocrat	40'	30'
Quercus acutissima	Sawtooth Oak		40'	45'
Quercus alba	White Oak		35'	25'
Quercus bicolor	Swamp White Oak		40'	35'
Quercus coccinea	Scarlet Oak		40'	30'
Quercus crimschmidt	Crimsonspire Oak		45'	15'
Quercus garryana	Oregon White Oak		35'	30'
Quercus ilex	Holly Oak		35'	30'
Quercus macrocarpa	Bur Oak		35'	25'
Quercus muehlenbergii	Chinkapin Oak		35'	25'
Quercus palustris	Pin Oak		50'	35'
Quercus phellus	Willow Oak		35'	35'
Quercus robur	English Oak	Fastigiata	45'	15'
Quercus robur	English Oak	Skymaster	50'	25'
Quercus rubra	Red Oak		40'	30'
Quercus shumardii	Shumard Oak		40'	30'
Ulmus parvifolia x carpinifolia	Elm	Frontier	40'	30'
Ulmus parvifolia	Chinese Elm	Dynasty Lacebark Elm	45'	35'
Rhamnus purshiana	Cascara		30'	30'
Salix scouleriana	Scouler's Willow		20'	20'
Sassafras albidum	Sassafras Tree		25'	25'
Styrax japonicus	Japanese Snowbell		25'	25'
Styrax obassia	Fragrant Snowbell		30'	20'
Sorbus alnifolia	Korean Mountain Ash		45'	30'
Sorbus tianshanica 'Dwf. Crown'	Mountain Ash	Red Cascade Mtn. Ash	16'	10'
Syringa reticulata	Ivory Silk Tree Lilac	Ivory Silk	20'	25'
Taxus brevifolia	Pacific Yew		25'	30'
Thuja plicata	Western Redcedar		85'	45'
Tilia americana	Basswood	Legend	45'	35'
Tilia americana	Basswood	Fastigiata	50'	25'
Tilia americana	Basswood	Redmond	50'	35'
Tilia cordata	Little Leaf Linden	Corinthian	40'	20'
Tilia cordata	Little Leaf Linden	Fairview	50'	25'
Tilia cordata	Little Leaf Linden	Chancole	45'	30'
Tilia cordata	Little Leaf Linden	Greenspire	45'	30'
Tilia euchlora	Crimean Linden		40'	30'
Tilia heterophylla	Bee Tree Linden		45'	35'
Tilia platyphyllos	Bigleaf Linden		40'	30'
Ulmus parvifolia	Allee Elm	Emer II P.P. #7552'	50'	35'
Ulmus wilsoniana	Prospector Elm	Prospector'		
Fagus sylvatica	Tricolor Beech	Roseo-marginata	30'	20'
Fagus sylvatica	Green Beech		50'	40'
Fagus sylvatica	European Beech	Dawyckii Fistigiata	60'	15'
Zelkova serrata	Zelkova	Green Vase	50'	40'

APPENDIX L. CITY OF POULSBO PARKS & RECREATION
MASTER TREE LIST

Fraxinus pennsylvania	Green Ash	Marshall	45'	30'
Fraxinus pennsylvania	Green Ash	Summit	45'	40'
Fraxinus pennsylvania	Green Ash	Patmore	55'	45'
Fraxinus quadrangulata	Blue Ash		45'	30'
Ginkgo biloba	Ginkgo (male)	Lakeview	35'	20'
Ginkgo biloba	Ginkgo (male)	Princeton Sentry	35'	20'
Ginkgo biloba	Ginkgo (male)	Autumn Gold	35'	30'
Gleditsia triacanthos	Honeylocust	Halka	40'	40'
Gymnocladus dioicus	Kentucky Coffee (male)		40'	30'
Halesia carolina	Carolina silverbell		25'	25'
Hamamelis x intermedia	Jelena Witch Hazel	Copper beauty	10'	10'
Hamamelis x intermedia	Primavera Witch Hazel	Primavera	10'	10'
Hamamelis virginiana	Common Witch Hazel		25'	30'
Koelreuterra paniculata	Goldenrain Tree		35'	35'
Liquidambar styraciflua	Sweetgum	Festival, Burgendy	40'	30'
Liriodendron tulipifera	Tulip-tree		60'	35'
Maackia amurensis	Manchurian Maackia		20'	15'
Maclura pomifera	Osage Orange (male)	Park Osage Orange	30'	15'
Magnolia	Magnolia Hybrid	Galaxy	20'	15'
Magnolia acuminata	Cucumber tree		50'	35'
Magnolia denudata	Heptapeta	Yulan Magnolia	35'	30'
Magnolia kobus	Kobus Magnolia	Merrill Leonard Messel	35'	25'
Malus transitoria	Crabapple	Adirondack	18'	20'
Malus transitoria	Crabapple	Golden Raindrops	18'	20'
Malus transitoria	Crabapple	Mary Potter	10'	15'
Malus transitoria	Crabapple	Prairifire	20'	8'
Malus transitoria	Tschonoskii Crabapple	Tschonoskii	40'	20'
Malus transitoria	Crabapple	Louisa	15'	12'
Malus transitoria	Crabapple	Red Jewel	15'	10'
Nothofagus antarctica	Antarctic Beech		35'	15'
Nyssa sylvatica	Black Gum		40'	35'
Ostrya virginiana	Hop Hornbeam /Ironwood		30'	20'
Oxydendron arboreum	Sourwood/Sorrel Tree		30'	20'
Picea sitchensis	Sitka Spruce		100'	50'
Pinus contorta var. contorta	Shore Pine		60'	25'
Pinus monticola	Western White Pine		85'	30'
Phelodendron amurense	Amur Corktree	Shademaster	35'	35'
Platanus acerifolia	London Plane	Bloodgood	50'	40'
Prunus cerasifera	Flowering plum	Mt. St. Helens	20'	15'
Prunus cerasifera x salicina x americana	Flowering plum	Newport	20'	22'
Prunus serrulata	Flowering Cherry	Royal Burgundy	20'	10'
Prunus x yeodoensis	Flowering Cherry	Akebono Daybreak	25'	25'
Pseudotsuga menziesii	Douglas-Fir		100'	50'
Pyrus calleryana	Callery Pear	Capital	35'	12'