City of North Bend Urban Forestry Plan

VISION

> *"The City of North Bend values our urban forest as central to the continued social and economic well being of our community, connecting us to our surrounding environment, enhancing the beauty of our surroundings, preserving our unique, informal small town character and heritage, and providing numerous environmental functions and benefits. The City's urban forest will be healthy, diverse, natural, well cared for, and an integral part of our community's infrastructure.*

PURPOSE AND INTENT OF THE URBAN FORESTRY PLAN

The City of North Bend Urban Forestry Plan provides guidance and standards applicable to the planting, maintenance, and replacement of trees on public property, including rights-of-way, parks, and other public places. The Urban Forestry Plan is implemented by the Street Tree regulations, Chapter 12.28 NBMC.

Standards applicable to the installation and preservation of trees on private property are found in the landscape regulations and clearing and grading regulations, Chapters 18.18 and 19.10 respectively, of the North Bend Municipal Code.

INTRODUCTION AND NEED FOR AN URBAN FORESTRY PLAN

Surrounded on three sides by substantial public forest lands and green, forested hillsides, and as the last city on the I-90 Mountains to Sound Greenway Corridor, before traveling over Snoqualmie Pass, trees form an essential component of the character and identity of the City of North Bend. The City's Comprehensive Plan and development regulations have reflected this importance with policies and regulations intended to preserve the existing urban forest canopy and to add additional canopy as development occurs.

North Bend's street regulations and landscape regulations require planting street trees on all public streets. As they are installed within the right-of-way, these trees become a public resource under the ownership and care of the City. Following a 13-year water moratorium, substantial development is once again occurring within North Bend. As a result, the construction of new streets, as well as frontage improvements to existing streets and improvements to North Bend's parks, is adding significantly to the number of trees under the City's ownership.

North Bend's public trees provide significant benefits, both as an integral component of the City's infrastructure, and as an economic and cultural resource. Trees provide shading, help moderate temperatures, take up stormwater, filter air pollution, sequester carbon dioxide, and beautify streets and neighborhoods, increasing property values and improving quality of life. Proper care of this resource is important to ensure that North Bend residents continue to receive the multiple benefits of the City's urban forest.

Up to now, the City has not had a coordinated or planned approach to public tree care, instead relying on the "fire alarm" method of responding to problems. A fire-alarm approach to maintenance ultimately leads to deferred maintenance, inefficient use of staff time, and piecemeal solutions. Without an inventory and plan in place, the City's growing resource of street and other public trees will become more difficult to properly manage and maintain, resulting in unhealthy and shorter-lived trees, potential property damage, wasted resources, and unattractive streetscapes.

This Urban Forestry Plan, together with the Public Tree Inventory, will ensure that the City's public trees continue to contribute to the City's vision for the its urban forest long into the future.

PRIMARY GOALS FOR NORTH BEND'S URBAN FOREST

1. Maintain the health, viability, and beauty of North Bend's public trees as a resource integral to the character and identity of North Bend.

2. Work to achieve no net loss of the City's Urban Forest canopy over time by planting trees on public property and requiring the installation of street trees along all public streets in association with new development and public street improvements.

3. Preserve existing native trees whenever possible within rights-of-way, parks and other public properties.

4. Maintain an inventory of all public trees to ensure optimal knowledge of tree conditions, hazards, and maintenance needs.

5. Provide public outreach and education to recognize the values and functions that trees provide in the urban environment and for the character of North Bend.

6. Pursue annual certification as a Tree City USA City through the National Arbor Day Foundation and Washington State Department of Natural Resources.

7. Seek grants and work with partner organizations such as the Mountains to Sound Greenway Trust to protect, restore and enhance natural public forest areas within North Bend, including river and stream shorelines and forested areas of Tollgate Farm.

PUBLIC TREE INVENTORY

In the summer of 2011, through a Community Forestry Assistance Grant provided by the Department of Natural Resources and USDA Forest Service, the City hired Davey Resource Group to conduct an inventory of public trees in selected rights-of-way, parks, and other public places. A total of 1,268 public trees were inventoried for species, size, location, condition, and problems.

Primary findings and recommendations of this inventory include the need to remove certain dead and hazard trees, remove or loosen a number of tree stakes, pruning recommendations for certain trees, avoiding damage by mowers and string trimmers, and the need to remove certain topped trees in proximity to light poles. The recommendations of the inventory have been incorporated into this Urban Forestry Plan.

The public tree inventory will need to be updated as development occurs and on a periodic basis to ensure that it accurately reflects the conditions of the City's trees. Responsibilities for maintaining the public tree inventory are identified below.

RESPONSIBILITIES FOR CARE OF PUBLIC TREES

Multiple individuals and departments are responsible for coordinating the planning, management, and care of the City's public trees. This section describes the specific responsibilities of each.

1) TREE BOARD. The City's Tree Board shall consist of all members of the City of North Bend Parks Commission, an arborist or tree care professional as appointed by the Mayor, and the City's Tree Steward. The Tree Board shall advise the Community and Economic Development Department (CED) staff in the preparation and implementation of an Urban Forestry Plan; advise CED staff in preparing revisions to development regulations involving the protection, removal and replacement

of trees; and coordinate the City's education and public outreach activities relating to trees, including the City's annual recognition of Arbor Day. The Tree Board shall meet at least two times per year and additionally as needed to carry out its assigned duties.

2) TREE STEWARD. A member of the Public Works Department shall be appointed to serve as the City's Tree Steward as a part of his or her regularly assigned duties. The City Tree Steward shall be responsible for overseeing the care and management of the City's public trees consistent with the Urban Forestry Plan, including but not limited to conducting an inspection every other year to identify public tree maintenance and replacement needs and providing updates to the public tree inventory as necessary, scheduling work consistent with the annual work program for public tree maintenance and replacement activities, and performing said work and/or assigning said work to be accomplished by other qualified individuals.

3) COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT RESPONSIBILITIES. A planner from the CED Department shall serve as the staff liaison to the Tree Board and shall guide the Board in the preparation of the Urban Forestry Plan and associated regulations governing the protection and management of public trees. The CED Department shall be responsible, with input from the City's Tree Steward, for preparing an annual work program for public tree maintenance and replacement activities, preparing a budget request to cover such annual work program, and tracking City expenditures on tree planting, maintenance and replacement activities. The City's GIS Technician within the CED Department shall be responsible for updating and maintaining the electronic tree inventory.

4) CITY OR ADJACENT PROPERTY OWNER AND/OR RESIDENTIAL OWNER'S ASSOCIATION MAINTENANCE RESPONSIBILITY.
   a) All public trees shall be maintained consistent with the standards in this Urban Forestry Plan.
   b) The City shall be responsible for the care and maintenance of all public trees in the following areas:
      i) Within all City parks and other off-street City-owned properties.
      ii) Within the right of way of Bendigo Boulevard between the I-90 Roundabout and 4th Street
      iii) Within the right-of-way of North Bend Way between the South Fork Snoqualmie River and the Roundabout at Cedar Falls Way.
      iv) Within the right-of-way of Downing Avenue N., between E. Third Street and E. North Bend Way.
      v) Within the North side of the right-of-way of Orchard Drive SE, between E. North Bend Way and Healy Ave. S.

   c) Trees within all other rights-of way shall be maintained by the adjacent property owner in front of which property the tree is located. In the case of a subdivision or condominium development that contains a Residential Owners Association, it shall be the responsibility of the Residential Owner's Association to maintain trees within public rights-of-way within and bordering the subdivision or condominium development. The City additionally reserves the right to perform routine pruning, maintenance or replacement of street trees in these areas.

TREE PROVISION AND SPECIES SELECTION STANDARDS

1. Street Trees shall be provided in all landscape strips and landscape design.

2. Species of new street trees shall be selected by the Community and Economic Development Department in consideration of the list of approved tree species in Appendix A, and the policies of this section. Additional species may be approved by the Community and Economic Development Department, if found consistent with the standards below.

3. Species shall be selected that are suitable to North Bend's climate, wind, and soil conditions, and the context of the available planting site.

4. To protect against catastrophic pest damage, blight, or other widespread illness particular to a species, the City shall ensure that a broad range of tree species are represented in the City's overall tree inventory over time. In general, no single species should represent greater than 10% of the total population and no single genus more than 20%, with the exception of native species.

5. Consider existing tree species already located on a street when selecting species for new development in proximity to the existing trees on the same street.

6. Consider alternating street tree species along a street, so that if one species gets a disease, the other may remain unaffected and continue to provide values to the street.

7. In commercial areas, tree species with an upright rather than spreading growth patterns should generally be selected to maintain visibility to businesses and signage. Within the Downtown core, new or replacement street trees shall be *Zelkova serrata* 'Mushashino'.

8. In areas where planting area is not limited, larger trees should generally be selected to ensure a diversity of overall types and sizes throughout the City's inventory and to increase benefits provided to the City. Large trees provide up to 48 times the benefits compared to small trees because environmental benefits correlate to leaf surface area, and large trees tend to have greater leaf surface area.

9. Trees planted under overhead utilities and within planter strips or tree pits shall be of a species of suitable size and growing pattern to minimize damage to the utility or right-of-way improvements, and minimize future pruning needs.

TREE PLANTING STANDARDS

1. The minimum street tree size shall be two-inch minimum caliper measured six inches above the root flare and conform to the most recent ANSI 260.1 American Standard for Nursery Stock.

2. The first branch of the tree shall be a minimum of five feet above the ground except where the tree location does not present an obstruction to pedestrians, passing vehicles, or sightlines.

3. Street trees shall be spaced as provided for the species as identified in Appendix A. Within cul-de-sacs, to provide adequate planting area where space is limited due to driveway cuts through the planter strip, the following strategies shall be used separately or in combination:
   a. 1. Shared driveways between lots;
   b. Narrow driveway cut to single garage width of 10 feet;
   c. Reduce driveway wing wall width, as approved by the public works director.

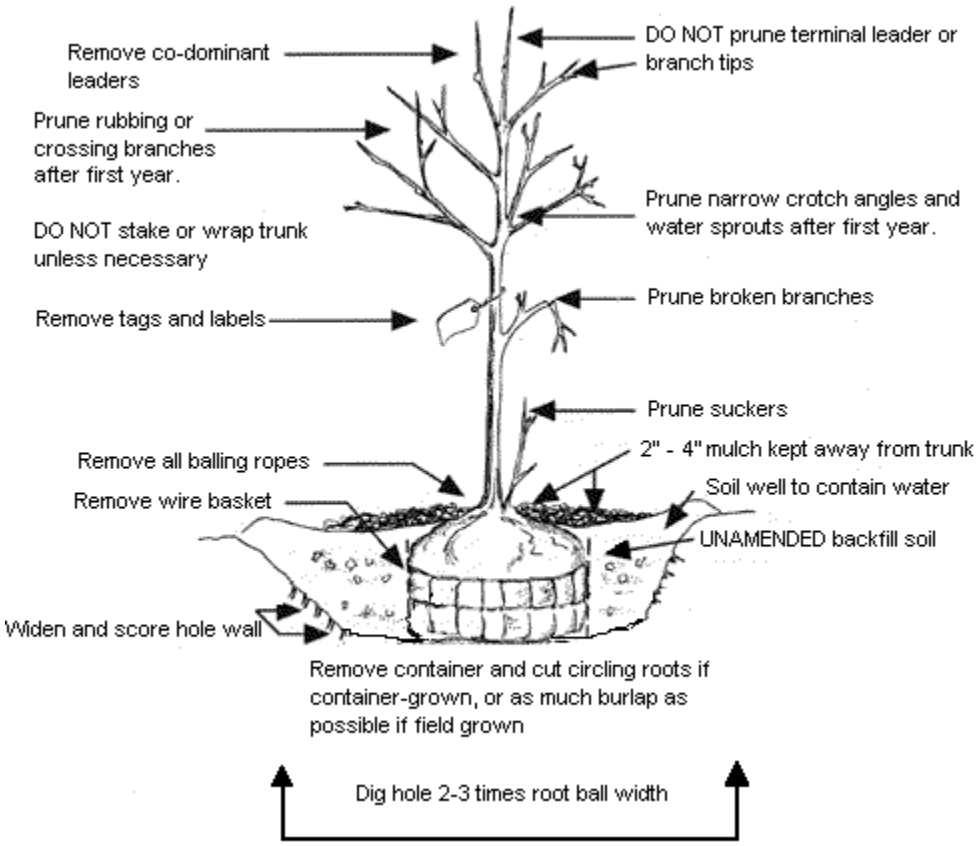
4. Prior to digging for installation of trees, the State Buried Cable Location Service shall be contacted at 1-800-424-5555.

5. The installation, irrigation and/or watering of new trees shall be provided consistent with the following planting standards, and as illustrated in the figure below:
   a. Tree location. Trees shall be located as follows:
      i. At least 3 feet back from the face of the curb (or 2 feet back in the case of a 4-foot wide planter strip).
      ii. At least 5 feet from underground utilities.
      iii. At least 10 feet from driveways.
      iv. At least 10 feet from power poles.
      v. At least 20 feet from street lights.
      vi. At least 20 feet from other existing trees (unless intended as a compatible cluster).
   b. Root Barrier. All street trees located within planter strips shall have a root barrier installed to protect the sidewalk and curb. The root barrier shall be installed at the edge of the sidewalk and curb to provide maximum growing space for the tree roots.

   c. Tree pit.
      vii. The tree pit shall be dug to the depth of the rootball, and 2-3 times the width of the root ball, consistent with the figure shown below.
      viii. If the bottom of the hole consists of highly compact soils or hardpan, break up the soil with a pickax to ensure proper drainage. If not hardpan, leave soils at the bottom of the hole compacted to prevent settling of the tree ball.
      ix. Roughen the sides of the hole. Do not leave them smooth or glazed by the shovel bottom.

d. Tree placement.
   x. Position the tree to ensure that the trunk flare is above the soil.
   xi. Backfill utilizing native soils, amending only to provide drainage out of the tree pit as necessary, depending on soil conditions.
   xii. Create an earthen berm a few inches high 3-4 feet in diameter around the base of the tree to contain water.
   xiii. Place 2-4 inches of mulch around the base of the tree, taking care to keep the mulch a few inches back from the trunk to allow proper air circulation.

e. Watering.
   xiv. Once planted, water immediately and thoroughly, twice per week during the first month, then once per week through the remainder of the dry season (end of September).
   xv. Water a minimum of once per month during the second summer season.



TREE PRUNING AND CARE STANDARDS

1. In order for an abutting property owner or applicable residential owners association to prune, trim, modify, alter, remove or replace a public tree within a right-of-way, a street tree permit shall be obtained in conformance with the requirements in NBMC 12.28.

2. Public trees shall be pruned consistent with the most current pruning standards of the International Society of Arboriculture, on file with the City.

3. Except as necessary to address a public safety hazard or other special circumstance that cannot be addressed in another way, topping, as defined in NBMC 12.28, is prohibited, as this can lead to weak branching structure, compromised tree health, and further maintenance requirements. Severe and improper pruning or topping without prior approval shall be punishable as established in Chapter 12.28 NBMC.

4. Any tree stakes installed shall be removed one year after planting to prevent tree damage and ensure proper development of tree strength.

5. Once properly established, street trees shall be raised (lowest branches removed) to ensure that the lowest branch is a minimum of 5-feet above the ground or as otherwise appropriate to the angle of the branch, as necessary to maintain approximately 8 feet of clearance above sidewalks and 14 feet of clearance above roads.

6. Any root suckers growing at the base of a tree (vigorous, upright shoots that grow from the rootstock of a tree with a graft union) shall be regularly removed.

7. A mulch ring shall be maintained around the base of all trees, with mulch kept back from the trunk, to optimize root health and suppress weeds, thereby preventing trunk damage from mowers, trimmers, and other equipment.

8. Trees in proximity to street lights shall be trained over time to extend above the lamp (raised up), as opposed to pruned short, which does not address the problem of light-interference.

9. The City shall be responsible for the maintenance of all tree grates, where installed. Grates shall be periodically inspected to ensure that there is sufficient clearance between the grate and the trunk and that the grate sits properly without creating trip hazards. Concentric rings shall be removed from the tree grate as necessary to maintain a minimum 1-inch clearance.

TREE REMOVAL AND REPLACEMENT STANDARDS

1. The City shall regularly identify and replace dead, hazardous and obstructive trees that should be removed and replaced for public safety. These trees shall be replaced in the next available and authorized work program and budget.

2. Public trees that adjacent property owners consider to be hazards and wish removed through a street tree removal permit shall be evaluated by a tree care professional to determine the level of hazard prior to removal, when the hazard is not clearly evident.

3. All stumps of public trees removed shall be removed to a minimum of four inches below the existing grade so that the top of the stump doesn't project above the surface of the ground. The hole or depression resulting from the removal shall be filled with topsoil and made level with the surrounding grade.

RESOURCE MANAGEMENT AND ANNUAL WORK PLAN

1. The City shall provide education and training as necessary to the City's Tree Steward to ensure proper knowledge about the planting, care and management of the City's trees.

2. The City shall maintain its public tree inventory, including the species, size, condition, and associated maintenance or replacement needs of all street trees and trees in parks and other public places. Maintenance of the City's tree inventory shall consist of the following activities:
    a. The City's GIS Technician shall maintain the tree inventory database by inputting data resulting from new development projects that add street trees, as well as data collected by the City's Tree Steward, other applicable staff, or consultants.
    b. The City's Tree Steward shall inspect the City's public trees at least every other year, and shall report changes in the inventory to the City's GIS Technician.

3. The Community and Economic Development Department shall prepare, in consultation with the City's Tree Steward, an annual work plan and budget request for the Council's consideration for the next year's anticipated maintenance and replacement needs for the City's public tree resources. The annual work plan shall consist of the following activities:
    a. Together with the Tree Board, planning and preparing activities for the City's recognition of Arbor Day;
    b. (every other year) Conducting an inspection of public trees to identify new issues and maintenance needs that need to be addressed;
    c. Updating the inventory based on the inspection and additional information;
    d. Preparing the budget request to address needs identified in the inventory for the following year;
    e. Based on the approved tree budget, scheduling and performing maintenance activities.

TRACKING EXPENDITURES

A requirement for certification as a Tree City USA City is that the city must provide a budget of at least $2 per capita on tree planting and care. Eligible costs for this requirement are provided by the Washington State Department of Natural Resources, and are broad in scope. However, to show compliance with this standard in providing the City's annual application for Tree City USA certification, the City will need to track expenditures.

1. The Community and Economic Development Department shall tally expenditures in November for the fiscal year (January 1 – December 31). Expenditures shall include:
    a. Actual City expenditures on trees, and related tree-care products and equipment;
    b. An estimation of hours spent by each City employee involved in tree planning, inventory, care or management, including leaf pick-up;
    c. Volunteer hours spent on tree planting, care or management;
    d. Amounts from grants the City has been awarded involving tree planting and forest restoration;
    e. Amounts from public utility providers on tree maintenance activities, including line clearing;
    f. Training and educational expenses for staff involved in tree management.

2. By December 1, the Community and Economic Development Department shall submit the application materials for annual Tree City USA certification to the Washington State Department of Natural Resources Urban and Community Forester.

PUBLIC OUTREACH AND EDUCTION

Public outreach and education is an important component of properly managing an urban forest, and is essential for maintaining support for the provision and protection of public trees.

1. The Tree Board shall coordinate the City's annual recognition of Arbor Day (typically held in early April). At a minimum, Arbor Day shall be recognized in the following manner:
    a. A proclamation by the City, typically read by the Mayor, recognizing Arbor Day and the City's participation in the care and stewardship of trees.
    b. A public observance activity. An observance activity may include a tree planting event, festival that includes recognizing the importance of trees, a public recognition of a group active within the City involved in tree planting or care, or other similar activity.

2. The City shall regularly apply for grants that fund projects involving the planting of trees and restoration of degraded forest areas. Utilize these projects as an opportunity to provide education to the community on the values of trees and urban forests.

APPENDIX A – APPROVED STREET TREE VARIETIES

Street Tree Name	Scientific Name	Size	Spacing	Narrow or Spread Habitat	Min. Planter Width
SMALL STREET TREES – suitable under power lines.		Up to 30'	25’	Spread	4'
Flowering Crabapples					
a. Prairie Maid Crabapple	a. Malus ‘Prairie Maid’				
b. Golden Raindrops Crabapple	b. Malus transitoria ‘Schmidtcutleaf’				
c. Sugar Thyme Crabapple	c. Malus ‘Sutysam’				
d. Everest Crabapple	d. Malus ‘Everest’				
e. Others considered upon performance review					
Flowering Cherries					
a. Kwanzan Oriental Cherry	a. Prunus serrulata ‘Kwanzan’				
b. Shiro-fugen Flowering Cherry	b. Prunus serrulata ‘Shiro-fugen’				
c. Cascade Snow Cherry	c. Prunus ‘Berry’				
Hornbeams					
a. American Hornbeam	a. Carpinus caroliniana				
b. Japanese Hornbeam	b. Carpinus japonica				
Other Assorted Varieties					
a. Lavalle Hawthorn with vase shape	a. Crataegus x. lavallei				
b. Globe Ash	b. Faxinus excelsior ‘Globosa’				
SMALL STREET TREES – suitable under utility lines.		Up to 30'	25’	Narrow	4'
Assorted Varieties					
a. Red Cascade Mountain Ash	a. Sorbus Americana ‘Dwarfcrown’				

b. Adirondack Crabapple	b. Malus 'Adirondack'				
c. Summer Sprite Linden	c. Tilia cordata 'Halka'				
d. Marilee Flowering Crab	d. Malus 'Jarmin'				
MEDIUM STREET TREES (Spreading)		Up to 45'	30'	Spread	5'
Flowering Pears					
a. Aristocrat Callery Pear	a. Pyrus calleryana 'Aristocrat'				
b. Redspire Flowering Pear	b. Pyrus calleryana 'Redspire'				
Maples					
a. Red Maple: Morgan, Northwood, October Glory, Red Sunset, Autumn Flame, Autumn Spire, Brandywine, Burgundy Belle	a. Acer rubrum				
b. Freemanii Red Maples	b. Autumn Blaze, Autumn Fantasy, Marmo and other of wide form				
c. Queen Elizabeth Hedge Maple	c. Acer campestre 'Evelyn'				
d. Pacific Sunset Maple	d. Acer truncatum x. A. platanoides 'Warrenred'				
e. Norwegian Sunset Maple	e. Acer truncatum x. A. platanoides 'Keithsform'				
f. Parkway Norway Maple	f. Acer platanoides 'Columnardbroad' as well as 'Cleveland'				
g. Sugar Maple	g. Acer saccharum, consider other cultivars of saccharum				
Assorted Varieties					
a. Whitebeam	a. Sorbus aria 'Magnifica' and 'Majestica'				
b. Jacquemont Birch	b. Betula jacquemontii				
c. Chinese Tulip	c. Liriodendron chineses				
d. Kobus Magnolia	d. Magnolia kobus				
e. Little Leaf Linden	e. Tilia cordata 'green spire'				
f. Worplesdon Sweetgum	f. Liquidambar styraciflua 'Worplesdon'				

g. Ruby Red Horsechestnut	g. Aesculus x. carnea 'Brotii'				
MEDIUM STREET TREES (Narrow Spread)		Up to 35'	30'	Narrow	5'
Flowering Pears					
a. Capital Callery Pear	a. Pryus calleryana 'Capital'				
b. Chanticleer Pear or Cleveland Select Flowering Pear	b. Pyrus calleryana 'Chanticleer' or 'Cleveland Select'				
Hornbeams					
a. Fastigiate European Hornbeam	a. Carpinus betulus 'Fastigiata'				
b. Frans Fontaine European Hornbeam	b. Carpinus betulus 'Frans Fontaine'				
Maples					
a. Karpick Maple	a. Acer rubrum 'Karpick'				
b. Bowhall Red Maple	b. Acer rubrum 'Bowhall'				
c. Freemanii Red Maples, Armstrong, Celebration, Scarlet Sentinel and others	c. Acer rubrum x. Acer freemanii				
d. Emerald Queen Norway Maple. Also Easy Street, Parkway, Columnar and other Norway	d. Acer platanoides 'Emerald Queen'				
Oaks					
a. Crimson Spire Oak	a. Quercus alba x. Q. robur 'Crimschmidt'				
b. Skyrocket English Oak	b. Quercus robur 'Skyrocket'				
Assorted Varieties					
a. Fastigiate Arnold Tulip Tree	a. Liriodendron tulipifera 'Fastigiatum'				
b. Cardinal Royal Mountain Ash	b. Sorbus aucuparia 'Michred'				
c. Dawn Redwood	c. Metasequoia glyptostroboides				
d. Pyramidal Dawyckii Beech	d. Fagus sylvatica 'Dawyckii'				
e. Princeton Sentry Ginkgo	e. Ginkgo biloba 'Princeton Sentry'				

f. Emerald Sentinel Sweetgum	f. Liquidambar styraciflua 'Clydesform'				
g. Corinthian Linden	g. Tilia cordata 'Corzam'				
h. Musashino	h. Zelkova Serrata Musashino				
LARGE STREET TREES		Over 45'	35'	Spread	6'
Oaks					
a. Pin Oak	a. Quercus palustris				
b. Red Oak	b. Quercus rubra				
c. English Oak	c. Quercus robur				
d. Scarlet Oak	d. Quercus coccinea				
e. Northern Pin Oak	e. Quercus ellipsoidalis				
Maples					
a. Sugar Maple	a. Acer saccharum				
b. Silver Queen Maple	b. Acer saccharinum 'Silver Queen'				
Assorted Varieties					
a. American Beech	a. Fagus grandifolia				
b. Tulip tree	b. Liriodendron tulipifera				
c. Bloodgood London Plane Tree	c. Platanus x. acerifolia 'Bloodgood'				
d. European Beech	d. Fagus sylvatica				
e. Elms	e. Ulmus				
f. Monarch Birch	f. Betula maximowicziana				
g. Horse Chestnut	g. Aesculus hippocastanum				
h. Maidenhair Tree	h. Ginkgo biloba (select male cultivars)				