CITY OF MADRAS

URBAN FORESTRY MANAGEMENT PLAN

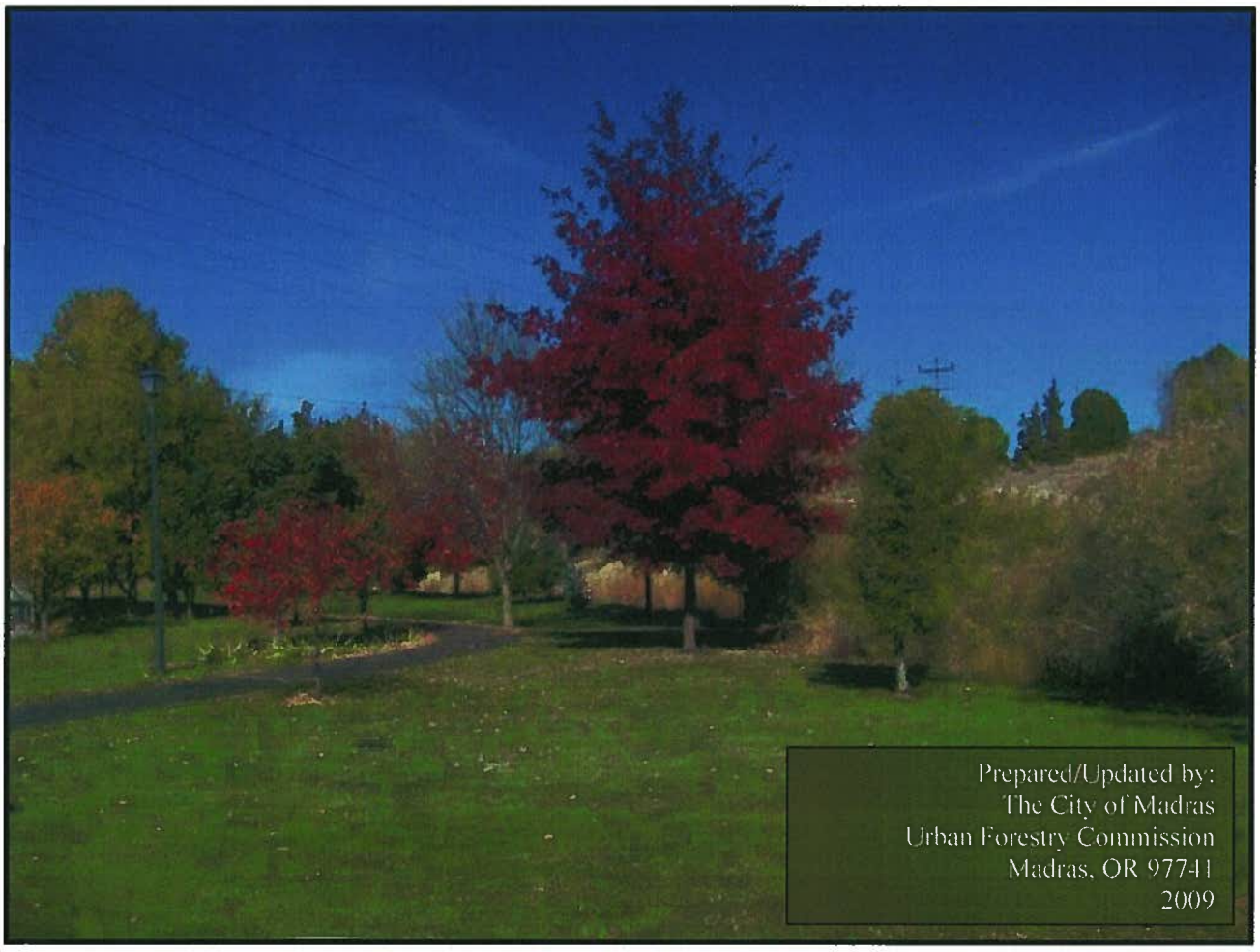

Exhibit to Ordinance No. 824

URBAN FORESTRY MANAGEMENT PLAN

The following individuals have served on the Madras Urban Forestry Council and were responsible for the development of this plan. The plan consists of four (4) primary Components. These components are Plan Goals and Policies, Ordinance, Tree List and Planting Specifications & Standards.

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MISSION STATEMENT

THE MISSION OF THE MADRAS URBAN FORESTRY COMMISSION IS TO ACHIEVE AND MAINTAIN A SUCCESSFUL URBAN FORESTRY PROGRAM WHICH WILL ENHANCE LIVABILITY, COMPLIMENT THE ENVIRONMENT, AND BEAUTIFY OUR SURROUNDINGS BY PROVIDING LEADERSHIP, EDUCATION AND SUPPORT TO THE COMMUNITY.

INTRODUCTION

The City of Madras Urban Forestry Management Plan is designed to set standards for our City which best ensure the health and success of Madras' trees. These standards were reviewed and approved by the Urban Forestry Commission, and adopted by the City of Madras City Council. Any deviation of these standards is to be approached on an individual case basis with preapproval and consent from the Urban Forestry Commission.

URBAN FOREST MANAGEMENT PLAN
GOALS AND POLICIES

THE OVERALL GOALS OF THIS PLAN ARE TO:

1. Achieve and maintain a successful urban forestry program.

2. Enhance Madras' commitment to its community forest by educating the public about the importance of trees.

3. Provide opportunities for the Urban Forestry Commission and other interested parties to obtain further education relating to urban forestry.

4. Lay the ground work for an appropriate, enforceable, and visionary tree ordinance that outlines how our community trees will be planted, cared for, and protected within the Madras Urban Growth Boundary.

5. Maintain a perpetually dynamic Urban Forestry Management Plan through periodic review.

SITE SELECTION:

Within the Urban Growth Boundaries of the City of Madras there exist numerous potential planting sites of varying degrees of suitability. The site selection process relies on acknowledging the available locations and existing conditions. Since the needs and environmental conditions vary throughout the community, general geographical areas have been identified to address specific needs. The geographical areas are listed as follows:

- Willow Creek Trail
- Business District
- Park and Open Land
- Industrial Park
- Residential
- Future Development

GOALS:

1. Inventory all potential planting sites within the Urban Growth Boundary;

2. Pursue opportunities for additional planting sites; and

3. Balance the developmental and environmental needs of the community and the physical needs of the trees.

POLICIES:

1. Site selection will support the definition of a "Well-Sited" tree;

2. Consideration will be given to maintaining defensible space around buildings; and

3. Selection process will focus on optimal land use aesthetics, and positive environmental impact, and will encourage the use of private land as planting sites.

TREE SELECTION:

The focus of the tree selection goal is primarily to create an urban forest of diverse tree species that appreciably enhance the environment and with a reasonable amount of maintenance can be expected to remain healthy for many years. Criteria for a tree selection at a particular site may include the following criteria:

- Shading or Crown Volume
- Continuity and Aesthetics
- Wildlife Support
- Erosion Control
- Longevity
- Resistance to Disease
- Density and Diversity
- City Image and Legibility
- Age and Size

- Problem Characteristics

GOALS:

1. Increase the Diversity of trees in the urban forest utilizing the selected tree list;

2. Increase the existence of native trees in the urban forest;

3. Optimize the tree density; and

4. Work with future development projects to help create a balance with environmental needs.

POLICIES:

1. Tree selection would reflect a balance between the environmental needs of the planting area and the geographical and physical constraints that could compromise the support and longevity of the tree.

2. In new planting the City will plan for diversity in species which shall include native Oregon trees when appropriate.

3. The City will encourage the planting of trees on private developments and offer consultation and advice regarding selection and density.

4. The City will also require developers to make provisions for ongoing maintenance of the trees.

MAINTENANCE:

The urban forest is one of the City's major assets. Trees in the community add to its character, definition, and quality of life. Therefore steps should be taken to protect our trees from elements that would reduce the longevity or beauty of our trees.

GOALS:

1. Improve the condition of public trees through monitoring and a quality maintenance program.

2. Monitor private trees where possible, for conditions that could adversely affect public trees and/or public safety-such as topping, improper protection during construction or planting trees where they will die.

3. Establish policy concerning underground utility placement near root systems and pruning techniques for protection of overhead lines.

POLICIES:

1. Retain existing well-sited trees on public land;

2. Advise private land owners of tree conditions needing attention and preferred corrective measures;

3. Plan for replacement planting when a tree removal is necessary; and

4. Work directly with utility companies and private land owners in regard to placement of utilities and structures to avoid incidental damage or possible problems in the future

EDUCATION:

The key to success in the Urban Forestry Management Plan is in its educational program. Through education the community as a whole becomes merged in a unified effort to support and enforce the principals of the plan and a city-wide tree ordinance. Information win be provided about proper location, planting and maintenance of trees, as well as species identification and how trees effect the environment and our quality of life.

GOALS:

1. Raise public awareness of the benefits of planting and maintaining trees in the urban environment;

2. Increase the public's knowledge of proper tree selection and the benefits of species diversity;

3. Increase public's knowledge of proper planting and maintenance techniques;

4. Make public aware of the benefits of long-range planning when landscaping with trees;

5. Raise public awareness of activities that compromise the health and longevity of trees; and

6. Publish/obtain informative literature for distribution to public.

POLICIES:

1. Work with citizens, home owners and developers on proper tree selection relative to our climate and soil types;

2. Work with the public on ways to minimize construction related damage; and

3. Work with and advise public on proper tree care and maintenance techniques.

ORDINANCE NO. 527

AN ORDINANCE REGULATING THE PLANTING, MAINTENANCE, PROTECTION, CONTROL, AND REMOVAL OF TREES AND OTHER VEGETATION IN AND UPON PUBLIC AREAS WITHIN THE LIMITS OF MADRAS, JEFFERSON COUNTY, OREGON AND ESTABLISHING A TREE COMMISSION.

The City of Madras ordains as follows:

ARTICLE I
INTRODUCTORY PROVISIONS

SECTION 1.1 TITLE

This ordinance shall be known as the City of Madras Urban Forestry Ordinance.

SECTION 1.2 PURPOSE

The City Council and Mayor of the City of Madras recognize the importance of the urban forest to the quality of life within the city and do hereby declare it to be a policy of the city that:

1) City property be landscaped to enhance the natural beauty of the city;

2) The responsibilities of city departments be coordinated to encourage quality landscaping;

3) Landscaped city property be effectively managed;

4) The street environment be made hospitable through landscaping; and

5) That residents of the city be encouraged to participate in beautification efforts through installing and maintaining quality landscaping on private property.

To fulfill this policy, this ordinance is enacted and intended to establish a Madras Urban Forestry Ordinance.

SECTION 1.3 INTENT

It is the intent of the City Council that the terms of this ordinance shall be construed as to promote:

1) The planting, maintenance, restoration, and survival of desirable trees and shrubs within the city;

2) The protection of community residents from personal injury and property damage; and

3) The protection of the city from property damage caused or threatened by the improper planting, maintenance, or removal of trees and shrubs located in and upon public areas and rights-of-way within the city.

SECTION 1.4 DEFINITIONS

For the purpose of this ordinance the following terms, phrases, words, and their derivations shall have the meaning given in this section:

MAY is discretionary.

PARKING/PLANTING STRIP. The area between the curb and sidewalk and the area between the sidewalk and private property line that is city-owned property; unpaved streetside city property; or an area inside the private property line where an easement is given to the city for the purpose of planting trees.

PRIVATE TREES. Any and all trees growing on private property within the city limits as of or after the effective date of the ordinance from which this section or successor sections derives and which are not defined or designated in this ordinance as street trees, park trees or public trees.

PUBLIC RIGHT-OF-WAY. A portion of property reserved for public use and accepted for such use by the city to provide circulation and travel to abutting properties, including, but not limited to, streets, alleys, sidewalks, provisions for public utilities, cut and fill slopes, and open public spaces.

PUBLIC TREES. All trees growing on any street, park, or any public place owned and/or managed by the City of Madras as of or after the effective date of this ordinance or its successor ordinances.

PUBLIC UTILITY. Any public, private or cooperatively owned line, facility or system for producing, transmitting or distributing communications, power, electricity, light, heat, gas, oil products, water, waste or storm water, which directly or indirectly serves the public or any part thereof within the corporate limits of the city.

SHALL is mandatory.

TREE TOPPING. The specific reduction in the overall size of a tree and/or the severe cutting back of branches or limbs to such a degree so as to remove the normal canopy and disfigure the tree.

URBAN FORESTRY PROGRAM. The program which is a part of the Public Works Department and which is responsible for the care and maintenance of the urban forest resources located on city property.

URBAN FORESTRY. The cultivation and management of trees and related plants for their present and potential contribution to the physiological, sociological, and economic well-being of urban society. Inherent in this function is a comprehensive program designed to educate the urban populace on the role of trees and related plants in the urban environment. In its broadest sense, urban forestry is one essential component of a multi-managerial system that includes watersheds within the City, wildlife habitats, outdoor recreation opportunities, landscape design, recycling of municipal vegetative wastes and tree care in general.

ARTICLE II
TREE COMMISSION FORMATION AND REQUIREMENTS

SECTION 2.1 CREATION OF COMMISSION

There is created the City Urban Forestry Commission, hereinafter referred to as the "Commission".

SECTION 2.2 ELIGIBILITY OF MEMBERSHIP

A person appointed as a member of the Commission shall be a resident of the city, except that three (3) such members may be from the area within the City Urban Growth Boundary or within the boundaries of Jefferson County. Commission members shall be individuals who are actively interested in the improvement of the city's urban forest. [Section 2.2 Amended by Ordinance No. 531, February 8, 1994 and by Ordinance No. 813, January 27, 2009]

SECTION 2.3 APPOINTMENTS

The Commission shall consist of seven (7) voting members to be appointed by the Mayor in the following manner:

1) Of the members first appointed, the Mayor shall designate three (3) to serve for a term of three (3) years, three (3) to serve for a term of two (2) years, and one (1) to serve for a term of one (1) year. Thereafter, as terms expire, all appointments shall be for terms of three (3) years.

[Section 2.3, Subsection 1), Amended by Ordinance No. 531, February 8, 1994.]

2) The Public Works Director or designee and Planning Director shall serve as ex officio members of the Commission.

3) The Public Works Department shall serve as administrative staff to the Commission.

SECTION 2.4 VACANCIES

Vacancies occurring in the membership of the Commission shall be filled in a manner preserving the designated representation by mayoral appointment for the unexpired term.

SECTION 2.5 REMOVAL FROM OFFICE

The Mayor shall be authorized to remove any member of the Commission, for good reason, prior to the normal expiration of the term for which such member was appointed.

SECTION 2.6 MEETINGS

1) The Commission shall meet at least quarterly and shall hold its meetings in compliance with the State Open and Public Meetings Act.

2) Special meetings may be called by a majority of the Commission members, the Chairperson, or the Mayor. The notice for such special meeting must be given not less than three (3) hours prior to the meeting. The notice shall be served personally or left at the member's residence or business office.

3) Four (4) members of the Commission shall constitute a quorum for the transaction of business. The Commission may act officially by an affirmative vote of any four (4) members.

4) Meetings shall be held at a public place as designated by the Commission.

5) The Commission shall cause minutes of its proceedings to be kept which shall be available for public inspection in the office of the City Administrator. The Commission shall record the yea and nay votes on any action taken by it.

SECTION 2.7 ELECTION OF COMMISSION OFFICERS

Each year the Commission, at its first regular meeting after January 1st, shall select one (1) of its members as Chairperson, another of its members as Vice-Chairperson, who shall perform the duties of the Chairperson during the absence or disability of the Chairperson, and one (1) of its members as Secretary.

SECTION 2.8 COMMITTEES

The Commission may appoint non-members to subcommittees as it deems appropriate and advisable to study, analyze, and make recommendations on matters which are presented for consideration.

SECTION 2.9 ATTORNEY DUTIES

The City Attorney shall be the attorney for the Commission.

SECTION 2.10 POWERS AND DUTIES

The Commission shall have the following powers and duties to:

1) Determine and establish such rules and regulations for the conduct of the Commission as the members shall deem advisable; provided, however, that such rules and regulations shall not be in conflict with this ordinance or any other city, state or federal law;

2) Recommend the adoption and alteration of all rules, regulations, and ordinances which it shall, from time to time, deem in the public interest and most likely enhance and beautify the urban forest, as well as for the purposes of carrying out this ordinance;

3) Recommend the broad matters of policy regarding the planting, maintenance, and removal of trees and other vegetation on city property;

4) Recommend policies for the review and approval of projects on private property where open space and/or landscaping is required as a condition for the development, as well as to recommend polices for the enforcement of approved plans;

5) Encourage landscaping installation and maintenance on private property by providing information on the value of landscaping and on the proper planting and care of trees and other vegetation;

6) Identify landscaping projects that will enhance the urban forest and advocate incorporation of the projects into the capital planning process;

7) Recommend policies and procedures to identify, mark, publicize, and preserve historic and notable trees on both public and private property;

8) Promote appreciation of trees and the urban forest through annual Arbor Day observances and other activities;

9) Review those portions of the city budget allocated for the planting and care of trees and other vegetation, and advise the Mayor on the appropriateness of the funding levels, as well as to explore other sources of funding for the planting and care of trees and other vegetation;

10) Encourage improvement of the urban forest through planning and policy development;

11) Assist city departments in every way possible to enhance the urban forest in the city; and

12) In all instances, to serve as an advocate of the City's urban forest.

SECTION 2.11 URBAN FORESTRY MASTER PLAN

The Urban Forestry Commission shall review, maintain, and update a comprehensive urban forestry plan for the planting, maintenance and replacement of trees in parks, along streets or in other public areas.

Any changes of such plan shall be submitted to the City Council for adoption prior to implementation. The Public Works Director shall seek the advice of any bureau which will be affected by the Plan and/or Plan revisions.

All tree planting, maintenance, and removal shall comply with and conform to the Plan or such portion thereof as shall have been adopted at the time of the planting, maintenance or removal.

ARTICLE III
URBAN FORESTRY PROGRAM SUPERVISION

SECTION 3.1 POWERS AND DUTIES OF PUBLIC WORKS DIRECTOR

The Public Works Director or his designee shall:

1) Supervise the Urban Forestry Program and enforce the provisions of this ordinance.

2) Assist the Commission in maintaining a Comprehensive Urban Forest Management Plan.

3) Maintain a list of approved varieties of trees that may be planted on any street or in any park or public area, consistent with the provisions of the Plan.

SECTION 3.2 RULES AND REGULATIONS

The Public Works Director may recommend, and the Council may adopt, additional regulations to be known as the Urban Forestry Standards and Specifications proper and necessary to effectuate the Urban Forest Management Plan within the city providing reasonable guidance for planting and maintaining public trees. Such rules and regulations shall not be in conflict with any other law or ordinance.

ARTICLE IV
STREET TREE RESPONSIBILITIES

SECTION 4.1 STREET TREES -- PRIVATE PROPERTY OWNER RESPONSIBILITY

Any owner of private property, abutting city parking/planting strips upon which street trees are located, may have the following responsibilities:

1) Periodic watering and fertilization of street trees when necessary to maintain good health and vigor.

2) Protection of street trees against damage caused by lawnmowers, weed trimmers, snow blowers, and similar equipment operated by the owner of adjacent private property.

ARTICLE V
PERMIT REQUIREMENTS

SECTION 5.1 LANDSCAPE PERMIT FOR PUBLIC RIGHT-OF-WAY

It is unlawful for any person to plant, prune or remove any public tree, without first obtaining a permit from the city. Said permit shall not relieve the applicant of any other legal requirement, including but not limited to, city business license, insurance, or state certification.

Permits shall not be required for work performed by city personnel.

1) **Planting and Maintaining Public Trees**

The Madras Urban Forestry Standards and Specifications shall be used as a guideline for the planting and pruning of public trees.

2) **Removal of Trees**

The Public Works Director must approve any permit for the removal of public trees and as a condition, the permittee may be required to compensate the city for the value of the tree(s) removed either by replacement thereof or by monetary assessment.

ARTICLE VI
PUBLIC NUISANCE
NOTIFICATION AND ABATEMENT REQUIREMENTS

SECTION 6.1 PUBLIC NUISANCE DEFINED AND DESIGNATED

The following are defined and declared to be public nuisances under this ordinance:

1) Any tree or shrub located on private property having a destructive or communicable disease or other pestilence which endangers the growth, health, life or well-being of trees, shrubs, or plants in the city;

2) The roots of any tree or shrub, located on private property, which cause the surface of the public street, curb or sidewalk to be upheaved or otherwise disturbed;

3) Any tree, shrub or portion thereof located on private property which, by reason of location or condition, constitutes an imminent danger to the healthy, safety or well-being of the general public; or

4) Any tree, shrub, or portion thereof located on private property that obstructs street lights, traffic signs, and the free passage of pedestrians or vehicles.

SECTION 6.2 RESPONSIBILITY FOR REMEDY OF PUBLIC NUISANCE

The owner of property upon which the nuisance is determined to exist shall be responsible for such nuisance and shall be responsible for its abatement.

SECTION 6.3 NUISANCE CREATION AND MAINTENANCE

It is unlawful for any person, either as owner, agent or occupant, to create or aid in creating or contributing to or to maintain a public nuisance.

SECTION 6.4 NUISANCE ABATEMENT

The city may determine when a public nuisance exists and may cause all nuisances declared to be such by this ordinance to be abated.

SECTION 6.5 NOTICE TO ABATE

The city may serve a notice in writing upon the owner, occupant or agent of any lot, building or premises informing them of the nuisance and requiring that the nuisance be abated. The owner shall have thirty (30) days from the date of the notice to abate said nuisance.

Failure to give a notice as provided herein shall not relieve the individual creating the nuisance from the obligation to abate such nuisance, or from the penalty provided for maintenance thereof.

Notice of appeal may be filed with the city within fourteen (14) days of service of notice. The appeal shall be decided by the City Council as to whether or not a nuisance exists.

SECTION 6.6 EXPENSE OF ABATEMENT RESPONSIBILITY OF OFFENDER

In case of neglect or refusal of any person(s) to abate any nuisance as defined by this ordinance, after written notification has been served, and within the time specified in the notice, the city may abate or procure the abatement thereof. The expense of such abatement shall be collected from the person(s) so offending as provided by law in the case of public nuisance abatements.

ARTICLE VII
PUBLIC TREE DESTRUCTION

SECTION 7.1 ABUSE OR MUTILATION OF PUBLIC TREES

1) Unless specifically authorized in writing by the Public Works Director, or his signee, no person shall intentionally damage, cut, carve, transplant, or remove any public tree, attach any rope, wire, nails, advertising posters, or other contrivance; allow any gaseous liquid or solid substance which is harmful to such trees to come in contact with them; or set fire or permit any fire to burn when such fire or the heat thereof will injure any portion of any such tree.

2) It shall be unlawful for any person, firm, or city department to top any public tree.

Trees damaged by storms or other natural 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 Public Works Director, or his designee.

ARTICLE VIII
CONSTRUCTION/EXCAVATION REQUIREMENTS

SECTION 8.1 PROTECTION OF PUBLIC TREES NEAR CONSTRUCTION ACTIVITIES

Any tree located on public property within fifteen feet (15') of any excavation, demolition or construction site of any building, structure, street or utilities works, which has potential for injury, shall be protected from such injury.

SECTION 8.2 PROTECTION OF PRIVATE TREES FROM EXCAVATIONS ON PUBLIC PROPERTY

Where excavations on public property may damage a tree(s) on private property, the contractor shall take reasonable care to protect such tree(s) from damage. All roots larger than three inches (3") in diameter shall be prevented from injury and all smaller roots which must be severed, shall be cleanly cut.

ARTICLE IX
GENERAL PROVISIONS

SECTION 9.1 PENALTIES

Any person who violates any provision of this ordinance or who fails to comply with any notice issued pursuant to provision of the ordinance, upon being found guilty of violation, shall be subject to a fine not to exceed $500 for each separate offense.

Each day that a violation of this ordinance continues shall constitute a separate violation.

If, as the result of the violation of any provision of this ordinance, the injury, mutilation, or death of a tree, shrub, or other plant located on city-owned property is caused, the cost of repair or replacement of such tree, shrub, or other plant shall be borne by the party in violation. The value of trees and shrubs shall be determined in accordance with the latest revision of "A Guide to the Professional Evaluation of Landscape Trees, Specimen Shrubs, and Evergreens" as published by the International Society of Arboriculture.

SECTION 9.2 SEVERABILITY CLAUSE

If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be invalid, or unconstitutional by any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance.

SECTION 9.3 CORRECTIONS

This ordinance may be corrected by order of the Madras City Council to cure editorial and clerical errors.

SECTION 9.4 EMERGENCY CLAUSE

It is hereby determined and declared that existing conditions are such that it is necessary for the immediate preservation of the peace, health, general welfare, and safety of the City of Madras that an emergency be declared to exist and this ordinance shall be in full force and effect immediately upon and after its passage by the Council and approval by the Mayor of the City of Madras, Oregon.

PASSED by the Council and approved by the Mayor on December 14, 1993.

City of Madras
Recommended Street Tree List

Below is a list of tree species, grouped by size and class. Refer to pages 36 - 38 for further explanation of form and spread. Please keep in mind the particular limitations of your planting site when selecting a tree for planting. The provided list is not all inclusive; it is provided as a beginning guide for homeowners. Should you wish to plant a species not on the list, **every effort will be made to accommodate your selection provided the species is viable in this zone and appropriate for the location.**

SMALL TREES (20' OR LESS):

Common Name	Form	Spread	Growth Rate
Olstead Norway Maple	Columnar	10'-20'	Fast
Globe Norway Maple	Rounded	10'-20'	Slow
Bowhall Red Maple	Columnar	10'-20'	Fast
Armstrong Red Maple	Columnar	10'-20'	Fast
California Redbud	Rounded	10'-20'	Medium
Western Redbud	Rounded	10'-20'	Medium
Japanese Oak	Oval	10'-20'	Medium
Gamble Oak	Rounded	10'-20'	Medium
Adams Crabapple	Rounded	10'-20'	Medium
Prairie Fire Crabapple	Rounded	10'-20'	Medium
Profusion Crabapple	Rounded	10'-20'	Fast
Sugartime	Oval	10'-20'	Medium
Kobus Magnolia	Oval	10'-20'	Fast
Southern Magnolia "Victoria"	Rounded	10'-20'	Medium
Kwanza Cherry	V-Shaped	10'-20'	Fast
Amanogowa Cherry	Columnar	10'-20'	Fast
Columnar Sargent Cherry	Columnar	10'-20'	Fast
European Mtn. Ash	Oval	10'-20'	Medium
European Mtn. Ash "Cardinal Royal"	Oval	10'-20'	Medium

MEDIUM TREES (20'-40'):

Common Name	Form	Spread	Growth Rate
Aspen	Columnar	10'-30'	Fast
Chanticleer Pear	Columnar	20'-30'	Fast
Aristocrat Pear	Pyramidal	20'-30'	Fast
Springsnow Crabapple	Rounded	20'-30'	Medium
European Pyramidal Hornbeam	Pyramidal	20'-30'	Medium

Nyssa Sylvatica	Pyramidal	20'-30'	Slow
Little Leaf Linden	Pyramidal	20'-30'	Medium
Green Ash "Summit"	Oval	20'-30'	Fast
Flame Ash "Raywood"	Rounded	20'-30'	Fast
"Accolade" Flowering Cherry	V-Shaped	20'-30'	Fast
Flowering Plum "Thundercloud"	Rounded	20'-30'	Fast
Jacqumonti Birch	Oval	20'-30'	Medium
European White Birch	Oval	20'-30'	Medium
Sargent Cherry	Rounded	20'-30'	Fast
Pacific Dogwood	Pyramidal	20'-30'	Slow
Emerald Queen Norway Maple	Rounded	30'-40'	Fast
Sugar Maple "Green Mountain:	Oval	30'-40'	Fast
Red Sunset Maple	Rounded	30'-40'	Fast
White Ash "Autumn Purple"	Oval	30'-40'	Fast
Green Ash "Patmore"	Oval	30'-40'	Fast
Maidenhair Ginko (Male Only)	Pyramidal	30'-40'	Slow
Paper Birch	Oval	30'-40'	Medium
"Sunburst" Honey Locust	V-Shaped	30'-40'	Fast
Japanese Pogoda Tree	Rounded	30'-40'	Slow
"Shademaster" Honey Locust	V-Shaped	30'-40'	Fast
Glenleven Linden	Pyramidal	30'-40'	Medium
Japanese White Birch	Oval	30'-40'	Medium
Scotch Pine	Pyramidal	30'-40'	Medium
American Sweetgum	Oval	30'-40'	Fast
Pin Oak	Pyramidal	30'-40'	Medium
Northern Red Oak	Pyramidal	30'-40'	Fast
London Plane Tree	Pyramidal	30'-40'	Fast
Dawn Redwood	Pyramidal	30'-40'	Fast

LARGE TREES (OVER 40'):

Common Name	**Form**	**Spread**	**Growth Rate**
Sycamore Maple	Rounded	Over 40'	Medium
October Glory Maple	Rounded	Over 40'	Medium
Bid Leaf Maple	Rounded	Over 40'	Fast
Scarlet Oak	Oval	Over 40'	Medium
"Village Green" Zelkova	V-Shaped	Over 40'	Fast
European Ash "Aurea"	Rounded	Over 40'	Fast
Tulip Tree	Oval	Over 40'	Fast
European Birch	Oval	30'-50'	Medium

Black Hills Spruce	Pyramidal	10'-20'	Medium
Siouxland Poplar	Pyramidal	10'-20'	Fast
Norway Poplar	Columnar	10'-20'	Fast
Prairie Sky Poplar	Oval	10'-20'	Fast
Narrow Leaf Poplar	Pyramidal	10'-20'	Fast
Western Larch	Columnar	10'-20'	Medium
Lodgepole Pine	Pyramidal	10'-20'	Medium
Western White Pine	Pyramidal	10'-30'	Medium
Balsam Fir	Pyramidal	15'-30'	Medium
Fraser Fir	Pyramidal	15'-30'	Medium
Noble Fir	Pyramidal	15'-30'	Medium
Douglas Fir	Pyramidal	15'-30'	Medium
Colorado Blue Spruce	Pyramidal	15'-30'	Medium
Engleman Spruce	Pyramidal	15'-30'	Medium
Norway Spruce	Oval	15'-30'	Medium
Incense Cedar	Oval	20'-30'	Medium
Ashleaf Maple	Oval	20'-40'	Medium
Ponderosa Pine	Pyramidal	20'-40'	Medium
Austrian Pine	Oval	20'-40'	Medium
Giant Sequoia	Pyramidal	20'-40'	Medium
Sugar Maple	Oval	30'-40'	Slow
Sugar Maple "Goldspire"	Columnar	20'-30'	Fast

PLANTING SPECIFICATIONS & STANDARDS
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DEFINITIONS

CITY PROPERTY: City owned or controlled property.

CONTAINER: Any receptacle that holds soil and plants.

MEDIAN PLANTING: That portion of public right-of-way lying between two (2) roadways and used for the separation of vehicular traffic. A planting median is unpaved and mayor may not have a raised curb.

ORNAMENTAL TREE: A woody plant attaining a mature height of not more than thirty-five feet (35') and possessing one or more of aesthetically attractive qualities such as beautiful flowers, ornamental fruit or pleasing foliage, bark or form; ornamental trees must conform to the same requirements as shade trees.

PLANTING BED: A designated area where the soil profile is discontinuous with that of the surrounding native soil and has been made so by soil amendments.

PLANTING VAULT: An in-ground container, usually concrete or metal, set below grade to hold landscape plants; for the purposes of this document, subject to all provisions for containers.

SHADE TREE: Evergreen or deciduous woody plant having one straight, well defined stem, and attaining a minimum height and crown spread at maturity of thirty-five feet (35'), and thirty feet (30') respectively. In addition, it must not have an offensive odor or require excessive maintenance such as, but not limited to: frequent treatments to keep it free of insects or disease, or cleanup due to litter. Trees with multiple stems (such as birch) may be used by permission.

STREET SIDE RIGHT-OF-WAY: Planting strip running parallel to the street between the curb and property line of private property.

INTRODUCTION TO PLANTING SPECIFICATIONS & STANDARDS:

Trees function as a community amenity that helps to soften the edges of the urban landscape. They lend a sense of beauty and stability to a community that a barren landscape cannot match. Trees help provide positive solutions to problems that plague urban environments. Trees temper climate and air quality. They take carbon dioxide and other pollutants from the air and give oxygen in return. Trees are necessary to help curb noise pollution, glare, and soil erosion. Often, long-time residents of a community can link a memory or an event to a specific tree and in this way trees function as an element of a community's history as well. The presence of a varied and high quality urban forest is often linked to a community's livability and ultimately to property values. It must be recognized that trees and urban infrastructure (sidewalks, buildings, curbs, streets, etc.) can and must coexist. This usually means tailoring the shape and species of the tree to the limits of the planting site. Too often trees are planted in situations poorly matched to the tree's natural requirements. This leads to complaints amongst those who live and work around the trees and to poor survivability for the tree.

PROHIBITED TREES:

Not all trees are suited for the unique limitations often seen in public rights-of-way. For this reason, and to preserve existing infrastructure elements such as sewer systems, water lines, sidewalks, curbs, and streets, the following trees shall not be planted in a public right-of-way, or a sewer or water easement:

- Poplar
- Cottonwood
- Box Elder
- Ginko (Female Only)
- Willow
- Black Walnut
- Ailanthus
- Elm

PERMITS:

In order to track new plantings and to help improve safety and tree care, the City has a permitting process for the removal, pruning or planting of any tree within the public right-of-way. The City of Madras encourages property owners to plant trees and to utilize public rights-of-way adjacent to their property. Permits are issued at no cost through the Madras City Hall.

There are three (3) types of permits:

Planting: A no fee permit will be required three (3) days prior to planting any tree in a public right-of-way. This will serve as a check for potential problems and as a record of the planting. It will be the permit applicant's responsibility to request a utility locate in the project area to avoid damaging underground utilities.

Pruning: A no fee permit will be required three (3) days prior to removing any limb or sucker greater than two-inches (2") in diameter from any tree within a public right-of-way. The application will specify the location, number, and type of tree to be pruned, the reason for pruning, and the method of pruning planned. These permits must be executed within thirty (30) days of issuance.

Removal: A no fee permit will be required three (3) days prior to removing any tree within a public right-of-way, It will be the responsibility of the applicant to request a utility locate to avoid damaging underground utilities. All tree removals must include stump removal and grade reestablishment. Removal criteria include:

a) The tree poses a safety hazard to pedestrian or vehicle traffic or threatens public utility service;

b) The tree poses a safety hazard to structures;

c) The tree prevents entering or exiting a lot or parcel, or prevents the development of a lot or parcel or the physical use of it;

d) The tree is diseased or insect infested and as such poses a hazard to people, structures, improvements or other trees;

e) The tree is so weakened by age, storm, fire, ice or other injury as to cause a danger to people or property; and

f) The tree is dead.

These permits must be executed within thirty (30) days of issuance.

Stumps: The right-of-way tree program requires that all stumps in the public right-of-way be removed to one foot below grade. This requires no permit.

THE CITY'S ROLE IN STREET TREE MAINTENANCE:

The City will be responsible for the care and maintenance of street trees within the designated downtown area, as well as trees within designated City parks.

The City may require that a property owner prune, trim or remove a tree or stump as per the Street Tree ordinance.

Property owners are notified by mail in such instances, and have ten (10) days to remedy the situation. Should a property owner fail to respond, the, City may remove, trim or prune the tree or stump and assess the cost to the adjacent property owner.

The downtown street tree program is a more specialized approach to urban forestry, seeking a certain aesthetic effect. Specified trees within these boundaries are maintained by the City.

PLANT MATERIAL:

All nursery stock should be grown in hardiness tones 6, 7, or 8 as defined by the Arnold Arboretum Hardiness Map of May 1, 1967 (Also USDA Hardiness Zones 6, 7 and 8). All trees and shrubs shall be rated for hardiness zones 1-5.

Specified varieties or cultivars of any species must be specimen type trees or shrubs and must meet all requirements of the American Standards for Nursery Stock, sponsored by the American Association of Nurserymen, Inc. (ANSI 260.1-1986 or current).

At least one (1) of each species or cultivar of plant material should have securely attached a waterproof label bearing the botanical and common names.

Plants must have normal, well developed branches, be uniformly and fully branched as seen from all sides, have good crotch angles, and a vigorous root system.

All plants must be alive and healthy, free from dead or broken branches, blemishes, scars, decayed spots, frost cracks, disfiguring knots, bruises, broken bark, or mutilation of any nature.

All pruning wounds must be well healed with no evidence of decay.

Shade trees should be free from branches to a minimum height of four feet (4') or to half their height (from the ground to the average growth of the main part of the crown) up to eight feet (8') whichever is greater. Shade trees must be at least 2-2 1/2" in diameter, measured six inches (6") above the ground.

Ornamental trees should be at least five to six feet (5'-6') in height.

Balled and burlapped shade trees should be nursery grown in a similar or a heavier USDA soil textural class to that of the planting site.

No plants should be bound with rope or wire at any time so as to damage bark, branches, foliage or destroy its natural shape.

All plants should be properly protected by a tarpaulin or other suitable covering during shipment to protect from desiccation or sun scorch. Evergreen plants should be sprayed with an anti-transpirant before digging.

Plants should not be stored more than twenty-four (24) hours on-site, from delivery until planting. While being held, they must be arranged so as not to impede pedestrian or vehicular traffic or safety. They must also be protected from desiccation or any other damage by being kept in the shade, well heeled in mulch, and watered.

All plants must meet the requirements of the state and federal law with respect to disease and insect inspections.

PLANTING:

For optimal survival, planting should begin in autumn after leaf fall, continuing until early spring before bud break. Soil temperature should be at least 40 degrees Fahrenheit.

Coniferous trees must be planted balled and burlapped.

The root ball must be protected from drying out or physical damage, and be intact when planted.

No balled and burlapped plant should be planted if the ball is cracked or broken either before or during the planting process.

Processed balled plants (as defined by ANSI-Z60.1 -1986) must not be accepted as balled and burlapped.

Burlapping materials must be biodegradable.

"Root Control" bags must be completely removed.

All wire, plastic, string or other binding material must be removed from around the trunk and upper 1/3 of the root ball. The burlap or wrapping material is then pulled down around the ball once it is in the planting hole so that it will be completely covered by backfill.

All plants must be installed with the root collar at ground level or slightly higher to allow for settling. No air pockets should remain in the planting hold and good contact between the soil and roots should be established. All construction materials or debris must be removed from the planting holes and beds before planting. Pedestal planting is recommended. (See Figure #1)

The planting hole must be at least one and a half times the diameter of the root ball. The sides of the hole should be vertical, and should be scored with a sharp tool to promote root growth into the surrounding soil.

Container plants may be used in planters and planting bed, only when the growth medium is removed, and any girdling or circling roots either spread out or pruned.

Bare root trees must be planted in the original soil of the site with any girdling or circling roots either spread out or pruned. Allow the root to stay in their natural grown form.

Root ball and soil around the plant to the drip line must be thoroughly and deeply watered at the time of planting.

A watering saucer should be formed of soil around the planting hole when backfill is returned to planting hole, and before mulching.

The American Forestry Association recommends that the soil should be turned over in the planting area five (5) times the diameter of the root ball. Set the tree on undisturbed solid ground in the center of the area so that the upper surface of the root ball is level with the surrounding soil.

Pruning at the time of planting is to be avoided unless to correct minor structural problems; no wound "paint" or "dressing" should be applied.

Mulch should be placed within twenty-four (24) hours of planting, to a depth of three inches (3"). Use organic material or a permeable fabric with an organic material over it. Hardwood mulch must be well composted, if used. Mulch must be kept three to six inches (3"-6") away from the stems of plants to prevent rot, disease, and insect problems. This also applies to the surface layer of gravel used in vaults, containers, or tree pits.

Amended soil is recommended.

Planting must be done only when the soil is not excessively wet or frozen.

GUYING AND STAKING (See Figure #1):

If necessary to maintain trees in an upright position, trees should be supported by proper guying and staking, when planted, according to the following provisions:

- Stakes must be sturdy, non-rusting metal, or untreated wood installed outside of, and spaced evenly around, the root ball.

- "Angle Stakes" are not permitted for use along street side plantings or in pedestrian areas.

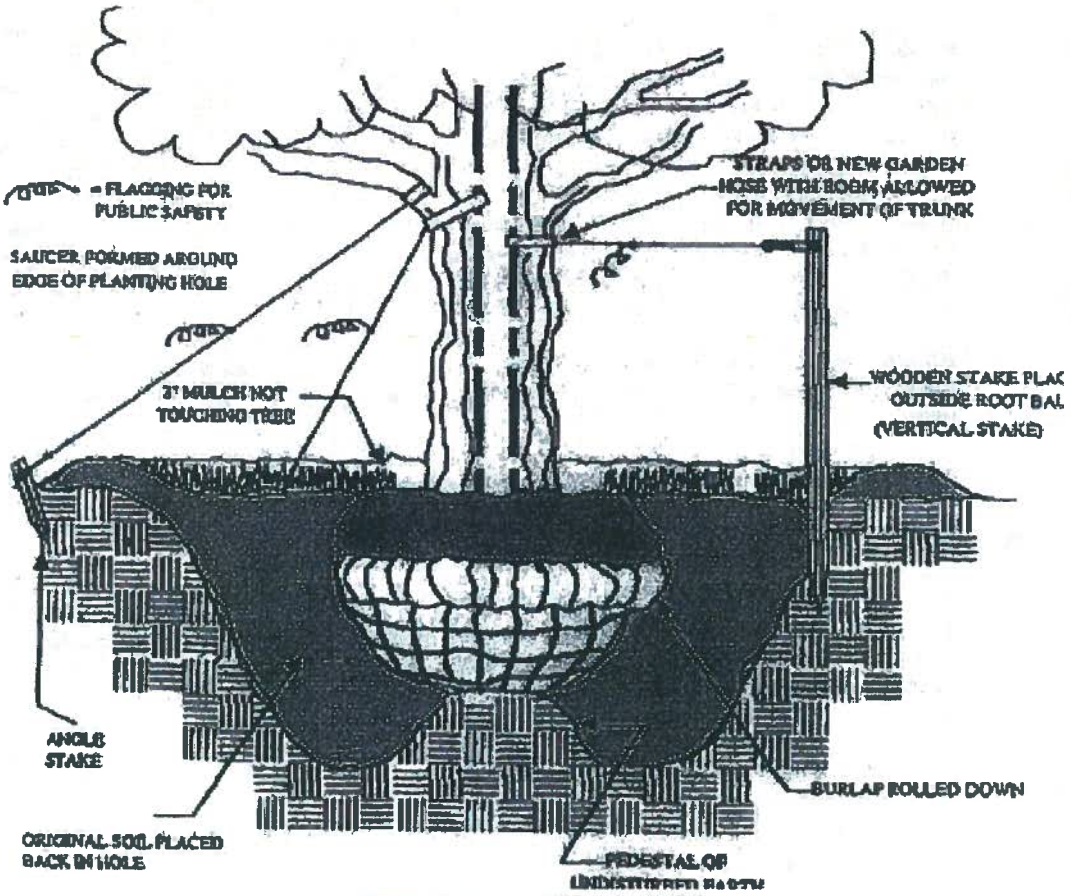
- For plantings in pedestrian traffic areas, containers, and tree pits, underground guying is recommended. Only untreated wood and galvanized wire should be used. (See Figure #2)

- Guying and staking should be done so that the tree is secured from blow over, but must allow movement of the trunk two inches (2") in any direction.

- No wires should touch the tree – only broad straps (minimum two inches (2") wide) or new garden hose should be used at the trunk.

- Guy wires must have provisions for adjustment, such as turnbuckles, and be tagged for visibility and safety.

FIGURE #1: PLANTING & STAKING



Planting Hole to be 1.5 Times the Ball Diameter

FIGURE #2: UNDERGROUND GUY DETAIL

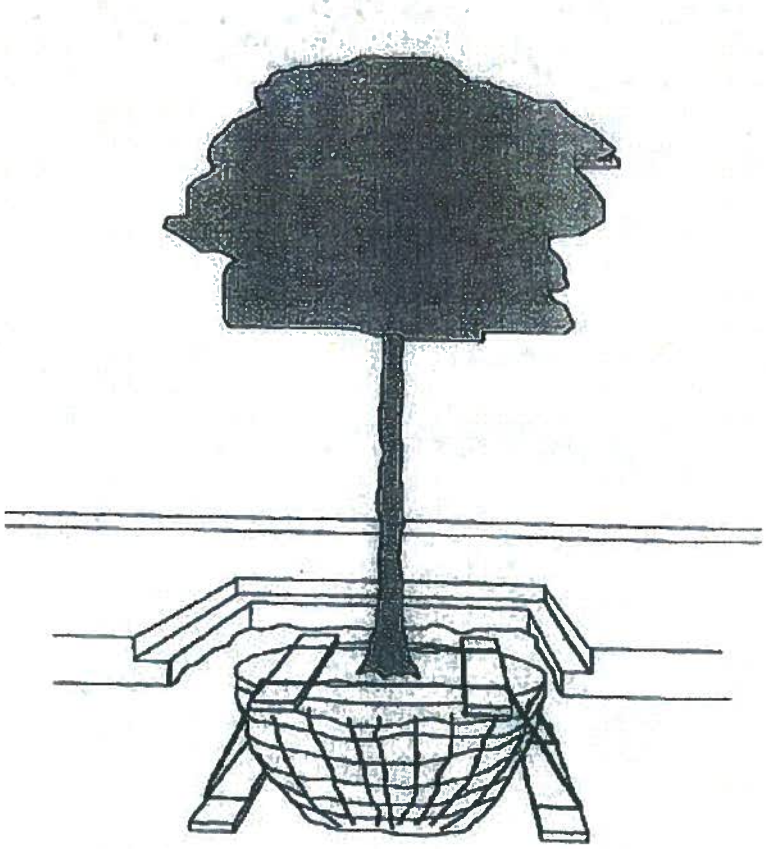


FIGURE #3: BASIC TREE SHAPES

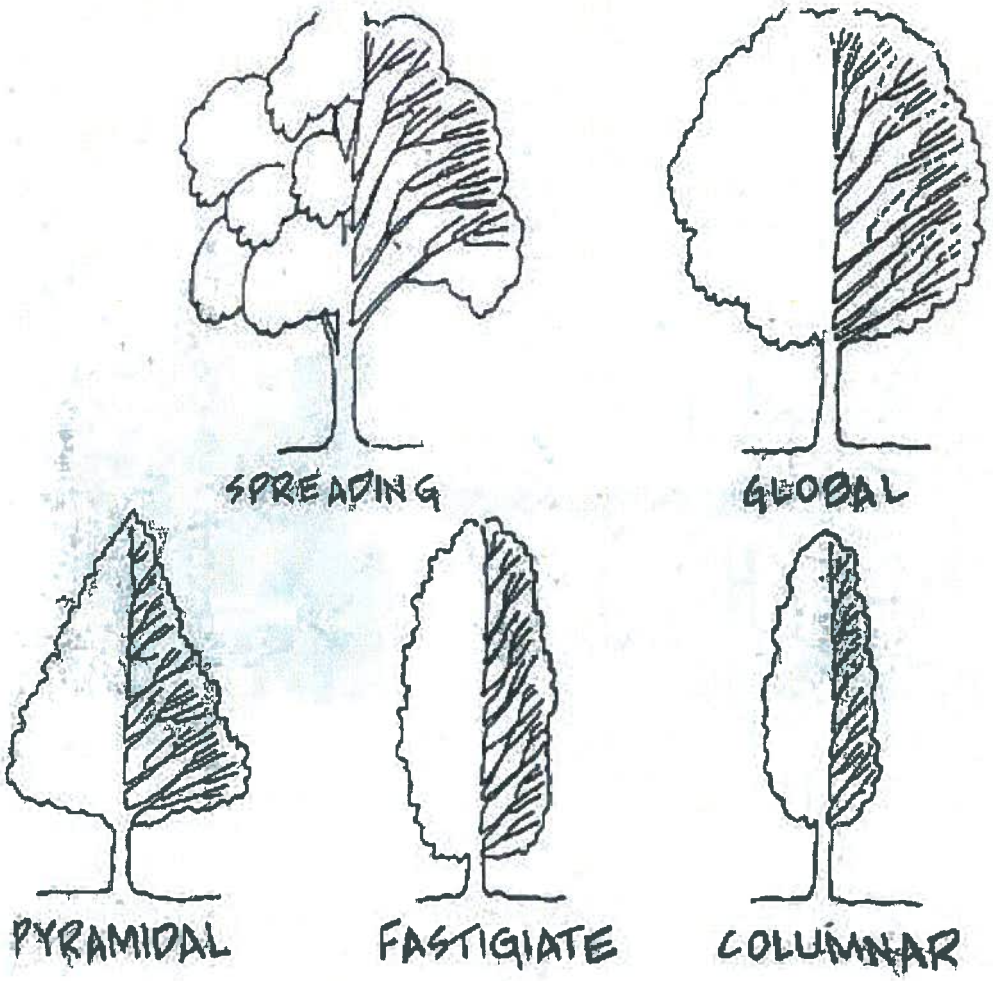
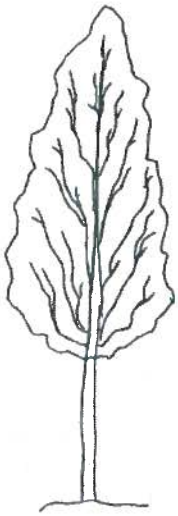


FIGURE #4: BASIC TREE SHAPES

There are several basic tree shapes. Some are more suitable for a particular location than others.

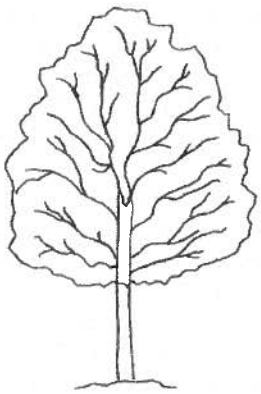
OVAL

An upright tree shape is good for a street tree, as it will not impede vehicle traffic. A basic concern here should be overall height restrictions due to overhead lines. Examples are Northern Red Oak, Mountain Ash and Sweet Gum.



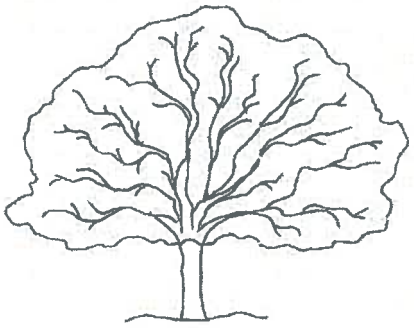
COLUMNAR

Columnar trees are often chosen for street tree plantings due to space limitations. The narrow branch angles result in branches that are generally weaker than wider angled branches. Armstrong Red Maple and Olmstead Norway Maple are recommended.



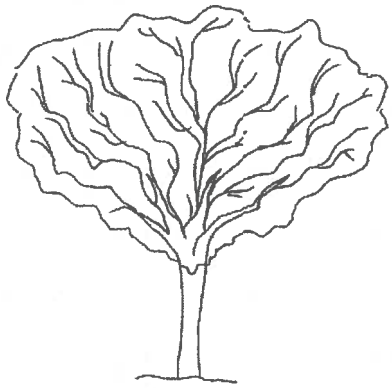
PYRAMIDAL

Many trees that start out as columnar grow into a pyramidal shape as the lower branches grow and begin to droop. For example, conifer trees with low branches might cause vision problems and have to be pruned regularly. Examples of good trees are European Hornbeam, Ginkgo and Aristocrat Pear.



ROUNDED

Smaller rounded trees are good choices under utility lines. Some larger rounded trees have multiple tops that can be pruned to form a "V" around power lines. Recommended examples include Norway Maple and Yellowwood.



V-SHAPED

A vase shape is a favored form because the branches arch to form a canopy over streets and sidewalks while staying clear of power lines and traffic. Examples would include Zelkova and Kwanzan Cherry.

EARLY MAINTENANCE:

Guying, staking and wrapping materials should be removed from the tree at the end of the first year and disposed of lawfully.

For the first two (2) years newly planted trees should be watered at least once a week when rainfall is less than one inch (1").The combination of rainfall and applied water should be equal to one inch (1") of rainfall. Watering should be sufficient to soak the top eighteen inches (18") of the soil.

Selective pruning should be restricted to dead, dying, diseased, or broken branches, structural problem, or to suppress rank growth such as water sprouts, using only sharp, clean tools. No "topping" or "rounding" should be done.

For the first year frequent and thorough inspections should be made for insect and disease problems and indicated remedies applied promptly.

Mulch (organic) must be maintained at a depth of three inches (3") at most sites. Where tree grates are used gravel should be maintained to the surface of the grate (See Tree Pits).

THE RIGHT TREE IN THE RIGHT PLACE:

Not all trees are suited for the special demands that streets and rights-of-ways place on them. Pavement, traffic, air pollution, and overhead obstructions all place stress on trees, and in turn the tree has an impact on those things. Because a tree is capable of living for many years, considerations must be given to the special demands of each planting site. The key is to plant the right tree in the right place.

If a tree is to be planted in a paved area such as a sidewalk or a parking lot, then there should be an opening cut large enough to accommodate tree growth. Without an opening, tree growth will result in damage to the paved area or to the tree. At a minimum, four feet (4') should be allowed. Recognize that larger trees will require larger openings.

Other considerations should be the width of the parking strips or parkways where trees are to be planted. Take note of any overhead obstruction that may cause problems later.

Different trees are recommended for different planting situations on the basis of size, branching habit and the potential for damage to the surrounding pavement, water lines, sewers and/or utilities.

The following diagrams illustrate some common planting situations. Figure #5 shows a small tree under power lines planted in a relatively narrow parking strip. Good suggestions, depending on the height of the wire, are Flowering Cherries (except horizontal branching varieties), Flame Ash, Globe Norway Maple, and Yellowwood.

Figure #6 shows a less restrictive situation. There are no overhead obstructions in this case, and the tree is to be planted in a parking strip between the curb and sidewalk. Good trees-for this situation would be Maples (most), Ashes, Lindens, Oaks, and Zelkova. Areas with wider strips (8' -10' or more) can accommodate larger species like Big Leaf Maple, Tulip Tree, Sycamore, Conifers.

FIGURE #5

FIGURE #6

Figure #7 shows a narrower planting strip and a curb lane of traffic. In this case, upright branches are needed to avoid conflicts with vehicles. Examples would include Red Oak, Red Maple, Sergeant Cherry, Cleveland Maple, Olmstead Norway Maple, and Green Ash.

Figure #8 shows a narrow space between the curb and large buildings. This is seen most commonly in downtown business areas. Columnar varieties are especially useful in this situation, and examples include Armstrong Red Maple, Columnar Sergeant, Cherry and Columnar Hornbeam.

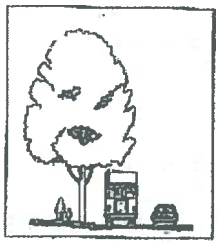


FIGURE #7

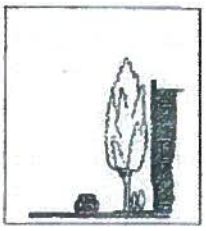


FIGURE #8

LINEAR SPACING:

Trees with the following crown forms should be spaced as follows:

Crown Form (See Figure #3)

Tree Form	Spreading	Global, Pyramidal	Fastigiate, Columnar
Shade	40'	35'	20'
Ornamental Tree	25'	15'	10'

Width of planting area within City right-of-way (i.e. distance between the curb and sidewalk):

No tree will be planted where the rooting space is less than four feet (4') in width.

The minimum width of a planting site shall be governed by the following formula where dbh is the average mature trunk diameter (at 4.5' from the ground) of a given species/cultivar measured in inches and the width is the distance, in inches, between the curb and the sidewalk:

$$\text{Width/dbh} \geq 1.5$$

If the result is less than 1.5 then that species/cultivar cannot be planted at that site.

No trees that commonly produce a large buttress root system should be planted in a site less than seven feet (7') wide.

Width of medians: No tree should be planted in any median that is less than ten feet (10') in width.

LOCATION STANDARDS:

Trees Planted in the Street Side Right-of-Way:

On public streets without sidewalks or on major thoroughfares with no or one sidewalk, trees will be located to accommodate future sidewalk placement.

Trees should be located in the street right-of-way so as not to interfere with current and future utility line corridors.

Trees and shrubs (that may attain a height of three feet (3') or more) that may form a hedge or screen should not be allowed within the "sight triangle" so as to obscure the sight distances at intersections. The minimum dimensions of the sight distance triangle are: measure ten feet (10') back from the intersection at the property comer of the approach street, then seventy feet (70') from the intersection of the property comer along the cross street (See Figure #5). Curves in the road, hills, and other site specific factors may require extensions of these dimensions.

Minimum distances from intersections, alleys, and driveways shall be measured from the property line and along the property line (See Figure #8).

Intersections:

No tree shall be located within thirty feet (30') on the near side and within twenty-five feet (25') on the far side (See Figure #9). Consideration of the mature size and form of the trees planted nearest the intersection should be given so that the trees will not create a visual obstruction. Trees in medians shall be located a minimum of fifty feet (50') from intersections.

Alleys: No tree shall be located within twenty feet (20') on the near side and ten feet (10') on the far side.

Driveways: Commercial – no trees shall be located within twenty feet (20') on the near side and ten feet (10') on the far side.

Residential – no trees shall be located within ten feet (10').

Minimum Distance from Walks, Curbs, and Utilities:

Sidewalk	2'
Access or Courtesy Walk	5'
Face of Curb	2'
Manholes and Catch Basins	10'
Fire Hydrants	10'
Water Meters and Other Utility Boxes	5'

Buried utility lines that traverse the planting strip:

8"-10" Water and Sewer	10'
12"-16" Water and Sewer	15'
18" + Water and Sewer	20'
All Other Services	10'

Overhead Utility Lines:

No tree with the potential of reaching a mature height of more than thirty-five feet (35') should be planted in the right-of-way under "primary" overhead wires.

Minimum Distance from Structures:

Shade Trees	10'
Ornamental Trees	6'
Shrubs	3'

FIGURE #9: LOCATION STANDARDS

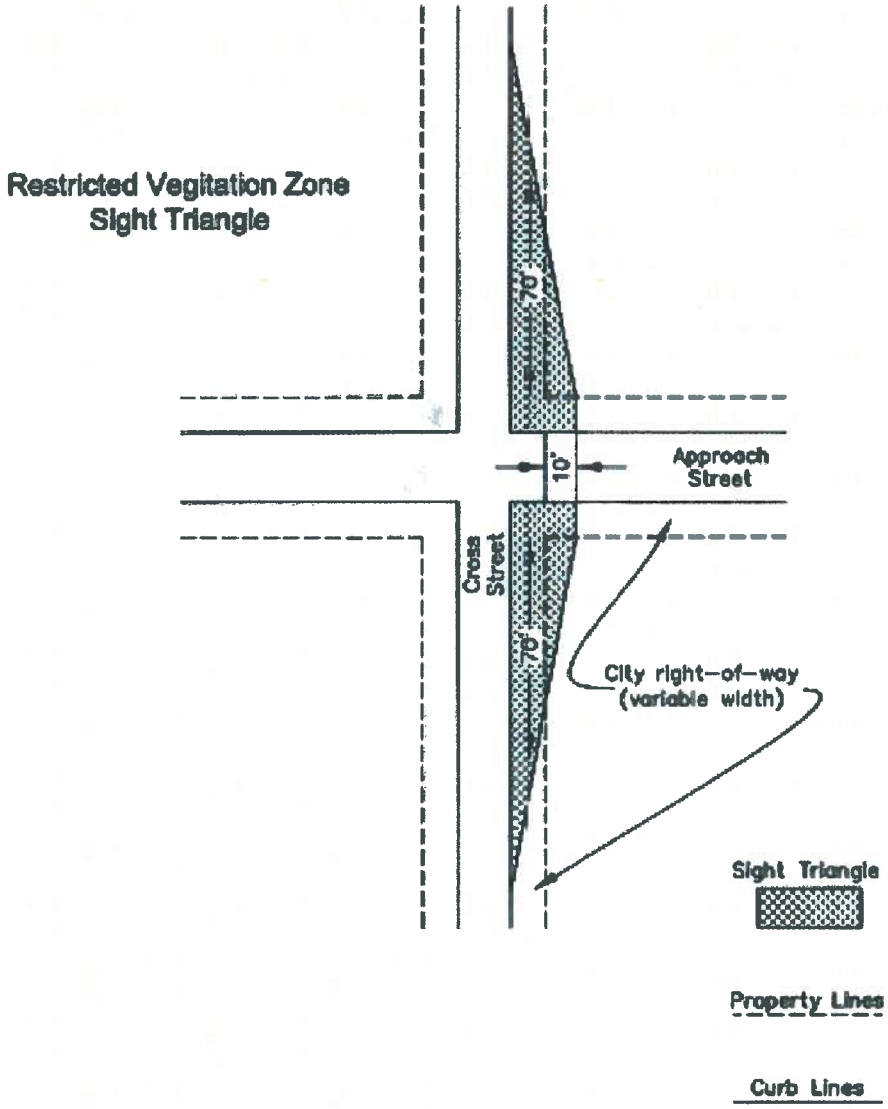
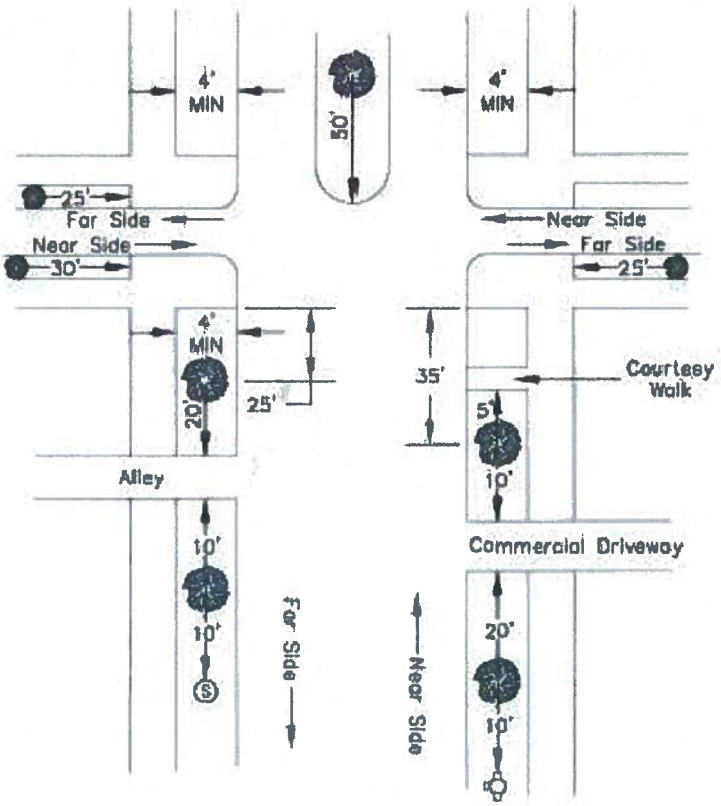


FIGURE #10: LOCATION STANDARDS



Minimum Distance from Street Lights:

Shade Trees	Spreading Crown	20'
	Global, Pyramidal	16'
	Fastigiate, Columnar	10'
Ornamental Trees	All	10'

Any tree planted ten feet (10') or closer to a structure should have an impenetrable root barrier installed near the structure. The root barrier should run the length of the planting area or the structure, and reach a depth of four feet (4').

Vehicular Area:

In or next to any vehicular area, provisions should be made to prevent any parts of the vehicles from touching plants. In addition, provision should be made to protect plants from noxious fumes or chemicals by providing sufficient distance or by not allowing back-in parking.

Shrubs Planted in the Street Side Right-of-Way:

Shrubs should follow minimum distance requirements for trees, for curbs, sidewalks and utilities. No shrub should be planted within three feet (3') of a structure.

TREE WELLS:

Size, Depth and Design Standards

Tree pits in curb attached sidewalks that are twelve feet (12') or greater in width should have no less than twenty-four square feet (24 sq. ft.) of surface area for root growth. Tree pits must have a minimum depth of three and one half feet (3 1/2') of soil that will support good plant growth. Weathering steel, ADA compliant tree grates may not be smaller than 4x4 foot in size. Submit product for review and approval by the City Public Works Department.

If an unsatisfactory sub grade soil is encountered, a vault should be used and a sandy loam as a growth medium in the vault (See "Containers, Planting Beds and Vaults").

Drainage must be provided so that water can flow out of the vault or pit. Test the pit for drainage capacity by filling it with water, which must drain out of the pit within twenty-four (24) hours. The pit must be barricaded or covered over for

public safety. If the soil does not have this drainage capacity, or if a vault is used, constructed drainage must be supplied.

Any tree pit located where there is a likelihood of de-icing chemicals being used should have provisions for preventing such chemicals from entering the pit.

Tree pits may have the shape of a rectangle or a circle; other designs will not be allowed except by written permission.

Tree pits located on City property should follow the same standards for spacing, location, and minimum distances from structures as outlined in "Location Standards" and "Linear Spacing."

Tree grates should have provision for trunk expansion of the tree, such as pop out concentric rings in the grate around the trunk.

The area between the soil surfaces to the top of the tree grate should be filled with washed #67 crushed granite or #67 "river wash" stone and not organic mulch.

Trees must be planted at the center of the pit.

Only modular pavers should be used, laid without mortar or sealant of any kind, so that air and water can reach the roots.

Excavation of Tree Pits

Trees in tree pits may be under-planted with groundcover at the time of planting, and such groundcover may be partially replaced as necessary to maintain it properly. Annuals should not be planted in tree pits, unless there is a system so the annuals can be planted and maintained without competing with or disturbing trees.

CONTAINERS, PLANTING BEDS AND VAULTS:

General Requirements

Containers, planting beds or vaults must have sufficient volume to allow trees proper root growth. (The intent of these provisions is to keep plants in containers and bed systems with limited root space from competing with each other to the detriment of both.)

For the first two (2) years newly planted trees should be watered at least once every two weeks when rainfall is less than one inch (1"). The combination of rainfall and applied water should be equal to one inch (1") of rainfall. Watering

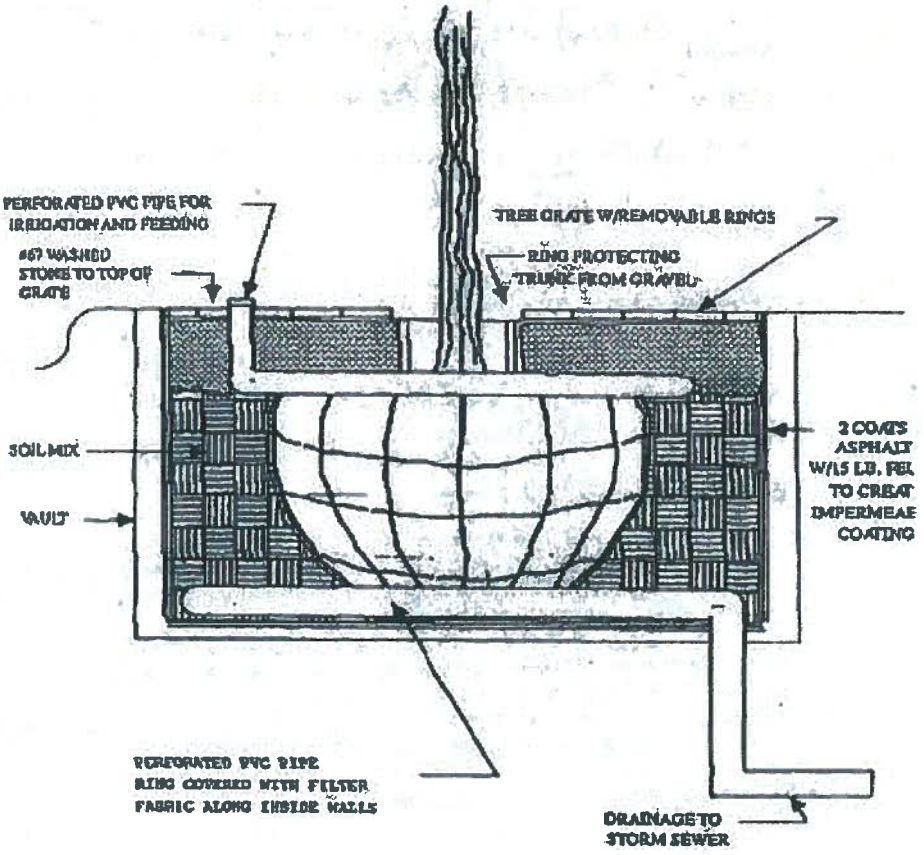
should be sufficient to soak the top eighteen inches (18") of the soil.

Minimum Distance from Structures

Shade Trees	10'
Ornamental Trees	6'
Shrubs	3'

Plants shall not be placed in front of any building exit (so as to impede clear exit or entry) wall hydrant, or stand pipe connection, or over any manhole or other access, or drain or catch basin.

FIGURE #11


PERFORATED PVC PIPE FOR IRRIGATION AND FEEDING
#67 WASHED STONE TO TOP OF GRATE
TREE GRATE W/REMOVABLE RINGS
RING PROTECTING TRUNK FROM GRAVEL
SOIL MIX
VAULT
2 COATS ASPHALT W/15 LB. FEL TO CREAT IMPERMEAE COATING
PERFORATED PVC PIPE RING COVERED WITH FELTER FABRIC ALONG INSIDE WALLS
DRAINAGE TO STORM SEWER

Plants located where the use of de-icing chemicals is likely should have provisions to prevent such chemicals from entering the container, bed or vault.

Special care must be taken to ensure that a sufficiently wide, clear and safe pedestrian and vehicular way is provided. There should be no less than six feet (6') of width for pedestrians and ten feet (10') of width for vehicles.

Minimum Depths of Soil Should be Allotted as Follows:

Shade Trees	3.5'
Ornamental Trees	3.0'
Shrubs	2.0'

Minimum Square Footage of Soil Surface Area:

Shade Trees	100 Square Feet Per Tree
Ornamental Trees	64 Square Feet Per Tree
Medium - Large Shrubs	9 Square Feet Per Shrub
Small Shrubs	4 Square Feet Per Shrub

Trees in Containers or Planting Beds Should be Spaced as Follows:

Crown Form*	Shade Tree	Ornamental Tree **
Spreading	30'	15'
Globular or Pyramidal	20'	10'
Fastigiate or Columnar	15'	8'

*See Figure #3 **Distance from each other or from a shade tree

Soil Mixture Used in Containers or Vaults:

a) Soil should be a sandy loam as defined by USDA soil classification.

b) Soil acidity must fall within the range of 5.0-6.0 pH.

c) The soil must be low in woody material, iron, and sulfate content.

d) Drainage should be provided by:

1. A four inch (4") thick layer of coarse gravel at the bottom of the container, separated from the soil by a semi permeable fabric. (See Figure #10)

2. Either constructed drainage, such as pvc pipe, tiles, or drainage

holes, allowing water to pass freely from the container and into proper drainage channels. Pipe or holes must be prevented from clogging up by wrapping or covering with a filter fabric.

Container Requirements:

Containers must be constructed:

- to withstand wetting and drying out;
- to withstand freezing and thawing;
- to resist decay;
- in a manner that renders containers conveyable;
- fixed planters must have the prior approval;
- in a manner that renders them feasible to maintain;
- to retain moisture for proper plant growth, yet provide a means to drain excess moisture out of the container with no sharp projections, rough edges, or splinters; or
- Containers of masonry or wood must be lined with an impermeable material such as asphalt or resin based coating, or plastic or fiberglass liner. Water must be able to drain through liner via constructed drainage or weep holes.

Plants Suitable for Containers:

Trees and shrubs must be able to withstand:

1. Freezing and thawing;
2. Drought; and
3. Urban conditions, including but not limited to: drying winds, reflected heat and pollution.

Trees and shrubs must have a healthy, fibrous root system.

Trees and shrubs must be root hardy to above ground temperature extremes of the

Madras area (0° F).

Soil Treatment for Planting Beds:

The existing soil must be excavated (and saved) to a depth of eighteen to twenty-four inches (18" - 24"). The bottom should be rototilled to break up any possible hardpan, with any rocks and debris removed. The saved soil should be amended as follows – to four (4) parts soil, add two (2) parts well composted leaf mold (composted for at least one (1) year) and one (1) part coarse angular sand, and thoroughly homogenized; if the soil is heavy clay, substitute the sand to another part leaf mold. Replace in the bed as growth medium for the scheduled plants. Mounded or raised beds are recommended.

TREE PRUNING TIPS

Tree pruning, when properly performed, can greatly enhance the health, vigor and appearance of a given tree. With some basic tips in mind, you can properly and safely prune your trees. It is recommended that any tree trimming that must be performed from within the tree itself and off the ground be performed by trained professionals. **MOST IMPORTANTLY, NEVER TRIM AROUND OR NEAR POWER LINES.** Should you have a tree that is growing into power lines, contact your electrical utility for assistance. Shown below are some pruning basics:

WHERE SHOULD YOU CUT?

FIGURE #12: TREE PRUNING TIPS

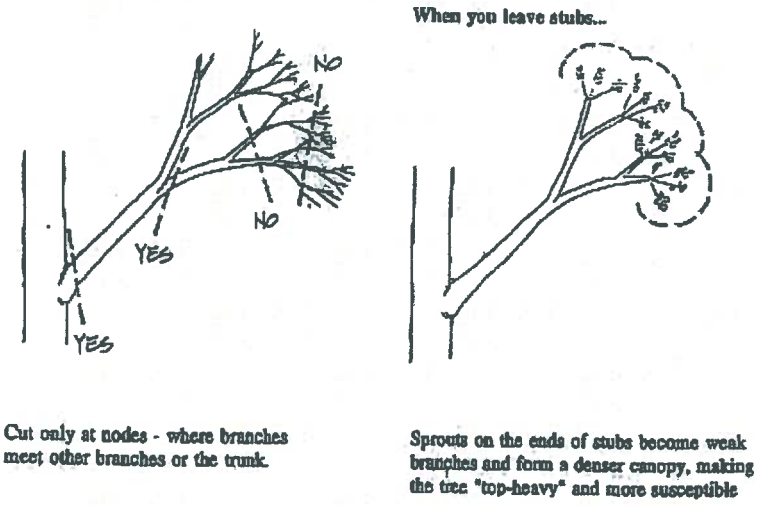
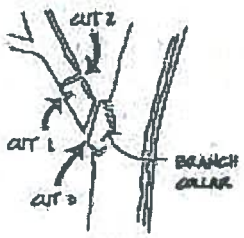


FIGURE #13: TREE PRUNING TIPS

TO TRIM LARGE BRANCHES:



1) Cut under side of branch so bark doesn't tear.

2) Cut off branch.

3) Final cut to remove stub. Injury or removal of branch collar destroys tree's defense system.

"GOOD CUT"

A ring of living tissue will form around a good cut after one year.

"BAD CUT"

Do <u>not</u> flush cut, or strip bark.
Do <u>not</u> paint wound.

FIGURE #14: TREE PRUNING TIPS

HOW TO HAT RACK A TREE & WHY NOT TO

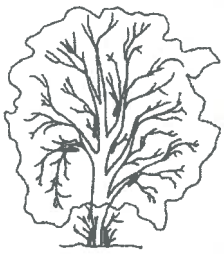
WHAT HAPPENS WHEN YOU HAT RACK?

The "hat rack" look

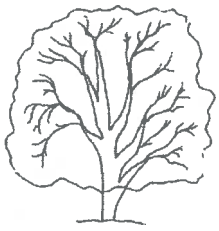
Turns into…

The "lollipop" tree…
(The natural shape is ruined)

WHAT TO DO…

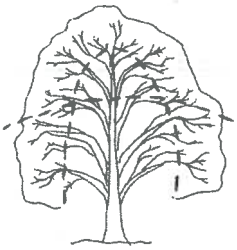


A neglected shade tree
/ = make cut here



A properly trimmed
tree when finished.

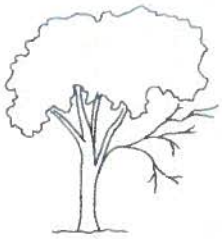
WHAT NOT TO DO…



Do not reduce canopy.
Do not leave stubs.

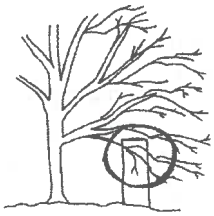
A poorly trimmed
tree when finished.

WHAT SHOULD YOU CUT?



Remove dead branches.

Remove branches that cross
or rub on each other.



Remove long-hanging branches

APPENDIX A: HISTORY

The first settlers would have found few trees mixed in among the native grasses and shrubs. Western Juniper, Ponderosa Pine, Willows, Poplars and Cottonwoods survived in their various niches. The settlers brought with them or acquired other types of trees to make their surroundings more hospitable. Various fruit trees, Lombardy Poplars and Black Locusts were planted around homes, homesteads and farms. Later Siberian Elm and Russian Olive were Introduced. This selection was probably based upon ease of acquisition and hardiness with trees that were tolerant of heat, cold, drying winds and drought. They were proven performers.

As other trees have become more available, they were added to the landscape of Madras. Presently, the Siberian Elm predominates the urban forest. This tree is hardy and fast growing, but over the years has had rough treatment both in the form of neglect, as well as zealous pruning and topping. These practices have left much of our urban forest in a ragged and unkempt condition.

To begin to ameliorate the predominance of Siberian Elm and the lack of other trees in Madras, the community began to take stock of the problem. In the early 1980's, a group of interested and concerned citizens, along with landscape architect Paul Morris, convened at Camp Sherman for a weekend retreat organized by the Chamber of Commerce, City of Madras and Jefferson County. The goal of their retreat was simply that "Beautification of Madras and Jefferson County is a must." Beautification was a top priority along with maintaining the liability and continued support of agriculture, manufacturing base and tourism. Incredible progress has been made. Thanks to the efforts of many people Sunshine Corner was developed at the corner of Fifth and "D" Streets.

Shortly thereafter, street trees were planted in downtown Madras. Subsequently, the South Y was landscaped and the island on South Fifth Street was developed including a hand carved history pole by Clyde Keller. These developments were a very significant improvement in the beautification of the South end of Madras.

One of the significant developments from the Camp Sherman meeting was Mr. Morris' very detailed and futuristic vision of Madras and Jefferson County. From that vision has sprung the development of Willow Creek with paths, lights and now over one hundred (100) trees planted along the walking and biking trail. This project is a cooperative effort of the City and several property owners who provided easements for the trail.

In 1991 the Oregon Department of Forestry and the University of Oregon surveyed Oregon communities about what, if any, urban forestry programs existed. Most communities had no formal or ongoing programs in place. Funding was often cited as a limitation, as well as lack of knowledge of where to begin and how to proceed. During

this time Mr. Paul D. Ries, Urban Forestry Coordinator of the Oregon Department of Forestry made information available about the U.S. Small Business Administration and Community Forestry Assistance grants.

In March 1992 Madras applied for and received funding for a Small Business Administration tree planting grant in the amount of $14,445.00 to plant one-hundred seven (107) trees along the Willow Creek Bike Trail from Seventh Street and continuing to "C" Street. Technical and practical assistance was provided by Mr. Ries and Ms. Kristin Ramstad from the Oregon Department of Forestry.

The Oregon community survey had revealed that seventy-five percent (75%) of Oregon communities had a population of 5,000 or less and only three (3) of these communities had obtained Tree City U.S.A. designation. It also revealed that many of these small communities believed that a forestry program did not apply to them.

For these reasons Mr. Ries decided to take action. He developed a model city project for urban forestry. In the latter part of 1992, City Administrator, Jo Anne Sutherland, submitted an application to become one of these model cities. Madras and Reedsport were selected from the twelve (12) applicants. At our initial meeting, Paul said "Urban trees and forests contribute to our quality of life, but also have a real economic value in terms of heating and cooling, erosion control and wildlife habitat." At that meeting the all volunteer, Madras Urban Forestry Council, was formed. Paul and Kristin have provided intense technical assistance during 1993 to help the council achieve Tree City U.S.A. designation and to act as an example to other small cities.

During 1993 the Forestry Council has developed an Urban Forestry Ordinance, conducted a tree site and planting site survey, developed an Urban Forestry Master Plan and observed Arbor Day. These things have been achieved with the support and cooperation of citizens, Chamber, City and County.

In 1993, the City also received a Community Forestry Assistance Grant from the Oregon Department of Forestry for summer intern, Mr. Kevin Monohan, a University of Oregon Landscape Architecture Student. Kevin and his straw hat spent the summer of 1993 walking the streets of Madras surveying and then drawing the plans for street trees from the Industrial Park area on the North to the Prineville Junction on the South. In addition, Kevin worked with David Olsen of David Evans and Associates on the mapping of downtown streets in preparation for an overhaul of the central business district including widened sidewalks, bike path and placement of additional street trees. Included in this plan is automatic watering of the present and future street trees.

In 1994, the Multi-Functional Forest Belt project at the industrial site was done. Urban Forestry applied for the Oregon Department of Forestry SBA Tree Planting Grant.

Then in 1997 the Madras Neighborwoods Project was started with sponsors from Pacificorp Greencorps Program, Portland General Electric Company.

Recent projects have been: 2000-"J" Street Extension to McTaggart Road (Phase I); 2002-Cherry Lane Improvement Project; 2003-Industrial Park Infrastructure Project; and 2005- North Highway 97/Highway 26 Intersection Project (will contain a considerable amount of landscaping.)

In addition to these projects, the Madras Urban Forestry Commission celebrates each year The National Arbor Day Celebration. They have dedicated trees at Westside Elementary, Friendship Park, Sahalee Park and near the district office.

This management plan is the result of the efforts of volunteers of the Madras Urban Forestry Council. It is intended to guide the City Council, City Departments, residents and the Madras Urban Forestry Commission to a beautiful and healthy urban forest. The Urban Forestry Commission, a seven (7) member body appointed by the Mayor, now takes up where the Forestry Council leaves off. It will review and assist in establishing policies and will guide and advise the City Council about urban forestry issues in the City of Madras.

The Urban Forestry Commission originated on December 14, 1993 with these first members:

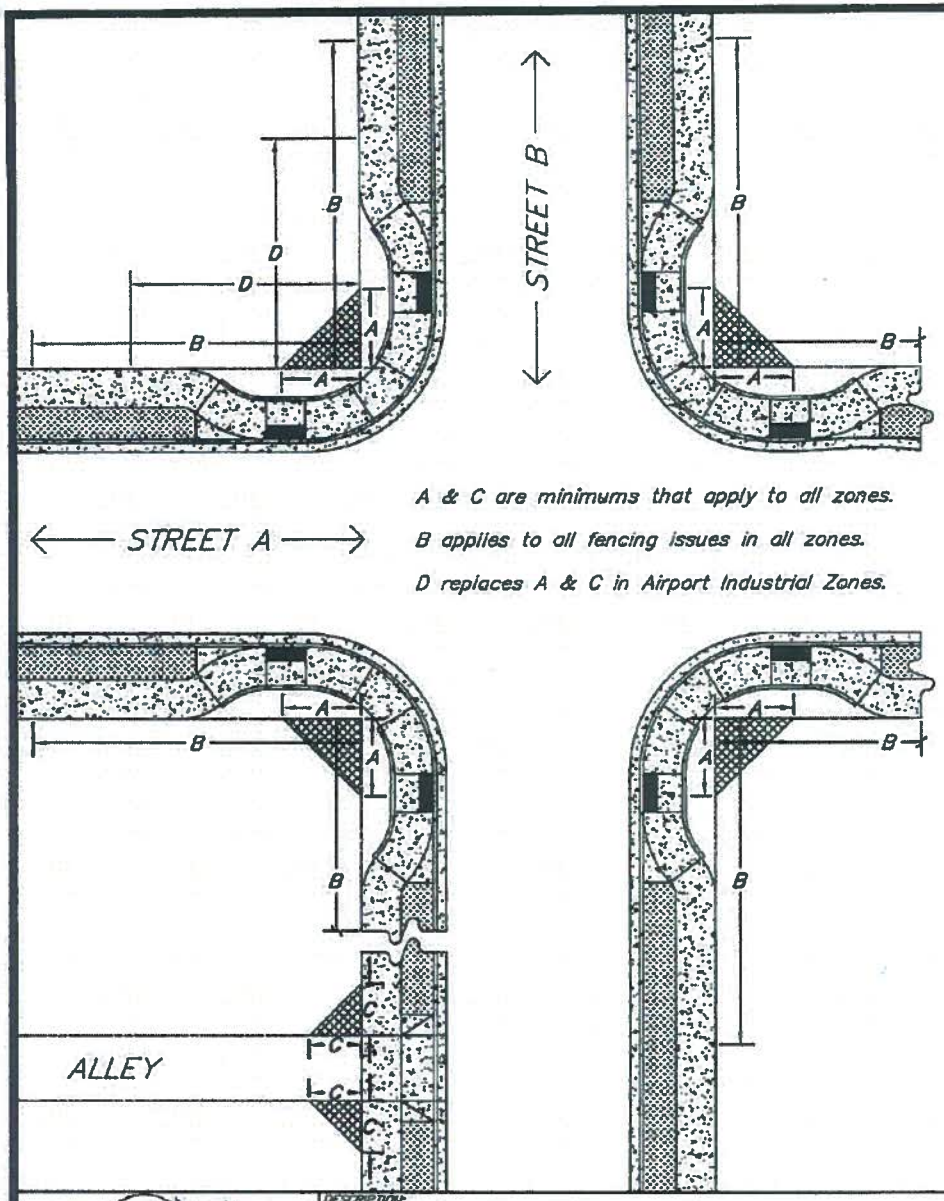
Jay Binder, Vice-Chairman
Brad Jorgensen
Kandy Gies, Secretary
Charles Nichols
Robert Osborn
Donald Sutherland
William Wysham, Chairman

APPENDIX B: ADDITIONAL RESOURCES

TABLE OF CONTENTS

WEBSITE RESOURCES

- City of Madras "Public Works Department" www.ci.madras.or.us
- Pacific Power "Education & Safety" www.pacificpower.net
- Arbor Day Foundation & Tree City USA www.arborday.org



A & C are minimums that apply to all zones.

B applies to all fencing issues in all zones.

D replaces A & C in Airport Industrial Zones.

Madras Ordinance No. 723, Section 8-12.1.3, Definitions

VISION CLEARANCE AREA A triangular area on a lot at the intersection of two (2) streets or a street and a railroad – two (2) sides of which are lot lines measured from the corner intersection of the lot lines to a distance specified in these regulations.

The third side of the triangle is a line across the corner of a lot joining the ends of the other two (2) sides. Where the lot lines at intersections have rounded corners, the lot lines shall be extended in a straight line to a o point of intersection.

The vision clearance area contains no plantings, walls, structures or temporary or permanent obstructions exceeding three and one-half feet (3 ½') in height, measured from the top of the curb

Madras Ordinance No. 723, Section 8-12.4.3, FENCES

Fences, hedges and walls not more than eight feet (8') in height are permitted on all front, rear and side property lines of the parrcel, except for corner lots (lots which abut more than one street) fences shall be three feet (3') in height for a distance of fifty feet (50') from the street corner

Madras Ordinance No. 723, Section 8-12.4.11, VISION CLEARANCE

Vision clearance shall be provided in all zoning district residential zones with the following distances establishing the size of the vision clearance area:

A. The minimum distance shall be twelve feet (12') at intersections comprising of two (2) streets, or one (1) street and a railroad right-of-way.

B. At intersections including an alley, the minimum distance shall be eight feet (8').

Madras Ordinance No. 723, Section 8-12.3.9 (G)(2)

Vision clearance setback from all street intersections: Thirty-five feet (35')

LEGEND

A = Twelve Feet (12')
B = Fifty Feet (50')
C = Eight Feet (8')
D = Thirty-five Feet (35')

Property Line

Clear Vision Area

SCALE: NONE

CITY OF MADRAS

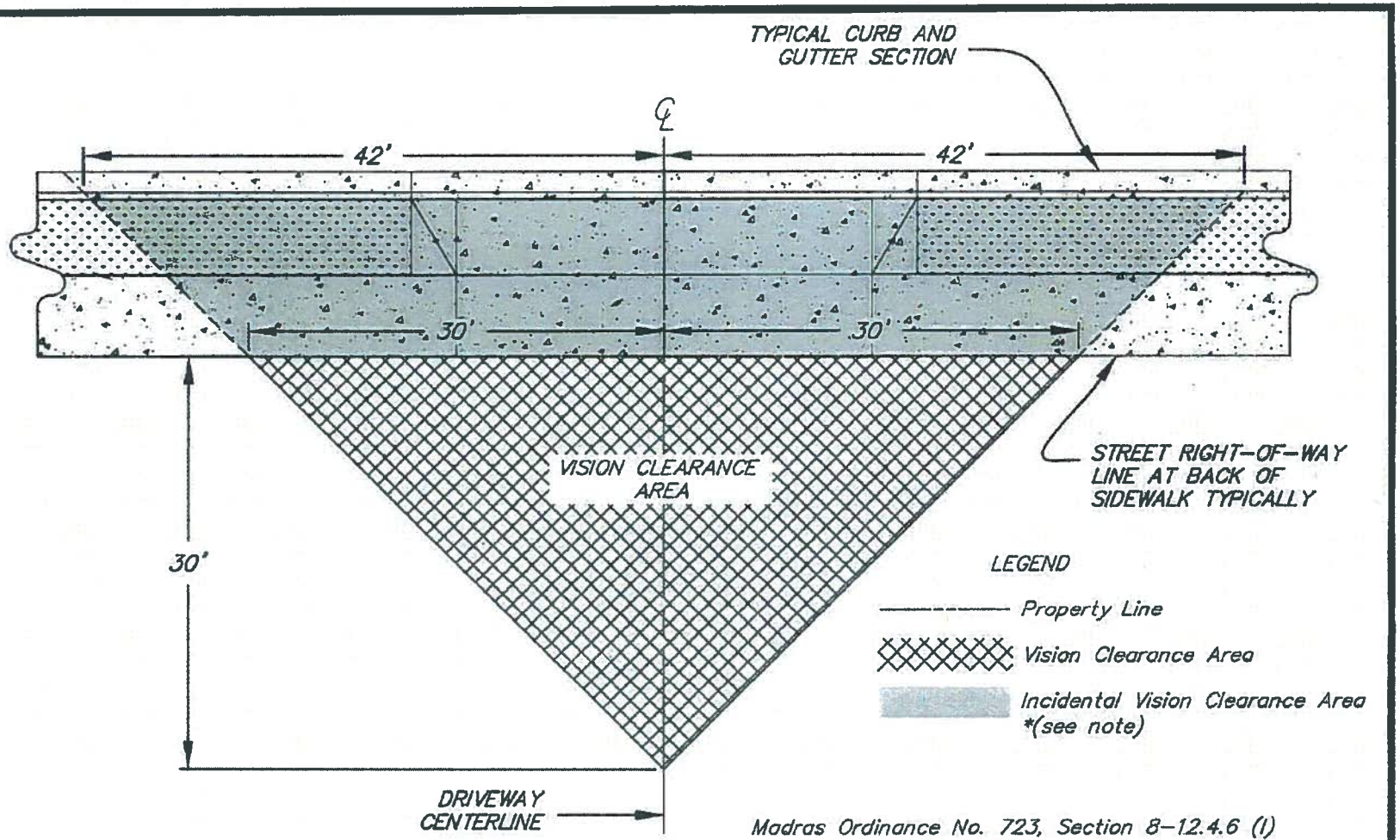
DESCRIPTION:

Vision Clearance for Residential Zones & Alleys

DATE: 1/28/08

DRAWN BY: TRW

SHEET: 1 of 2



Incidental Vision Clearance Area will have the same restrictions as the defined vision clearance area. Distances along curb are dependant on the offset from the property line to the face of curb. For every foot of offset from the property line to the face of curb, add one foot (1') to the minimum thirty foot (30') at the property line.

Madras Ordinance No. 723, Section 8-12.4.6 (I)

"Driveways shall have a minimum vision clearance area formed by the intersection of the driveway centerline, the street right-of-way line, and a straight line joining said lines through points thirty feet (30') from their intersection."

SCALE: NONE

CITY OF MADRAS

DESCRIPTION:

Vision Clearance for Commercial/Industrial Zone Accesses

DATE: 1/28/08

DRAWN BY: TRW

SHEET: 2 of 2

1/21 CITY OF MADRAS TREE BUBBLER DETAIL

A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas

TREE HAZARD EVALUATION FORM 2nd Edition

Site/Address: _____

Map/Location: _____

Owner: public _____ private _____ unknown _____ other _____

Date: _____ Inspector: _____

Date of last inspection: _____

HAZARD RATING:

_____ + _____ + _____ = _____

Failure Potential + Size of part + Target Rating = Hazard Rating

_____ Immediate action needed

_____ Needs further inspection

_____ Dead tree

TREE CHARACTERISTICS

Tree #: _____ Species: _____

DBH: _____ # of trunks: _____ Height: _____ Spread: _____

Form: ☐ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☐ intermediate ☐ suppressed

Live crown ratio: _____ % Age class: ☐ young ☐ semi-mature ☐ mature ☐ over-mature/senescent

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approx. dates: _____

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☐ indigenous ☐ protected by gov. agency

TREE HEALTH

Foliage color: ☐ normal ☐ chlorotic ☐ necrotic Epicormics? Y N

Foliage density: ☐ normal ☐ sparse Leaf size: ☐ normal ☐ small

Annual shoot growth: ☐ excellent ☐ average ☐ poor Twig Dieback? Y N

Woundwood development: ☐ excellent ☐ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☐ fair ☐ poor

Major pests/diseases: _____

Growth obstructions:

☐ stakes ☐ wire/ties ☐ signs ☐ cables

☐ curb/pavement ☐ guards

☐ other _____

SITE CONDITIONS

Site Character: ☐ residence ☐ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break

Irrigation: ☐ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted

Recent site disturbance? Y N ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved: 0% 10-25% 25-50% 50-75% 75-100% Pavement lifted? Y N

% dripline w/ fill soil: 0% 10-25% 25-50% 50-75% 75-100%

% dripline grade lowered: 0% 10-25% 25-50% 50-75% 75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of fail ☐ clay ☐ expansive ☐ slope _____° aspect: _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent veg. ☐ _____

Exposure to wind: ☐ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms ☐ never ☐ seldom ☐ regularly

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☐ landscape ☐ hardscape ☐ small features ☐ utility lines

Can target be moved? Y N Can use be restricted? Y N

Occupancy: ☐ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

TREE DEFECTS

ROOT DEFECTS:

Suspect root rot: Y N **Mushroom/conk/bracket present:** Y N **ID:** _____

Exposed roots: ☐ severe ☐ moderate ☐ low **Undermined:** ☐ severe ☐ moderate ☐ low

Root pruned: _____ distance from trunk **Root area affected:** _____% **Buttress wounded:** Y N **When:** _____

Restricted root area: ☐ severe ☐ moderate ☐ low **Potential for root failure:** ☐ severe ☐ moderate ☐ low

LEAN: _____ deg. from vertical ☐ natural ☐ unnatural ☐ self-corrected **Soil heaving:** Y N

Decay in plane of lean: Y N **Roots broken** Y N **Soil cracking:** Y N

Compounding factors: _____ **Lean severity:** ☐ severe ☐ moderate ☐ low

CROWN DEFECTS: Indicate presence of individual defects and rate their severity (s = severe, m = moderate, l = low)

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Codominants/forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms/bracket				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

HAZARD RATING

Tree part most likely to fall: _____

Inspection period: _____ annual _____ biannual _____ other _____

Failure Potential + Size of Part + Target Rating = Hazard Rating

_____ + _____ + _____ = _____

Failure potential: 1 - low; 2 - medium; 3 - high; 4 - severe
Size of part: 1 - <6" (15 cm); 2 - 6-18" (15-45 cm);
3 - 18-30" (45-75 cm); 4 - >30" (75 cm)
Target rating: 1 - occasional use; 2 intermittent use;
3 - frequent use; 4 - constant use

HAZARD ABATEMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Cable/Brace: _____ **Inspect further:** ☐ root crown ☐ decay ☐ aerial ☐ monitor

Remove tree: Y N **Replace?** Y N **Move target:** Y N **Other:** _____

Effect on adjacent trees: ☐ none ☐ evaluate

Notification: ☐ owner ☐ manager ☐ governing agency **Date:** _____

COMMENTS