

**CITY OF DULUTH
BUFFER, LANDSCAPE & TREE ORDINANCE**

TABLE OF CONTENTS

ARTICLE 1: INTENT, PURPOSE & TITLE

1.1	Intent	1
1.2	Purpose	1
1.3	Title	1

ARTICLE 2: DEFINITIONS

2.1	Definitions of Words and Phrases	2
-----	--	---

ARTICLE 3: BUFFER REGULATIONS

3.1	Applicability	8
3.2	Standards for Permanent Buffers	8
3.3	Standards for Construction Buffers	10

ARTICLE 4: LANDSCAPE REGULATIONS

4.1	Applicability	12
4.2	Landscape Strip Planting Requirements	12
4.3	Off-Street Parking Lot Planting Requirements	13
4.4	No-Access Easement Screening Requirements	14

ARTICLE 5: TREE PRESERVATION & REPLACEMENT REGULATIONS

5.1	Purpose and Intent	15
5.2	Exemptions	15
5.3	Approval Letter Required for Non-Development Activity	16
5.4	Tree Removal Permit Required for Development Activity	16
5.5	Application Requirements	17
5.6	Minimum Tree Density Requirements	18
5.7	Alternative Compliance Methods	19
5.8	Tree Survey Plan and Inventory	20
5.9	Tree Survey Inspection	20
5.10	Tree Removal Permit	20
5.11	Tree Protection	21
5.12	Tree Preservation Standards	21
5.13	Tree Damage	22
5.14	Tree Planting Standards	23
5.15	Tree Removal Compliance Inspection	24
5.16	Approval Letter Fee: Permit Fee	24
5.17	Tree Preservation	25

ARTICLE 6: PLAN AND PLAN SPECIFICATION

6.1	Water-Efficient Design Consideration	26
6.2	Buffer and Landscape Plan Specifications	26

6.3	Tree Preservation/Replacement Plan Specifications	28
ARTICLE 7: COMPLIANCE		
7.1	Artificial Materials Prohibited	31
7.2	Warranty or Maintenance Surety.....	31
7.3	Inspection.....	31
7.4	Performance Surety	31
7.5	Continuing Maintenance.....	32
ARTICLE 8: ENFORCEMENT, VIOLATION & PENALTIES		
8.1	Enforcement.....	33
8.2	Violation and Penalty.....	33
8.3	Appeals and Waivers	33
ARTICLE 9: ADOPTION & AMENDMENT		
9.1	Repeal Clause.....	35
9.2	Severability.....	35
9.3	Amendment.....	35
9.4	Effective Date.....	35
TABLE A: SUMMARY OF APPLICABILITY & EXEMPTIONS		36
TABLE B: CREDIT FOR EXISTING TREES.....		37
TABLE C: CREDIT FOR REPLACEMENT TREES		38
APPENDIX A: APPROVED SPECIES LIST FOR DULUTH.....		39
APPENDIX B		42
APPENDIX C: SPECIMEN TREES.....		45
APPENDIX D: EXAMPLES OF SINGLE FAMILY TREE PLANTING REQUIREMENTS		47
EXAMPLE 1: UTILITIES LOCATED WITHIN EXISTING TREES/ UTILITY LINE THROUGH VS. UNDER ROOTS		48
EXAMPLE 2: TREE SURVEY EXAMPLE		49
EXAMPLE 3: TREE PROTECTION PLAN EXAMPLE		50
EXAMPLE 4: TREE PROTECTION DETAIL.....		51
EXAMPLE 5: DEAD LIMB OVERHANGING STREET		52

EXAMPLE 6: BRANCHES OBSTRUCTING SIDEWALK..... 53

EXAMPLE 7: BASIC PRUNING STANDARDS..... 54

ARTICLE 1

INTENT, PURPOSE AND TITLE

1.1 INTENT

- 1.1.1 This Ordinance shall apply to all properties or portions thereof located within the incorporated areas of Duluth, Georgia, to the extent of the provisions contained herein. The City Council of the City of Duluth hereby finds that the protection and preservation of trees, the planting of new trees and other landscape material, and the provision of buffers between dissimilar uses as part of the land development process is a public purpose and provides for the public health and general welfare.

1.2 PURPOSE

- 1.2.1 The purpose of this Ordinance is to preserve and enhance the City's natural environment through tree protection and preservation, the planting of trees and other landscape material, and the provision of natural and/or planted buffers between dissimilar uses. The Ordinance is intended to further the City's policy that all development sites where trees are most commonly removed will achieve upon project completion a uniform standard related to tree coverage, landscaping and buffers.
- 1.2.2 This Ordinance is also intended to further the City's policy of encouraging all individuals or firms who propose to develop land, and which are required to meet the requirements of this Ordinance, to consider the use of water-efficient landscaping principles and techniques.

1.3 TITLE

- 1.3.1 This Ordinance shall be known as 'The Buffer, Landscape, and Tree Ordinance of the City of Duluth, Georgia' and may be referred to generally as 'The Buffer Ordinance', or 'The Landscape Ordinance', or 'The Tree Ordinance', or, as used herein, 'this Ordinance.'

ARTICLE 2

DEFINITIONS

(amended 6-22-98)

2.1 DEFINITIONS OF WORDS AND PHRASES

- 2.1.1 In construing the provisions hereof and the meaning of each and every word, term, phrase, or part thereof, where the context will permit, the definitions of words as contained in the adopted Zoning Ordinance of the City of Duluth, Georgia, supplemented by the following, shall apply:

Basal Area: The cross-sectional area expressed in square inches, of a tree trunk at diameter breast-height (DBH) expressed herein in terms of "units" per acre.

Buffer: Land area used to visibly separate one use from another through screening and distance to shield or block noise, light, glare, or visual or other conditions, to block physical to non-similar areas, or to reduce air pollution, dust, dirt, and litter.

Caliper: A standard of trunk measurement for understory or replacement trees. Caliper inches are measured at the height of six inches (6") above the ground for trees up to and including four inch (4") caliper and twelve inches (12") above the ground for trees larger than four inch (4") caliper.

City: The City of Duluth, Georgia.

Clearing: The removal of vegetation from a property, whether by cutting or other means.

Clear Cutting: The broad removal of all trees and /or vegetation from a particular area.

Conifer Tree: Any tree with needle leaves and a woody cone fruit including, but not limited to, pine, juniper and cedar species.

Construction Buffer: A type of buffer which is temporary and remains in effect during the construction of a project.

Critical Root Zone: The minimum area beneath a tree which must be left undisturbed in order to preserve a sufficient Critical Root Zone (CR) will typically be represented by a concentric circle centering on the tree's trunk with a radius equal in feet to one (1) times the number of inches of the trunk diameter. Example: The CRZ radius of a twenty inch (20") diameter tree is twenty feet (20').

Department: The City of Duluth Department of Planning and Development (P&D), as established by the Duluth City Council, and as operated through the actions and administration of the appointed Director of said department or his/her designee.

Density Factor: A unit of measure used to prescribe the calculated tree coverage on a site. See Appendix B.

Development Activity: Any alteration of the natural environment which requires the approval of a development or site plan and issuance of a development permit. Development Activity shall also include the “thinning” or removal of trees from undeveloped land in conjunction with a forest management program, and the removal of trees incidental to the development of land or to the marketing of land for development.

Development Permit: A permit issued by the City that authorizes Development Activity, and includes, but is not limited to, a soil erosion permit, clearing and grubbing permit, land disturbance permit or building permit.

Development Regulations: The adopted regulations providing for the subdivision and development of real property within the City Duluth, Georgia, as amended from time-to-time by the Duluth City Council.

Diameter Breast Height (DBH): The standard measure of overstory tree size (for trees existing on a site). The tree trunk is measured at a height of four and one half feet (41/2') above the ground. If a tree splits into multiple trunks below four and one half feet (41/2'), measure the trunk at its most narrow point beneath the split.

Director: The Director of the Department of Planning & Development or his/her designee responsible for administering the provisions of this Ordinance.

Drip line: A line on the ground established by a vertical plane extending from a tree's outermost branch tips down to the ground; i.e. the line enclosing the area directly beneath the tree's crown from which rainfall would drip.

Floodplain, 100 year: Those lands subject to flooding, which have at least a one percent probability of flooding occurrence in any calendar year, and specifically, the floodplain as shown on the Federal Emergency Management Agency Map (FEMA). (Available in the Department of Planning & Development)

Grading: The placement, removal, or movement of earth by use of mechanical equipment on a property.

Grubbing: The removal of stumps or roots from a site.

Hardwood Tree: Any tree that is not coniferous (cone bearing). This definition is based on the colloquialism, and does not necessarily reflect any true qualities of the tree.

Land Disturbance Permit: Any permit other than a Building Permit issued by the City of Duluth that authorizes clearing or grading activities on a site or portion of a site. Said permit may be Clearing, Clearing and Grubbing, Grading, or Development Permit as defined and authorized under the Development Regulations of City of Duluth.

Landscape Architect: The agent or assignee of the City of Duluth who is professionally qualified and duly licensed to perform landscape architectural services and having those primary responsibilities under this Ordinance, and charged with the responsibility for approval on as need basis of all landscape plans in the City of Duluth as determined by the Director of Planning and Development. The Zoning Compliance Officer will be charged with primary enforcement responsibilities if a violation of this Ordinance should occur. (added 5/13/02)

Landscape Strip: Land area located within the boundary of a lot and required to be set aside and used for landscaping upon which only limited encroachments are authorized.

Lot Building Area: The area of a lot encompassed by front, sides and rear yard setbacks or building line as required by the City Zoning Ordinance and Sub-division Regulations.

Non-Development Activity: Any alteration of the natural environment which does not require development or site plan approval, but which would include the proposed removal or destruction of any tree(s). Any removal of trees that constitutes Development Activity as that term is herein defined shall not constitute Non-Development Activity.

Overstory Tree: Those trees that compose the top layer or canopy of vegetation and will generally reach a mature height of greater than forty feet (40').

Pervious Surface: All that area of land that can be landscaped or planted, allows natural passage through by water, and is not covered by man-made materials or structures such as buildings or paving.

Plantable Area: The pervious surface area (expressed in square footage) available for the preservation or planting of trees on a single-family subdivision lot. Plantable Area shall not include that portion of the lot that is covered by buildings and structures permitted pursuant to the maximum lot coverage standards of the City of Duluth Subdivision Regulations.

Replacement Planting: The planting of trees on a site that before development had more trees, and after development shall have fewer trees per acre.

Screening: A method of shielding or obscuring one abutting or nearby structure or use from another by opaque fencing, walls, berms, densely planted vegetation, or the like.

Shrub: A woody plant of relatively low height, as distinguished from a tree by having several items rather than a single trunk.

Softwood Tree: Any coniferous (cone bearing) tree. This definition is based on the colloquialism, and does not necessarily reflect any true qualities of the tree.

Specimen Tree: Any tree which has been determined by the City's Landscape Architect to be of high value because of its type, size, age and/or of historical significance, or other professional criteria, and has been so designated in administrative standards established by the City. This is usually a plant with desirable form, foliage, fruit, or flower that can be emphasized although isolated. See Appendix C. (amended 5/13/02)

Timber Harvesting: The felling, loading and transportation of timber products (pulpwood etc.). The term 'timber harvesting' may include both clear cutting and selective cutting of timber.

Tree: Any living, self-supporting woody or fibrous plant which normally obtains a Diameter Breast Height of at least three inches (3"), and typically has one (1) main stem or trunk and many branches.

Tree Removal or Removal of Trees: Any act which causes a tree to die within two (2) years after commission of the act, including but not limited to damage inflicted upon the root system or trunk as the result of:

1. The improper use of machinery on the trees;
2. The storage of materials in or around the trees;
3. Soil compaction;

4. Altering the natural grade to expose the roots or to cover the tree's root system with more than four inches (4") of soil.
5. Causing the infection or infestation of the tree by pests, fungus or harmful bacteria.
6. Pruning judged to be excessive by the Director or not in accordance with the standard set forth by the International Society of Arboriculture (ISA).
7. Paving with concrete, asphalt or other impervious surface within such proximity as to be harmful to the tree or its root system; and
8. Application of herbicides or defoliant to any tree without first obtaining a permit.

Tree Density Unit (TDU): A credit assigned to a tree, based on the diameter of the tree, in accordance with tables contained in this Ordinance.

Tree Density Standard (TDS): The minimum number of Tree Density Units per acre which must be achieved on a property after development.

Tree Diameter: The widest cross-sectional dimension of a tree trunk measured at diameter breast height (DBH) or at a point below dbh for new trees or multi-trunked species, but in no case less than 6 inches (6") from the ground.

Tree Planting List: The recommended species of trees listed in Appendix A.

Tree Protection Area (TPA): Any portion of a site wherein are located existing trees which are proposed to be preserved in order to comply with the requirements of this Ordinance. The Tree Protection Area shall include no less than the total area beneath the tree canopy as defined by the drip line of the tree or group of trees collectively.

Tree Preservation/Replacement Plan (TP/RP): A plan that identifies Tree Protection Areas where existing trees are to be preserved and where proposed replacement trees are to be planted on a property to meet minimum requirements, as well as methods of tree protection to be undertaken on the site and other pertinent information.

Tree Save Area: An area designated for the purpose of meeting tree density requirements, saving natural trees, and/or preserving natural buffers.

Tree Thinning: Selective cutting or thinning of trees only for the clear purpose of good forestry management in order to protect said forest from disease or infestation and in no way shall be constructed as clear cutting.

Understory: Those trees that grown beneath the overstory, and will generally reach a mature height of less than forty feet (40').

Zoning Buffer: A buffer required by the Zoning Ordinance or as a condition of zoning, special use or variance approval for a specific property.

Zoning Ordinance: The adopted Zoning Ordinance of the City of Duluth, Georgia, as amended from time to time by the Duluth City Council or any such Ordinance not expressly superseding this Ordinance. (amended 3-22-99)

ARTICLE 3

BUFFER REGULATIONS

3.1 APPLICABILITY

3.1.1 Buffer shall be required between uncomplimentary or uses in accordance with the provisions of the Zoning Ordinance or as a condition of zoning, special use or variance approval.

3.1.2 On properties where tree harvesting is proposed, all buffers as required in Article 16 of the Duluth Zoning Ordinance shall remain intact and undisturbed. Any tree classified as a specimen tree as defined in this Ordinance shall not be removed from the property where tree harvesting is occurring without written approval of the Planning Director. The requirements of Section 14-94-5 of the Code of the City of Duluth, Georgia shall remain in effect, but not limited to, notification and plan requirements. (added 12/9/02)

3.2 STANDARDS FOR PERMANENT BUFFERS

3.2.1 Width of Buffers

Buffers shall meet the minimum width requirements contained in the Zoning Ordinance, except as authorized to be reduced by the applicable buffer reduction process, as follows:

- a. As specified in the 'Minimum Buffer Strip Requirement Table'; or
- b. As specified in a residential zoning district for a permitted non-residential use (e.g. a church, temple, synagogue, etc.); or
- c. As required by a condition of zoning, special use, or variance approval.

3.2.2 Screening Requirements

- a. Buffers shall be natural, undisturbed, and free of encroachments except as authorized by a condition of zoning, special use or variance approval, or as authorized herein, and shall contain the existing tree cover and vegetation as well as any supplemental plantings or replantings as may be required.
- b. Buffers shall be of such nature and density so as to screen activities, structures and use on the property from view from the normal level of a first story window on an abutting lot and shall further provide a year-round effective visual screening.
- c. Buffers required along side property lines shall extend to a street right-of-way line unless otherwise required by the Director in order

to observe the sight distance requirements contained in the Development Regulations, or as authorized by a condition of zoning, special use or variance approval.

- d. In situations where the required buffer width is partially or completely contained within an existing easement (e.g. power or natural transmission, etc.), the screening requirements of this Ordinance shall be met outside of the easement area.

3.2.3 Supplemental Plantings

- a. Buffers in which vegetation is non-existent or is inadequate to meet the screening requirements of this Ordinance shall be planted with supplemental plantings so as to provide a year-round effective visual screen.
- b. Supplemental plantings and replantings shall consist of evergreen trees, shrubs, or combination thereof, native or adaptable to the region. All trees planted shall be a minimum of 6 feet in height at time of planting and shall be a species which will achieve a height of at least 20 feet at maturity. All shrubs planted shall be a large growing species, shall be a minimum of 3 feet in height at time of planting and shall be a species which will achieve a height of at least 10 feet at maturity.
- c. All supplemental plantings shall be installed to allow for proper plant growth and maintenance.

3.2.4 Non-Vegetative Screening

- a. Non-vegetative materials utilized to satisfy the screening requirements of this Ordinance, in addition to the use of existing vegetation and/or supplemental plantings, may consist of walls, fences, earthen berms or any combination thereof.
- b. If walls or fences are to be utilized, their placement and installation shall be such so as to cause minimal disturbance of existing vegetation and located so as to provide an effective visual screen.

3.2.5 Disturbance or Encroachments

- a. Ditches, swales, stormwater conveyance facilities, stormwater detention ponds, sanitary sewer conveyance facilities, similar facilities, and any associated easements, shall not encroach into a buffer except that necessary access and utility crossings (e.g.

stormwater or sanitary sewer pipes) may encroach into the buffer as near to perpendicular as practical.

- b. Supplemental plantings or replantings of vegetation, or authorized non-vegetative screening devices shall be authorized to encroach into a buffer provided there is minimal disturbance of any significant existing vegetation.
- c. Land disturbance is authorized in areas of a buffer that are devoid of significant vegetation provided that the final grade and replantings of vegetation meet the screening requirements contained herein.
- d. Dying, diseased or dead vegetation may be removed from a buffer provided minimal disturbance occurs. Vegetation thus removed shall be replaced where necessary to meet the screening requirements contained herein.

3.2.6 Protection during Land Disturbing Activities

- a. During authorized land disturbing activities, buffers shall be clearly demarcated and protected prior to commencement of, and during, construction.
- b. The method of demarcation and protection utilized shall be in accordance with best management practices or as required by the Department.

3.3 STANDARDS FOR CONSTRUCTION BUFFERS

3.3.1 Where Required

Construction buffers shall only be required where specifically provided as a condition of zoning, special use or variance approval.

3.3.2 Time Constraints

Construction buffers shall only be in effect during the construction period of a project and shall terminate upon project completion. In the case of a residential subdivision, a construction buffer shall terminate upon each individual lot with the issuance of a Certificate of Occupancy for the principal dwelling.

3.3.3 Disturbance or Encroachments

- a. Construction buffers shall be natural, undisturbed and free of encroachments except as authorized by a condition of zoning, special use or variance approval, or as authorized herein.
- b. The encroachment of ditches, swales, stormwater conveyance facilities, stormwater detention ponds, sediment basins, sanitary sewer conveyance facilities, similar facilities, and any associated easements, into a construction buffer shall not be authorized except that necessary access and utility crossings (e.g. stormwater or sanitary sewer pipes), and natural bottom detention ponds (sediment basins must be located outside of the construction buffer) and their appurtenant structures which require no grading and removal of trees, may encroach upon the construction buffer.
- c. If the construction buffer on a residential lot is devoid of existing trees and vegetation, and a tree survey is submitted to document this situation prior to conducting land disturbing activities (including clearing) on the lot, then the Department may authorize the encroachment of a building or structure into the construction buffer for a distance not to exceed 10 feet.

3.3.4 Protection during Land Disturbing Activities

- a. During authorized land disturbing activities, construction buffers shall be clearly demarcated and protected prior to commencement of, and during, construction.
- b. The method of demarcation and protection utilized shall be in accordance with best management practices or as required by the Department.

ARTICLE 4

LANDSCAPE REGULATIONS

4.1 APPLICABILITY

4.1.1 Non-Residential and Multi-Family Uses

Non-residential and multi-family uses shall provide for landscape plantings on-site as follows: (amended 7/14/03)

- a. In a Landscape Strip at least 10 feet in which adjacent to any street right-of-way abutting the property and running the length of the entire property frontage; and
- b. As required by a condition of zoning, special use or variance approval.

4.1.2 Residential Subdivisions

Residential subdivisions shall provide for landscape plantings on-site as follows:

- a. In no-access easements that are required to be provided by the Development Regulations along the line of double frontage lots abutting upon a major thoroughfare; and
- b. As required by a condition of zoning, special use or variance approval.

4.2 LANDSCAPE STRIP PLANTING REQUIREMENTS

4.2.1 Ten (10) Foot Wide Landscape Strips

Landscape Strips which are required to be 10 feet in which shall contain landscaping and plantings within said strip as follows:

- a. One (1) tree for each 25 linear feet of strip length shall be provided. Each tree shall be at least 6 feet in height at time of planting and shall be a species native or suitable to this region.

- b. One (1) shrub for each 25 linear feet of strip length shall be provided. Each shrub shall be a species native or suitable to this region.
- c. Trees and shrubs required herein may be planted and spaced singly or in groups as authorized by the Director as long as the total number of plantings is achieved.
- d. The remaining ground area shall be sodden, seeded or hydro seeded with grass, and/or planted with groundcover species and/or provided with other landscaping material, or any combination thereof.

4.2.2 Five (5) Foot Wide Landscape Strips

Landscape Strips which are required to be 5 feet in width shall contain landscaping and plantings within said strip as follows:

- a. One (1) tree for each 50 linear feet of strip length shall be provided. Each tree shall be at least 6 feet in height at time of planting and shall be a species native or suitable to this region.
- b. One (1) shrub for each 50 linear feet of strip length shall be provided. Each shrub shall be a species native or suitable to this region.
- c. Trees and shrubs required herein may be planted and spaced singly or in groups as authorized by the Director as long as the total number of plantings is achieved.
- d. The remaining ground area shall be sodden, seeded or hydro seeded with grass, and/or planted with groundcover species and/or provided with other landscaping material, or any combination thereof.

4.2.3 Encroachment into Landscape Strips

Required Landscaped Strips shall not be encroached upon by parking spaces, driveway surfaces or stormwater detention facilities except that driveway crossings may traverse such strip as near to a perpendicular alignment as practical.

4.3.1 Quantity, Spacing and Planting Standards (amended 10/24/05)

- d. The minimum planting area or space for each parking lot tree shall be 100 square feet.

4.4 NO-ACCESS EASEMENT SCREENING REQUIREMENTS

4.4.1 No-access easements which are required to be provided and recorded by the Development Regulations, or as a condition of zoning, special use or variance approval, shall be screened as follows:

- a. Planted with a single line of evergreen trees or shrubs; or,
- b. Contain a solid or decorative fence; or,
- c. Contain such other landscaping treatments or grade changes which will produce a partial screening effect as authorized by the Director.

ARTICLE 5

TREE PRESERVATION AND TREE REPLACEMENT REGULATIONS

(amended 6-22-98)

5.1 PURPOSE AND INTENT

The City deems it necessary and desirable in the interest of public health, safety and welfare to enact an ordinance for the preservation, planting and replacement of trees and to prevent the indiscriminate removal of trees in the City without denying the reasonable use and enjoyment of real property. The importance of trees is recognized for their shade, cooling, noise and wind reduction, soil erosion prevention, oxygen production, dust filtration, carbon dioxide absorption, aesthetic and economic enhancement of all real property, and their contribution to the general well being and quality of life of the citizens of Duluth. Consistent with the expressed purpose of this ordinance, all persons shall make reasonable efforts to preserve and retain certain existing, self-supporting trees as defined herein. It is also the intent of this ordinance that all applicable sites within the City maintain or obtain a minimum tree density, as defined and explained herein.

5.2 EXEMPTIONS

- (1) The following shall be exempt from the provisions of this Ordinance:
 - a. The removal of trees from a developed residentially zoned, single-family lot.
 - b. The necessary removal of trees by a utility company within dedicated utility easements provided alternative methods to trenching are used when possible including boring and tunneling (see example # 1).
 - c. The removal of trees on public right-of-ways conducted by, on behalf of, or any activity pursuant to work to be dedicated to, a federal, state, county, municipal or other governmental agency in pursuance of its lawful activities or functions in the construction or improvement of public right-of-way.
 - d. The removal of trees from golf courses, lakes, and detention ponds and drainage easements.
 - e. The removal of any tree which has become or threatened to become a danger to human life or property or the removal of a diseased or infested tree to prevent the transmission of

disease or infestation. The owner/developer, prior to removal of the diseased tree(s), shall notify the Director prior to tree removal or submit a written finding by the County Extension Service or Georgia Forestry Commission recommending removal. In the case of immediate danger to life and property the tree may be taken down and an inspection requested to verify the condition of the tree.

- (2). Notwithstanding the foregoing, all reasonable efforts shall be made to save Specimen Trees.

5.3 APPROVAL LETTER REQUIRED FOR NON-DEVELOPMENT Activity which does not require a building permit, etc.)

- a. Except for routine or seasonal pruning or transplanting of trees, and except as exempted in Section 5.2, no person shall engage in any Non-Development Activity as defined in Section 2.1 without first obtaining an approval letter if the activity reduces the minimum tree density required in Section 5.6. The request for an approval letter shall be submitted to the Director and shall be, unless waived by the Director, in the form of a brief written narrative stating the reason for proposed work and either a site sketch or photograph of the tree(s) proposed to be removed, identifying such tree(s) by size and species. The Director, consistent with the purpose herein and not later than twelve (12) working days from the receipt of a complete request, shall inform the applicant whether such proposed tree removal has been approved and whether replanting will be required. If application is incomplete or denied, the Director shall notify applicant in writing regarding the specific reason for denial.
- b. The Director shall generally issue an approval letter for the following provided a plan for replanting to meet the minimum tree density is submitted:
 1. The removal of dead, substantially injured, damaged or diseased tree(s).
 2. The removal of trees within ten feet (10') to either side, front or rear of an existing authorized structure.

5.4 TREE REMOVAL PERMIT REQUIRED FOR DEVELOPMENT ACTIVITY

No person shall engage in any Development Activity and no development permit shall be issued without first obtaining a tree removal permit from the Director.

No person shall “clear cut” any parcels or combination greater than two acres without specific plan approval during zoning or first obtaining a Conditional Use Permit. Clear cutting of parcels less than 2 acres shall not be allowed unless approved by the Director, Department of Planning & Development with clear evidence of necessity for development of the parcel.

5.5 APPLICATION REQUIREMENTS

- a. When a person applies for a development permit as defined in Section 2.1, such person shall also file an application for a tree removal permit and provide the following information:
 1. A complete tree survey and inventory, as described in Section 5.8.
 2. An integrated site plan showing Specimen Trees, the trees to be saved and those to be removed, utilities to be installed, grading, the approximate location of all structures, driveways and curb cuts and proposed tree plantings and other landscaping.
 3. A detailed plan to protect and preserve trees before, during and for a period of two years (2) after construction, which plan shall contain the following information:
 - A. All items found on the Erosion and Sedimentation Control Submittal checklist pertinent to normal plan review.
 - B. Site area (roads, utility lines, detention ponds, etc.)
 - C. The locations of existing and proposed structures, paving, driveways, cut and fill area, detention areas, etc.
 - D. Phase lines or limits of construction.
 - E. A delineation of all protected zones with any required dimensions.
 - F. Calculations showing compliance with the required Site Density Factor using existing trees, replacement trees, and/or contributions to the City of Duluth Tree Replacement Fund or Tree Bank (See Density Factor Analysis, Appendix B)
 - G. Location of all existing and proposed utility lines or easements.
 - H. Locations of any boring sites for underground utilities.
 - I. Locations of all Specimen Trees and indications whether they are to be removed or preserved.
 - J. Locations of all tree protection devices, materials to be used in each location and details.

- K. A delineation of a Tree Save Area in which trees have been inventoried for density calculations.
- L. If applicable, locations and details of all permanent tree protection measures (tree wells, aeration system, permeable paving, retaining walls, bollards, etc.; and
- M. Additional information as required on a case-by-case basis.

(The above items may be integrated into the normal application requirements and submittals.)

- b. Minor additions to existing development require only a sketch showing changes to be submitted to the Director for review and approval.

5.6 MINIMUM TREE DENSITY REQUIREMENTS

- a. All sites within the City other than single-family residential lots shall maintain a minimum tree density of twenty (20) units per acre. The term “unit” is an expression of basal area as defined herein, and is not synonymous with “tree”. The density requirements must be met whether or not a site had trees prior to development. The density may be achieved by counting existing trees to be preserved, planting new trees in accordance with the minimum standards of this Ordinance, or some combination of the two. Minimum tree density shall be calculated and established pursuant to the formula and analysis set forth in Appendix B to this Ordinance. The developer shall be subject to the minimum tree density requirement set forth in this Paragraph, but the developer shall base its density calculations on the net site area excluding the infrastructure improvements (roads, utility lines, detention ponds, etc.). In no event shall a parking lot be considered an infrastructure improvement.

A required buffer shall not be counted towards tree density. Tree Save Areas may be counted in overall density for up to a 50% credit on individual lot requirements for residential lots. (amended 10-26-98)

- b. All single-family residential lots being developed as a sub-division in the City shall maintain a minimum tree density based upon the maximum number of trees that can be maintained within twenty percent (20%) of the lot’s Plantable Area, taking into consideration the standards established in this Ordinance for tree size and

separation. The density requirement must be met whether or not the individual lot had trees prior to development. (See Appendix D)

- c. Replanting lots shall be at the ratio of not less than one (1) overstory tree (minimum two-inch (2") caliper) for every three (3) understory trees (minimum one-inch (1") caliper).
- d. Notwithstanding the foregoing, it is required that all reasonable efforts be made to save Specimen Trees. (Reasonable efforts shall include, but not be limited to, alternate building design, building location, parking area layout, parking area location, water retention location and the like.)
- e. Tree Save Areas are encouraged and will be given credit of up to 50% individual lot requirements when the number of trees in the tree save areas is equal to or greater than the total number of trees required on the total number of lots within the subdivision. When a 50% reduction on required trees is taken, the balance of the trees shall be planted in the front yard of the individual residential lots. (amended 10-26-98)
- f. Specimen trees and stands of trees must be replaced by species with potentials for comparable size and quality. Tree replacement in addition to the minimum site tree density may be required in recompense for the removal of specimen trees. Refer to Appendix "C". Species selection is subject to the approval of the Planning Director after consulting with the City's Landscape Architect. (added 5/13/02)

5.7 ALTERNATIVE COMPLIANCE METHODS

The intent of this Ordinance is to insure that a minimum density of trees is maintained on all developed sites. Occasionally, this intent can not be met because a project site will not bear the required density of trees. To provide some alternatives in such cases, two (2) alternative methods of compliance may, at the discretion of the Director, be approved: for planting at a location remote from the project site; or contributing to the City of Duluth Tree Replacement Fund (Tree Bank).

The following standards have been established for administering these alternative compliance methods. The Director or his designee must review and approve all requests for alternative compliance. In no instance shall one hundred percent (100%) of the required site density be met through alternative compliance. As many trees as can reasonably be expected to survive must be planted on the site in question.

No permit shall be issued until the Director has approved the request and received the necessary documentation and/or funds. If trees are to be planted at another location, the off-site location should be as close as reasonably possible in the City as the project site and a Tree Replacement Plan meeting all applicable standards must be reviewed and approved.

If a replacement fee to the City of Duluth Tree Replacement Fund is approved, the amount of the donation shall be established by the Director or his designee. The amount of the donation shall be based upon the number, size and type of trees that cannot be planted at the site. The Director shall estimate the cost to the City for the materials, labor and three-year maintenance requirements associated with the trees. The amount of the donation shall be one hundred percent (100%) of the estimated costs of the average of two (2) bids from reputable Landscape Contractors for the materials and planting trees on public property.

5.8 TREE SURVEY PLAN AND INVENTORY

- a. The tree survey as required in Section 5.6 shall be in the form of a to-scale map or a site plan prepared and sealed by a registered surveyor or certified engineer, arborist or landscape architect, noting the location of all trees (as described in Paragraph (b) below) within the area to be modified from its natural state and twenty-five feet (25') beyond in each direction or to the property line, whichever is less. (see example #2) (amended 10-26-98)
- b. All Specimen Trees and all trees that are to be counted toward meeting density requirements must be shown on the survey and inventoried by size (caliper or DBH, whichever is applicable) and species.

Sampling methods may be used to determine tree densities for forested (over five (5) acres). Specimen Trees must be shown on the plan with an indication whether they are to be retained or removed. All Tree Protection zones (see example #3) and Tree Save Areas must be delineated on the plan. All Buffers with existing trees must be delineated on plans as Tree Save Areas. Land disturbance within any Buffer is subject to Department of Planning and Development approval.

5.9 TREE SURVEY INSPECTION

Following the receipt of the completed tree removal application and supporting data, the Director or his designee shall schedule and conduct an inspection of the proposed development site. The applicant or his

designee shall be advised as to the date and time of the inspection and given an opportunity to participate. Following inspections, the Director, consistent with the purposes of this Ordinance, shall advise the applicant of any recommended changes in the applicant's proposed tree removal, protection or replanting plans.

5.10 TREE REMOVAL PERMIT

- a. The Director shall review all applications and supporting data and take one of the following actions: approve, approve with conditions or disapprove.
- b. The issuance of a tree removal permit does not authorize any Development Activity until such time as appropriate development plan approval is granted and a permit issued.
- c. Tree removal and replacement shall begin no later than one hundred eighty (180) days after issuance of the permit and shall be completed no later than two (2) years after the issuance of the permit. The Director may refuse to issue any permit for tree removal until the submission of all development plans and receipt of other evidence satisfactory to the Director that there is a reasonable certainty that the Development Activity is imminent. One (1) renewal of a permit at no additional fee shall be granted if a reasonable request is made.
- d. No Certificate of Occupancy shall be issued until all requirements of the tree planting have been satisfactorily completed.

5.11 TREE PROTECTION

- a. The cleaning of equipment, storage of materials or dirt, disposal of waste material such as paint, oil solvent or other harmful substances, or any other such act which may be harmful to the continued vitality of the tree(s) within the Tree Protection Area, is prohibited.
- b. Prior to commencement of any grading, construction or tree removal, a Tree Protection Area for any tree located within twenty-five feet (25') of any proposed grading, construction or tree removal must be established by physical barrier and maintained until such work is completed.

5.12 TREE PRESERVATION STANDARDS

Prior to any tree removal or commencement of construction on a site, the following system shall be used:

- a. Location and Types of Tree Protection Devices;
 1. Tree protection devices are to be installed as shown on the plan or otherwise completely surrounding the critical root zone of all the trees to be preserved (see definitions Section 2.1 and example #4).
 2. The plan shall indicate whether the tree protection device is to be active or passive.
 3. Active protection (see Material section below) is required where Tree Save Areas are located in proximity to construction activity.
 4. Passive protection (see Material section below) may be used in more remote locations and in all protected zones not designated as Tree Save Areas.
 5. The locations and installation of all tree protection devices will be verified prior to the issuance of the construction permit for clearing and/or grading. All Tree Protection Devices must be maintained intact throughout construction.
 6. Once Protected Zones are established and approved, any changes are subject to the Department of Planning & Development review.
- b. Materials
 1. Active tree protection shall consist of chain link, orange laminated plastic, wooden post, and rail fencing or other equivalent restraining material. In addition to fencing, where tree trunks are in jeopardy of being damaged by equipment, the Director shall require two inch (2") by four inch (4") boards to be strapped around the trunks of trees. In addition, where active tree protection is required, each tree to be saved shall be marked at the base of the trunk with blue colored water-based paint.
 2. Passive protection shall consist of heavy mil. plastic flagging, a minimum of four inches (4") wide with dark letters on a bright background reading "Tree Protection Area – Do Not Enter" or equivalent signage on a continuous, durable restraint.

c. Sequence of Installation and Removal

All tree protection devices shall be installed prior to any clearing, grubbing or grading. The Department of Planning and Development must inspect the installation of tree protection, erosion and sedimentation control devices prior to the issuance of the Tree Removal Permit. Tree protection must remain in functioning condition until the Certificate of Occupancy is issued.

5.13 TREE DAMAGE

Any tree designated in the plan to be saved that is damaged during construction or as a result of such construction, shall be treated according to accepted National Arborists Association Standards, or replaced with a tree(s) equal to the unit value of the tree removed. However, any Specimen Tree damaged as described above shall be replaced with a tree(s) two (2) times the unit value of the tree removed.

5.14 TREE PLANTING STANDARDS

- a. Unless otherwise approved by the Director, trees selected for replanting to comply with minimum requirements must be on the Tree Planting List. Trees selected for planting must be free from injury, pests, disease, nutritional disorders or root defects, and must be of good vigor in order to assure to reasonable expectation of survivability. Standards for transplanting shall be in keeping with those established in the International Society for Arboriculture publication *Trees and Shrubs Transplanting Manual* or similar publication. Reference the American Association of Nurserymen publication *American Standard for Nursery Stock* (ANSI Z60, 1973) for plant material quality specifications. Reference the *Manual of Woody Landscape Plants* (Michael Dirr, 1983, Castle Books) or similar publication for information on tree species site requirements.
- b. It is desirable that replanted trees be ecologically compatible with the site and neighboring sites. Accordingly, the replanted trees shall be of the same or similar species as those removed when practical.
- c. All replanted overstory trees shall be at least six feet (6') tall and have a trunk of not less than two caliper inches. All replanted understory trees shall be at least four feet (4') provide sufficient growing area for planted trees, the following minimum criteria growing area for planted trees, the following minimum criteria must be observed unless otherwise approved by the Director. All non-

parking lot trees require the following area:

Overstory trees – 200 sq. feet of pervious root zone (amended 10/24/05)

Understory trees – 100 sq. feet of pervious root zone(amended 10/24/05)

(However, the Director may grant a variance up to 30% of the root zone for impervious area)

- d. To ensure variety in design, no more than 25% of replacement trees shall be of a single species, and no more than 25% of replacement trees shall be an evergreen species. (amended

10/24/05)

5.15 TREE REMOVAL COMPLIANCE INSPECTION

- a. Following the issuance of a tree removal permit for the development site, the Director or assignee shall from time to time inspect the site for the purpose of certifying compliance with the requirements of the tree removal permit. In the event of non-compliance, the Director or assignee may revoke or modify the tree removal permit, and may withhold or revoke or modify the tree removal permit pertaining to the development. No certificate of occupancy shall be issued until actual compliance is obtained.
- b. If any required tree removal conditions have not been met within the time specified in the tree removal permit, and provided the Director has not granted a written extension, the City may use the cash or bond proceeds to insure that these conditions are met. Provided the Director required such a bond to be posted for compliance assurance.
- c. After development is complete, the Director or assignee shall continue to make random inspections to insure that required trees are maintained. Replacement shall be required or bond/letter of credit posted within thirty (30) days of notice by the Director should any of these trees die, be removed or be destroyed within two (2) years after completion of development.
- d. Notwithstanding any other provision of this Ordinance to the contrary a home builder's responsibility to replace a newly planted tree or trees shall terminate upon the issuance of a certificate of occupancy provided that an inspection conducted immediately prior to the issuance of the certificate of occupancy confirms that the replanted tree or trees are planted properly as established in the ISA (International Society of Arboriculture) standards, and are healthy and free of pests and disease. Nothing in this Ordinance

shall be deemed to eliminate any other obligation the home builder may have pursuant to any private agreement between the home builder and home owner, or any agreement between the home builder and home owner, or any restrictive covenants that are applicable to the property.

- e. It is the responsibility of the property owner to properly maintain trees, shrubbery, etc. that could interfere with or cause obstructions on the public right-of-way or other public property. If deemed a public hazard, the City may elect to have the obstruction removed. (see examples #5 and #6).

5.16 APPROVAL LETTER FEE: PERMIT FEE

The fee for review of a request for an approval letter and the fee for review of an application for a tree removal permit (which only applies to Development Activity) shall be as stated in the City Fee Ordinance. These fees may be revised from time to time by resolution of the City Council, or delegated to the Director to be administratively established and revised from time to time.

5.17 TREE PRESERVATION

Every property owner or occupant shall be responsible for the normal care of trees located on such property. Every property owner or occupant with the exception of single family zoned properties shall be subject to the following restrictions:

- a. Willful injury or disfigurement or any tree growing within the City shall be a violation of this Ordinance (see example #7).
- b. No person shall:
 - 1. Attach any sign, notice or other object to any tree or fasten any wires, cables, nails or screws to any tree in a manner that could prove harmful to the tree, except as necessary in conjunction with activities in the public interest.
 - 2. Pour any material on any tree or on nearby ground which could be harmful to the tree.
 - 3. Cause or encourage any unnecessary fire or burning near or around any tree.
 - 4. Construct a concrete, asphalt, brick or gravel sidewalk, significantly compact the soil, place fill material, or so as to cut off air, light, or water from the roots of the tree so as to adversely impact the tree's root system.

5. Pile building material or equipment around any tree so as to cause injury thereto.
6. Improperly shear, prune, top, or round over or otherwise disfigure any tree located on public property or use said trees on public property in calculations in meeting minimum density and buffer requirements.

ARTICLE 6

PLAN AND PLAT SPECIFICATION

6.1 WATER-EFFICIENT DESIGN CONSIDERATION

It is the policy of the City of Duluth to encourage individuals or firms who prepare the plans and plats required by this Ordinance to consider the use of water-efficient landscaping principles and techniques as one of the criterion to be used in plant selection and design.

6.1.1 Principles and Techniques of Water-Efficient Landscaping

The recommended principles and techniques to be considered are as follows:

- a. Proper Location and Design - locating plants where they will naturally thrive and not require excessive water and maintenance to survive, as well as grouping plants by water needs, and limiting and concentrating high water using plants.
- b. Turf Selection - selecting turf grasses that can survive the variable rainfall conditions in this region, and limiting turf areas.
- c. Efficient Watering - once plants are established, avoid watering during periods of normal rainfall and during droughts, watering every week to 10 days or less depending on the drought tolerance of the plants.
- d. Soil Improvements - loosening and breaking up the soil beyond the immediate planting area to allow better water absorption and to promote deep roots.
- e. Mulching - using mulch to hold moisture in the soil which helps maximize the benefits of watering as well as preventing weeds.
- f. Plant Selection - selecting plants according to their watering requirements and optimum locations.
- g. Maintenance - maintaining the landscape to maximize water conservations such as increasing mowing heights and avoiding fertilizing during dry spells.

6.2 BUFFER AND LANDSCAPE PLAN SPECIFICATIONS

The following subsections and paragraphs outline the required elements of the plans and plats mentioned throughout this Ordinance.

- 6.2.1 A Buffer and Landscape Plan shall be prepared for any project wherein buffer areas or other landscaping areas or treatment are required by this Ordinance, the Zoning Ordinance, conditions of zoning, special use or variance approval, or other regulations of the City of Duluth, and shall be approved prior to issuance of a Development Permit. While the Plan shall cover, at a minimum, the required buffer and landscape areas, the Plan can be combined with a general landscaping plan for the entire project and/or Tree Preservation/Replacement Plan (if required), at the developer's option.
- 6.2.2 The Buffer and Landscape Plan shall be shown on a Site Plan or boundary survey drawn to the same or a larger scale as the other plan documents prepared for the Development Permit Application and shall cover the same area.
- 6.2.3 The Buffer and Landscape Plan shall contain but need not be limited to the following;
- a. Project name and Land District, Land Lot, and acreage.
 - b. Developer's name and telephone number.
 - c. The name, address and telephone number of the Registered Landscape Architect, Urban Forester, or Arborist responsible for preparation of the plan, and the Seal or statement of professional qualifications of said person (which may be attached separately). The performance of professional services in the preparation of plans required herein shall comply with Georgia Law governing the practice of the applicable profession.
 - d. Boundary lines of each buffer or other landscape area, appropriately labeled.
 - e. Delineation of undisturbed buffer areas, and any other areas wherein trees are proposed to be retained to meet City requirements, along the drip lines of the trees or groups of trees contained therein. These areas shall be treated in accordance with the Tree Protection Area requirements contained in this Ordinance, and labeled as such. Protective barriers and signage as required by this Ordinance shall be shown as to location and detailed.
 - f. General location of all proposed trees, shrubs, vines, groundcovers, mulching, and other features proposed within the buffer/landscape area. A scale sufficient to clearly indicate all details shall be used, along with a north arrow.

- g. Within areas involving or adjacent to land form changes, existing and finish grade topographic lines at an interval of no more than 2 feet may be required.
- h. For new plant materials to be installed, a plant material list including but not limited to:
 - (1) Common and botanical names of all proposed plants.
 - (2) Plant quantities.
 - (3) Size and condition of plants. (Example: 1" caliper, 6 feet height, balled and burlapped).
 - (4) Spacing.
 - (5) Remarks as necessary to insure proper plant selection upon installation. (Example: Specimen, multi-trunked).

6.3 TREE PRESERVATION/REPLACEMENT PLAN SPECIFICATIONS

- 6.3.1 Tree Preservation/Replacement Plans shall be prepared by a professional Landscape Architect, Urban Forester, or Arborist in accordance with the specifications for such plans contained herein. The performance of professional services in the preparation of plans required herein shall comply with Georgia Law governing the practice of the applicable profession. Other licensed professionals (e.g. architects, engineers, etc.) may be authorized by the Director to prepare Tree Preservations Plans, but not Tree Replacement Plans, provided that they demonstrate, to the satisfaction of the Director, competency and knowledge in the principals and practices of arboriculture.
- 6.3.2 The Tree Preservation/Replacement Plan shall be shown on a copy of a Preliminary Plat, Concept Plan or Site Plan, with the exception of a permit to conduct tree thinning, as appropriate to the proposed development, drawn to the same scale as the other plan documents prepared for a Land Disturbance Permit application on the property, and shall cover the same area. The plan may be combined with a required Buffer and Landscape Plan for the project, at the option of the developer.
- 6.3.3 The Tree Preservation/Replacement Plan shall provide sufficient information and detail to clearly demonstrate that all applicable requirements and standards of this Ordinance will be fully satisfied.

6.3.4 The Tree Preservation/Replacement Plan shall contain but need not be limited to:

- a. Project name, Land District, Land Lot, north arrow and scale.
- b. Developer's name, address and telephone number.
- c. The name, address, and telephone number of the professional Landscape Architect, Urban Forester, Arborist or other authorized individual responsible for preparation of the plan, in accordance with the requirements of Subsection 6.3.1, above, and the Seal or statement of professional qualifications of said person (which may be attached separately).
- d. Delineation of all minimum yard areas, buffers, and landscape areas as required by the Zoning Ordinance or conditions of zoning, special use or variance approval.
- e. Total acreage of the site and total acreage exclusive of all zoning buffer areas.
- f. Delineation of all areas located within a 100-year flood plain.
- g. Existing Trees to be retained in Tree Protection Areas:

Trunk location and size (to the nearest inch in diameter at or below diameter breast height), of individual trees proposed to remain for credit toward meeting the minimum tree density standard on the property. Groups of 3 or more trees whose drip lines combine into a single Tree Protection Area may be outlined as a group and their number, by diameter, shown in the Summary Table. If the number and size of all existing trees to remain on the site exceeds the required tree density standard for the entire site, only those trees required to meet the minimum tree density standard must be shown. All Tree Protection Areas are to be outlined and labeled.

- h. Tree Protection Measures:
 - (1) A detail or description of the protective tree fencing, staking, or continuous ribbon to be installed, and the location of such measures, which at a minimum shall follow the drip line of all trees to be retained along adjoining areas of clearing, grading, or other construction activity.
 - (2) Measures to be taken to avoid soil sedimentation intrusion into Tree Protection Areas, and the location of such devices.

(3) Proposed location of temporary construction activities such as equipment or worker parking, materials storage, burn holes, equipment wash down areas, and entrance pads.

(4) Proposed type and location of any tree save area signs or other pertinent signage.

i. If replacement trees are proposed to be planted in order for the property to achieve the required Tree Density Standard, the replacement trees shall be shown and their spacing and diameter identified, to the extent needed to achieve the minimum requirements. Trees grouped together in tree planting areas may be listed on the Summary Table by total number in the grouping, by size.

j. A Summary Table of the number of existing trees to remain and new trees to be planted, by diameter to the nearest inch at or below dbh, shall be shown along with calculations showing the tree density achieved for the site. Additional credits shall be noted where applicable (see Subsection 5.3.2, paragraph c.). Groupings of tree in Tree Protection Areas and areas for new tree planting may be keyed to the Summary Table by area rather than having each tree individually labeled on the plan.

6.3.5 The plan sheet which shows the grading plan, including existing and proposed contour lines, shall indicate the drip line location of all Tree Protection Areas through the use of shading on the plans. The exact location of each tree is not desired to be shown, only the limits of the Tree Protection Area and any other areas which are not to be disturbed.

ARTICLE 7

COMPLIANCE

7.1 ARTIFICIAL MATERIALS PROHIBITED

7.1.1 All artificial plants, trees, shrubs, grass or other vegetation shall be prohibited from fulfilling the requirements of this Ordinance.

7.2 WARRANTY OR MAINTENANCE SURETY

7.2.1 Upon final installation of new trees, shrubs or other landscape material planted to meet the requirements of this Ordinance, and following acceptance by the Department in accordance with the procedures set forth in the Development Regulations, the owner shall either provide proof of warranty or post a Maintenance Bond or other acceptable surety, warranting the new trees, shrubs or landscape material for a period of no less than one (1) year.

7.3 INSPECTION

7.3.1 The Department shall perform an inspection of the plantings and landscape materials required by this Ordinance prior to expiration of the one (1) year warranty or maintenance period. The owner shall be notified of any replacements or restoration that must be made to maintain compliance with this Ordinance or conditions of zoning, special use or variance approval.

7.3.2 Required landscape material found to be dead or near death shall be replaced prior to release by the Department of the warranty of maintenance surety. In no case shall replacement be delayed greater than 30 days from notification unless a performance bond is posted with the Department.

7.4 PERFORMANCE SURETY

7.4.1 Compliance Prior to Certificate of Occupancy or Final Plat Approval

In the event that new trees proposed to be planted to achieve the Tree Density Standard as set forth in the Tree Regulations contained herein, or other trees or landscape material required to be planted as set forth in the Buffer Regulations or Landscape Regulations contained herein, are not installed upon application for a Certificate of Occupancy or Final Plat approval as appropriate to the project, then a Performance Bond or other acceptable surety in an amount equal to 110% of the value of new trees or landscape material and their installation shall be posted with the

Department in accordance with the performance bonding requirements and provisions of the Development Regulations.

7.4.2 Compliance upon Permit Completion or Expiration

Properties where a permit is issued to conduct land disturbing activities that do not require the issuance of a Certificate of Occupancy or the approval of a Final Plat, or said activities as authorized are completed or the permit expires, shall comply with the Tree Density Standard of this Ordinance as follows:

a. Clearing, Clearing and Grubbing, or Grading only Permits

Replacement trees proposed to be planted to achieve the Tree Density Standard of this Ordinance which is not planted upon completion or prior to expiration of a Clearing, Clearing and Grubbing, or Grading Permit, shall be planted within 30 days of the completion or expiration of said permit unless a Performance Bond is posted with the Department.

b. Development Permits

Replacement trees proposed to be planted to achieve the Tree Density Standard of this Ordinance which is not planted upon completion or prior to expiration of a Clearing, Clearing and Grubbing, or Grading Permit, shall be planted within 30 days of the completion or expiration of said permit unless a Performance Bond is posted with the Department.

7.5 CONTINUING MAINTENANCE

7.5.1 The owner, occupant, tenant, and respective agent of each, if any, shall be jointly and severally responsible for the perpetual maintenance and protection of buffers and landscape plantings required by this Ordinance.

7.5.2 The Department is hereby authorized to order diseased, infested, dying, dead or damaged landscaping required herein to be replaced.

7.5.3 Buffers that, over a period of time, lose their screening ability shall be replanted to meet the requirements of this Ordinance.

7.5.4 Replacement trees and landscaping shall be in accordance with the applicable provisions of this Ordinance.

ARTICLE 8

ENFORCEMENT, VIOLATION AND PENALTIES

8.1 ENFORCEMENT

It shall be the responsibility of the Department to enforce this Ordinance. The Director or his/her designee shall have the authority to revoke, suspend, or void any Clearing, Clearing and Grubbing, Grading, Development or Building Permit or to withhold issuance of a Certificate of Occupancy, and shall have the authority to suspend all work on a site or any portion thereof, where tree removal or damage occurs in violation of this Ordinance or the provisions of the approved Tree Preservation/Replacement Plan for the site.

8.2 VIOLATION AND PENALTY

Any person violating provision of this Ordinance shall be guilty of violating duly adopted Ordinance of the City of Duluth, and upon conviction by a court of competent jurisdiction, may be punished either by a fine not to exceed \$1,000 (amended 10-24-94), or confinement in the City jail not to exceed 60 days, or both. Each day of non-compliance shall constitute a separate offense. The Court shall have the power and authority to place any person found guilty of a violation of this Ordinance on probation and to suspend or modify any fine or sentence. As a condition of said suspension, the Court may require payment of restitution or impose other punishment allowed by law which may include mandatory attendance at an educational program regarding tree preservation. The owner of any property wherein a violation exists, and any builder, contractor, or agent, who may have assisted in the commission of any such violation, shall be guilty of a separate offense.

8.3 APPEALS AND WAIVERS

8.3.1 Variance from the Zoning Ordinance

The preservation of trees may be considered as a condition peculiar to a piece of property in support of a request for a Variance from the literal application of the provision of the Zoning Ordinance, under the procedures and requirements contained therein.

8.3.2 Appeals

Appeals of the interpretation of the requirements of this Ordinance by the Director shall be filed and processed in accordance with the appeal procedures as set forth in the Development Regulations.

8.3.3 Waivers

Waiver requests of the requirements of this Ordinance shall be filed and processed in accordance with the waiver procedures as set forth in the Development Regulations.

ARTICLE 9

ADOPTION AND AMENDMENT

9.1 REPEAL CLAUSE

The provisions of any ordinances or resolutions or parts of ordinances or resolutions in conflict herewith are repealed. (amended 10-24-94)

9.2 SEVERABILITY

Should any section, subsection, clause, or provision of this Ordinance be declared by a court of competent jurisdiction to be invalid, such decision shall not affect the validity of the Ordinance in whole or any part thereof other than the part so declared to be invalid.

9.3 AMENDMENT

This Ordinance may be amended from time to time by resolution of the City Council of the City of Duluth. Such amendments shall be effective as specified in the adopting resolution.

9.4 EFFECTIVE DATE

This Ordinance shall become effective upon its adoption.

Adopted this 26th day of April, 1993.

Bobby G. Williams, Mayor

Jason K. Moore, Councilmember

Maxine S. Garner, Councilmember

Victor F. Gerber, Councilmember

Suzanne F. Britt, Councilmember

Roderick C. King, Councilmember

ATTEST:

Teresa S. Lynn, City Clerk

TABLE A SUMMARY OF APPLICABILITY AND EXEMPTIONS		
Project Type	Type of Construction	Applicability
1 and 2 Family Dwellings	Building Permit	Exempt (5.1.1)
Grandfathered Projects	Any property included within the limits of a LDP approved prior to the effective date of this Ordinance, and remaining portion of a project where 75% of area has already been included in LDP's approved prior to December 21, 1987, which was the effective date of the Tree Ordinance.	Exempt (5.1.2)
Horticultural or Agricultural Operations	Land clearing for clearly agricultural purposes, including timber harvesting, in RA-200 zoning districts; Plant or Tree Nurseries; Orchards	Exempt (5.1.3)
Diseased or Infected Trees	Removal upon advice and written finding of Gwinnett County Extension Service or Georgia Forestry Commission	Exempt (5.1.4)
Residential and Non-Residential Subdivisions	Land Disturbance limited to areas for streets, drainage and utilities	TP/RP not required* (5.2.3.a)
	Land Disturbance beyond areas needed for streets, drainage and utilities	TP/RP required (5.2.2)
	Building Permit for the construction of 1 and 2 Family Dwellings	Exempt (5.1.1)
	Recreation Area	TP/RP required (5.2.3.a)
Multi-Family and Non-Residential Sites	Clearing or clearing and grubbing only, limited to areas outside of all minimum yards, buffers and 100-year floodplain	TP/RP not required **, (5.2.3.b)
	Clearing or clearing and grubbing only, proposing disturbance within a minimum yard or 100-year floodplain	TP/RP required (5.2.2)
	Grading or Development Permit	TP/RP required (5.2.2)
	Building Permit	Covered by TP/RP as approved by LDP (5.2.2)

* LIMITS OF LAND DISTURBANCE TO BE DESIGNATED WITH PROTECTIVE TREE FENCING, STAKING, OR CONTINUOUS RIBBON PRIOR TO COMMENCEMENT OF ACTIVITIES, CONSISTENT WITH EXEMPTION ALLOWANCES.

** ADDITIONAL AREAS MAY BE DESIGNATED BY P&D TO REMAIN UNDISTURBED BASED ON LAND USE PLAN.

TABLE B- CREDIT FOR EXISTING TREES Conversion from Tree Diameter in Inches to Tree Density Units for Trees Remaining On Site							
Diameter	Units	Diameter	Units	Diameter	Units	Diameter	Units
3	.05	15	1.2	27	4.0	39	8.3
4	.1	16	1.4	28	4.3	40	8.7
5	.15	17	1.6	29	4.6	41	9.2
6	.2	18	1.8	30	4.9	42	9.6
7	.3	19	2.0	31	5.2	43	10.1
8	.4	20	2.2	32	5.6	44	10.6
9	.5	21	2.4	33	5.9	45	11.0
10	.6	22	2.6	34	6.3	46	11.5
11	.7	23	2.9	35	6.7	47	12.0
12	.8	24	3.1	36	7.1	48	12.6
13	.9	25	3.4	37	7.5	49	13.1
14	1.1	26	3.7	38	7.9	50	13.6

NOTE: FOR THE PURPOSE OF THIS ORDINANCE, TREE DIAMETERS ARE MEASURED AT DIAMETER BREAST HEIGHT (DBH) OR AT ANY POINT BELOW DH FOR NEW TREES OR MULTI-TRUNKED SPECIES, BUT IN NO CASE LESS THAN SIX INCHES FROM THE GROUND.

NOTE: FOR THE PURPOSE OF THIS ORDINANCE, TREE DIAMETER FRACTIONS MAY BE ROUNDED UP IF 0.5 INCHES OR GREATER OR ROUNDED DOWN IF LESS THAN 0.5 INCHES.

TABLE C – CREDIT FOR REPLACEMENT TREES			
Conversion from Tree Diameter in Inches to Tree Density Units for Proposed Replacement Trees			
Diameter	Units	Diameter	Units
1	.4	8	1.3
2	.5	9	1.5
3	.6	10	1.7
4	.7	11	1.9
5	.9	12	2.1
6	1.0	13	2.3
7	1.2	14	2.5

NOTE: FOR THE PURPOSE OF THIS ORDINANCE, TREE DIAMETERS ARE MEASURED AT DIAMETER BREAST HEIGHT (DBH) OR AT ANY POINT BELOW DBH FOR NEW TREES OR MULTI-TRUNKED SPECIES, BUT IN NO CASE LESS THAN SIX INCHES FROM THE GROUND.

NOTE: FOR THE PURPOSE OF THIS ORDINANCE, TREE DIAMETER FRACTIONS MAY BE ROUNDED UP IF 0.5 INCHES OR GREATER OR ROUNDED DOWN IF LESS THAN 0.5 INCHES.

NOTE: MULTI-TRUNKED ORNAMENTAL TREES SHALL BE GIVEN CREDIT BY MEASURING THE SINGLE LARGEST TRUNK ONLY. TREE-FORM SHRUBS SHALL NOT BE GIVEN CREDIT.

Crape Myrtle	Lagerstroemia indica	M	15-45'	S						X		X	Must be maintained in tree form; best var. "Natchez".
Dogwood, Flowering	Cornus florida	M-F	20-25'	S			X	X	X	X			Needs partial shade; good soils preferred.
Dogwood, Kousa	Cornus kousa	S-M	15-30'	S			X	X		X	X		More beauty than Flowering Dogwood.
Hawthorne	Crateagus vnicidis "Winter King"	S-M	20-35'	G			X	X					Attractive fruit.
Hawthorne, Washington	Crateagus phaenopyrum	S-M	25-30'						X	X	X		Attractive fruit.
Magnolia, Saucer	Magnolia soulangeana	M	20-30'	G					X	X	X		
Pear, Aristocrat	Pyrus calleryana "Aristocrat"	F	30-40'	G									Very tolerant; best limb structure.
Pear, Capital	Pyrus calleryana "Capital"	F		C			X						Very tolerant; most columnar.
Pear, Redspice	Pyrus calleryana "Redspice"	F		NP			X						Very tolerant; more narrow than "Bradford".
Plum, Purpleleaf	Prunus cerasifera "Pissardii"	M-F	15-30'				X						Remains purple; produces fruit.
Redbud, Eastern	Cercis canadensis	M	20-30'	S			X			X	X	X	Does well in full sun.
NON-FLOWERING													
Cherry-Laurel, Carolina	Prunus caroliniana	M	20-30'	G	X	X							Good soils preferred.
Holly, Foster #2	Ilex x attenuata "Foster"	M-F	15-25'	C	X	X							Multiple uses.
Holly, Savannah	Ilex x attenuata "Savannah"	F	20-30'	NP	X								Multiple uses.
Hornbeam, American	Carpinus caroliniana	S		S			X	X	X				Pest free; tolerates city conditions.
Hornbeam, European	Osstrya virginiana	S	40-60'	C		X		X	X				Pest free; tolerates city conditions.
Maple, Hedge	Acer campestre	S	15-35'	G			X						
Maple, Japanese	Acer palmatum	S	15-25'	S			X	X					
Myrtle, wax	Myrica cerifera	S-M	10-15'	S	X	X				X			
Species not listed here can be submitted to the Director for approval.													
NOTES AND LEGEND:													
1. Where cultivars or varieties are listed, only that type should be used for tree ordinance compliance.													
2. Growth rate:													
			S = Slow										
			F = Fast										
			M = Medium										
3. Shape:													
			BP = Broadly Pyramidal										
			C = Columnar										
			G = Globular										
			NP = Narrowly Pyramidal										
			S = Spreading										
			V - Vase-Shaped										

- Other species may be used in advance by Urban Forestry staff.
- The following species cannot be used because they perform poorly:
 - Bradford Pear (Pyrus Caleryana "Bradford")
 - Eastern White Pine (Pinus Strobus)
 - Siberian Elm (Ulmus Pumita)
 - Silver Maple (Acer Saccharinum)
- The following species are not recommended because they are marginal performers:
 - Catalpa (Catalpa Speciosa)
 - Honeylocust (Gleditsia Traicanthos)
 - Norway Maple (Acer Platanoides)
 - Pine Oak (Quercus Palustris)
 - Princess Tree (Paulownia Tomentosa)
 - Scarlet Oak (Quercus Coccinea)
 - Tree-of-Heaven (Aitanthus Altisima)
- The following species shall be used for Parking Lots except species as approved by the Planning Director: (amended 10/24/05)
 - Crape Myrtle (S)
 - Lacebark Elm (M)
 - Winged Elm (L)
 - European Hornbeam (M)
 - Red Maple (M)

- Trident Maple (S)
 - Shumard Oak (L)
 - Willow Oak (L)
 - London Planetree (L)
 - a) Make sure the tree can withstand the hot, dry climates and poor soils conditions of most parking lots.
 - b) Maintain sight lines so motorists can see pedestrians and other vehicles through proper tree selection and regular pruning.
5. The following species shall be used for Road Frontage Areas except species as approved by the Planning Director: amended 10/24/05
- All of the Parking Lot trees
 - Flowering Dogwood (S)
 - Ginko (M)
 - Sugar Maple (L)
 - Eastern Redbud (S)
 - a) Make sure there is adequate room both overhead and underground for the mature size of the tree being planted.
 - b) Vary the spacing of trees along the rights-of-way to add interest and diversity.
 - c) Consider the impact of overhead utilities, and other utility maintenance when placing trees.
6. The following species shall be used for Buffers except species as approved by the Planning Director: (amended 10/24/05)
- All of the evergreen trees provided on the approved species list.
 - Bald Cypress (M)
 - River Birch (M)
 - Crape Myrtle (S)
 - Flowering Dogwood (S)
 - Dawn Redwood (L)
 - a) When choosing buffer trees, select low branching or multi-trunk species that will provide a visual and physical buffering to the ground.
 - b) If year round dense screening is the desired effect, choose trees with dense evergreen foliage.
 - c) Plant trees in a staggered pattern instead of a single row.

S = small 15-25'

M = medium 25-40'

L = large >40'

APPENDIX B (amended 7/14/03)

(Page 1 of 3)

A basic requirement of the Tree Preservation and Replacement Ordinance is that all applicable sites maintain a minimum tree density of 20 units per acre. The term "unit" is an expression of basal area (a standard forest inventory measurement), and is not synonymous with "tree".

This density requirement must be met with or not the site had trees prior to development. The density may be achieved by counting existing trees to be preserved, planting new trees, or some combination of the two as represented by the formula.

SDF – EDF – RDF

SDF (Site Density Factor): The minimum tree density requirement to be maintained on a developed site (units per acre).

EDF (Existing Density Factor): Density of existing trees to be preserved on a site.

RDF (Replacement Density Factor): Density of new trees to be planted on a site.

The SDF is calculated by multiplying the number of site acres by:

Example: A 2.2 acre site has a SDF of $2.2 \times 20 = 44$

The EDF is calculated by converting the diameter of individual trees to density factor units. This is done by using Table A below.

Example: A total of 15 trees will remain on the 2.2 acre site. The tree inventory is as follows:

7-12" diameter pines

3-14" diameter pines

3-18" diameter oaks

1-21" diameter hickory

1-30" diameter oak

APPENDIX B

(Page 2 of 2)

Converting diameters (DBH) to density units, the EDF is determined as follows:

DBH	UNITS		NO. OF TREES		TOTALS
12"	0.6	X	7	=	4.2
14"	1.2	X	3	=	3.6
18"	1.9	X	3	=	5.7
21"	2.8	X	1	=	2.8
30"	5.1	X	1	=	5.1
					21.4

The unit value of any individual tree may be determined by using the formula:

$$(\text{Diameter} \times 2) 7854 - 144$$

REPLACEMENT: Calculate the RDF by subtracting the EDF from the SDF

DENSITY FACTOR: Example: $\text{RDF} = 44 - 21.4 = 22.6$

The density factor credit for each caliper size or replacement (new) trees is shown in Table B.

APPENDIX B
(Page 3 of 3)

TABLE B

Conversion of Replacement Tree Caliper to Density Factor Units (planted at ratio of 1 Overstory to 3 Understory trees)

Caliper Size	Density Factor Units
1"	.4
2"	.5
3"	.6
4"	.7
5"	.9
6"	1.0
7"	1.2
8"	1.3
9"	1.5
10"	1.7
11"	1.9
12"	2.1
13"	2.3
14"	2.5
15"	2.8

Container grown pine trees are given density factor credit as follows: Seven (7) Gallons - .4 units. In order to qualify for credit, each such container grown pine tree shall be at least four feet (4') tall, and have a trunk not less than one caliper inch (1").

The use of 1 and 3 gallon pines is permitted only with prior approval.

APPENDIX C

SPECIMEN TREES

Some trees on a site warrant special consideration and encouragement for preservation. These trees are referred to as specimen trees.

The following criteria are used by the Director to identify specimen trees. Both the size and condition must be met for a tree to qualify.

No specimen tree may be removed without prior written approval from the Planning Director. (added 5/13/02)

Size Criteria

Overstory Trees: 24-inch diameter or larger hardwoods such as oaks, hickories, poplars, sweet gums, etc. 30-inch diameter or larger softwoods, such as pines, cedars, etc. (amended 5/13/02)

Understory Trees: 6-inch diameter or larger such as dogwoods, redbuds, etc. (amended 5/13/02)

Condition Criteria

Life expectancy of greater than fifteen (15) years.

Relatively sound and solid trunk with no extensive decay.

No more than one major and several minor dead limbs (hardwoods only).

No major insect or pathological problems.

In order to encourage the preservation of specimen trees and the incorporation of these trees into the design of projects, additional density credit will be given for specimen trees which are successfully saved by a design feature specifically designated for such purpose. Credit for any specimen tree thus saved would be two (2) times the assigned unit value shown in Appendix B.

If a specimen tree must be removed, due to criteria established in this Ordinance, it will be replaced by a species with potential for comparable size and quality. All specimen trees removed must be replaced at a density of two (2.0) times the unit value of the tree removed, i.e., 30-inch diameter specimen trees (4.9 density units) must be replaced with 9.8 units. Species selection is subject to the approval of the Planning Director after consulting with the City's Landscape Architect. (amended 5/13/02)

Any specimen tree, which is removed without the appropriate review and approval of the Planning Director, must be replaced by trees with a minimum caliper size of 5" (5 inches) per tree with a total density equal to three (3) times the unit value of the tree removed or refer to Section 5.7 for alternative compliance methods if the above calculations cannot be met on site. In addition, the City's Zoning Compliance Officer will issue a citation for the removal of a specimen tree without appropriate review and approval of the Planning Director

requiring an appearance in the City's Municipal Court. Size alone will determine whether a tree was of specimen quality if the tree is removed without approval. (amended 5/13/02)

The City's Landscape Architect may identify and require the preservation of a tree stand if it contains one or more specimen trees and the specimen trees are interlocked with other members of the stand in such a manner as to imperil the specimen tree if other members of the stand were to be removed. (added 5/13/02)

APPENDIX D

**EXAMPLES OF SINGLE FAMILY LOT
TREE PLANTING REQUIREMENTS
(amended 10/24/05)**

Lot Size	- Minus Impervious Surface	X Times 20%	= Equals Plantable Area
12,000 SF (R-75)	2,740 SF (9,260 SF) (1500 SF Home 1120 SF drive & turn around <u>120 SF patio</u> 9,260 SF pervious surface	9,260 x 20%	1,852 SF

Tree Computation:

5 Overstory trees x 200 square feet of plantable area = 1,000 plantable area
 12 Understory trees x 100 square feet of plantable area = 1,200 plantable area
 2,200 plantable area

Lot Computation:

18,000 square feet – 3,400 square feet impervious = 14,996 square feet x 20% = 2,999 plantable area

Tree Computation:

7 Overstory trees x 200 square feet of plantable area = 1,400 plantable area
 21 Understory trees x 100 square feet of plantable area = 2,100 plantable area
 3,500 plantable area

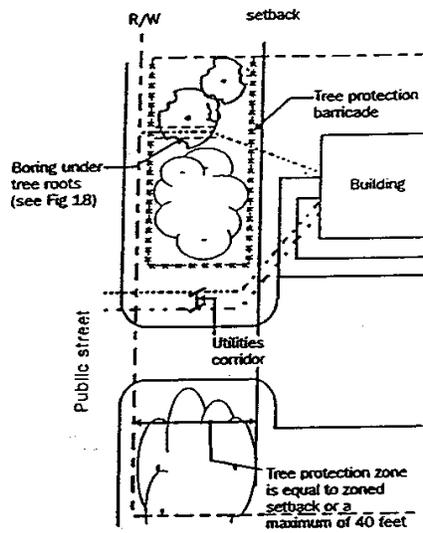
40,000 square feet – 3,900 square feet impervious = 36,100 square feet x 20% = 7,220 plantable area (RA-200)

Tree Computation:

17 Overstory trees x 200 square feet of plantable area = 3,400 plantable area
 51 Understory trees x 100 square feet of plantable area = 5,100 plantable area

8,500 plantable area

UTILITIES LOCATED WITH EXISTING TREES

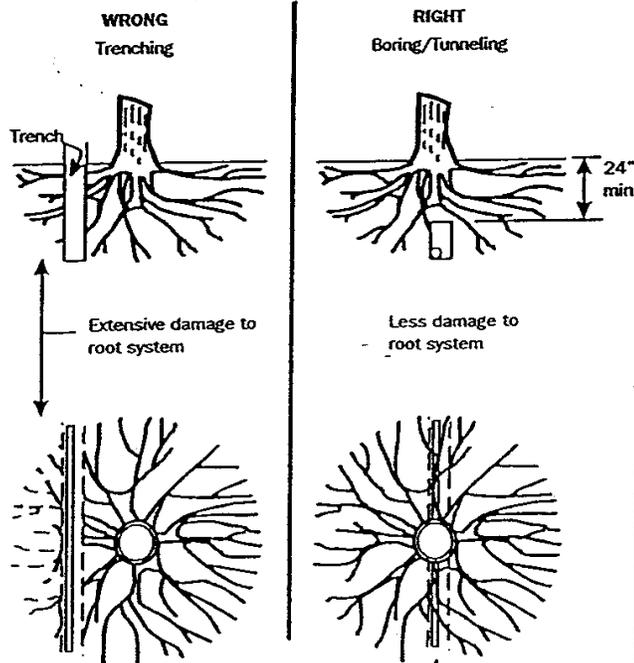


Coordinate utility service line locations with existing and new trees.

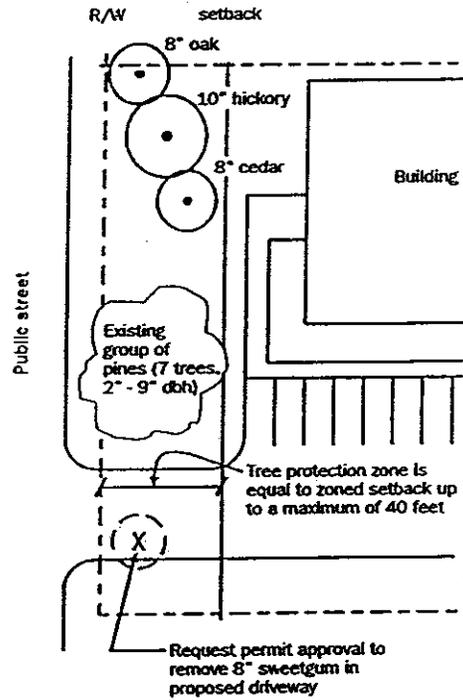
Options:

- Locate service line(s) adjacent to driveway (in utility corridor)
- Locate service line(s) in open area between root zones of existing trees to be preserved
- Bore for service line under tree root zone area

UTILITY LINE THROUGH VS. UNDER ROOTS



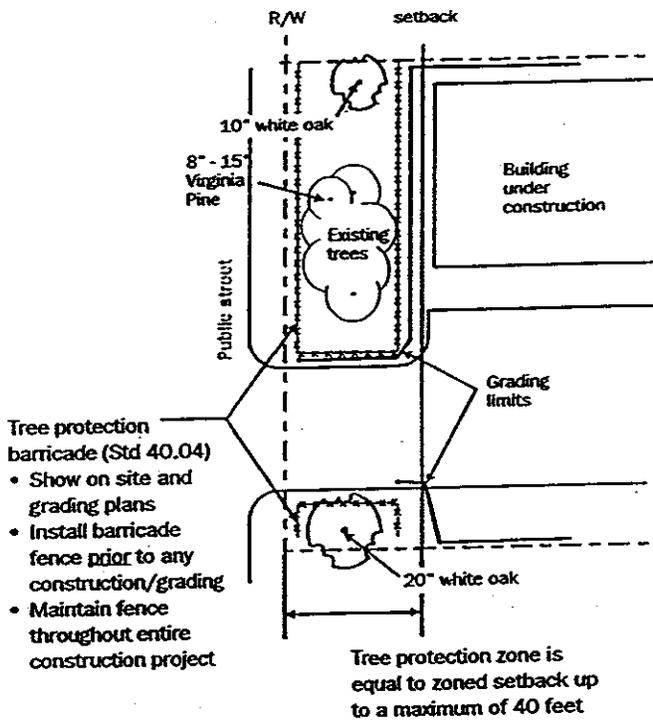
TREE SURVEY EXAMPLE



Provide tree survey information on plan:

- Location - in relation to property line and proposed development
- Size (8" dbh +)
- Species

TREE PROTECTION PLAN EXAMPLE

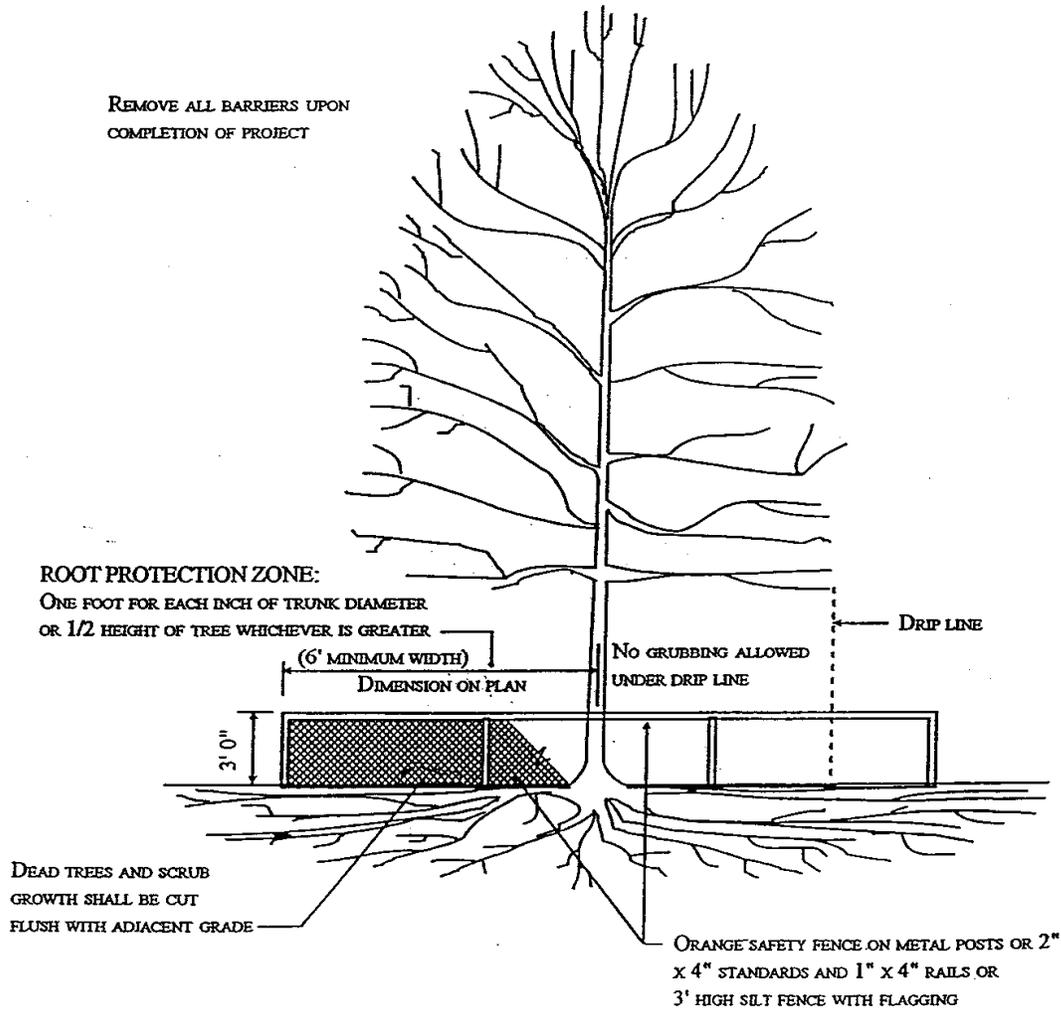


- Tree protection barricade (Std 40.04)
- Show on site and grading plans
 - Install barricade fence prior to any construction/grading
 - Maintain fence throughout entire construction project

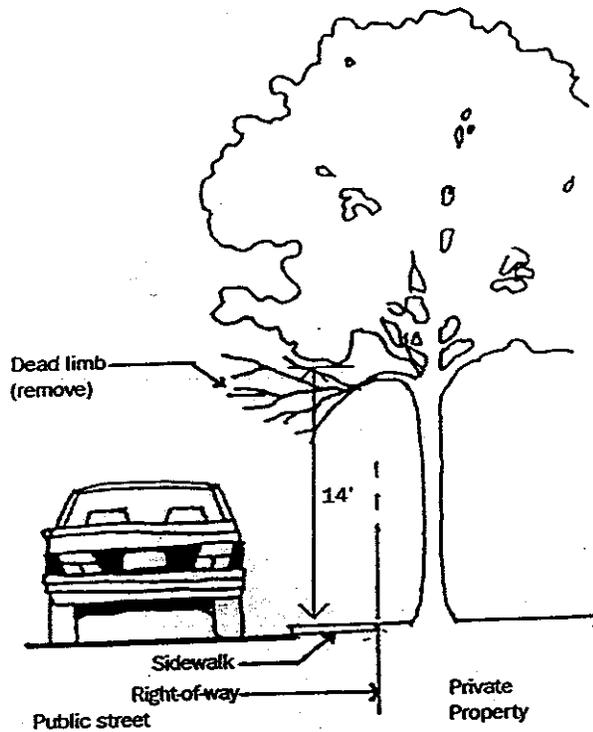
See notes in Appendix 9 to be added to plan.

TREE PROTECTION DETAIL

REMOVE ALL BARRIERS UPON COMPLETION OF PROJECT

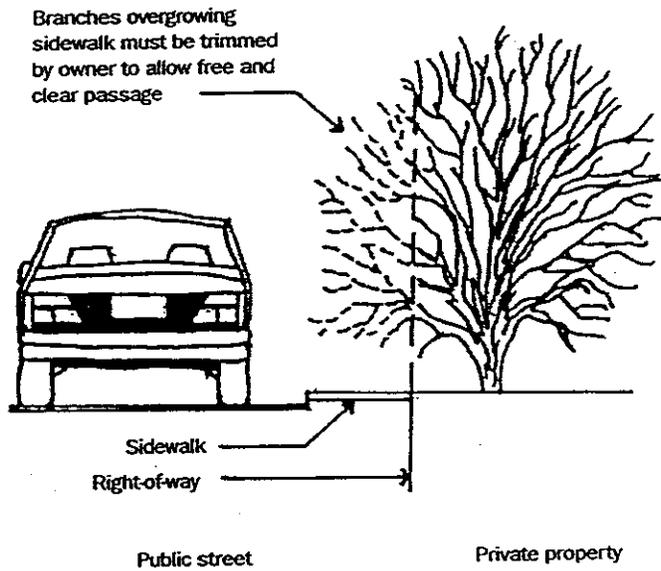


DEAD LIMB OVERHANGING STREET



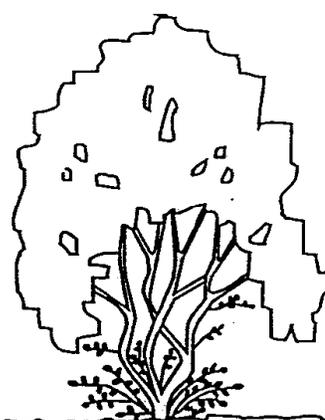
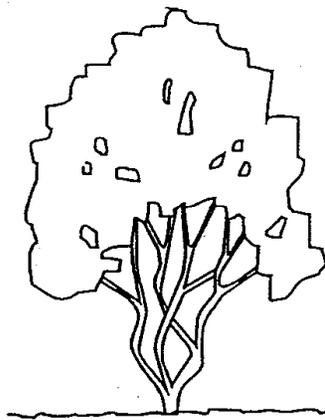
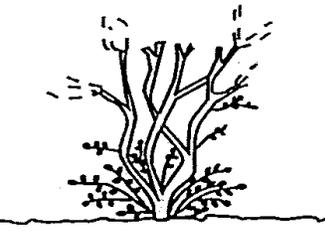
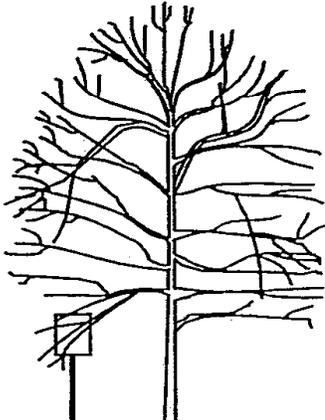
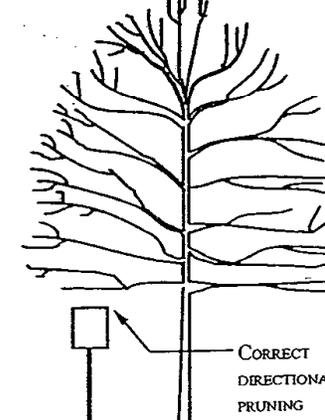
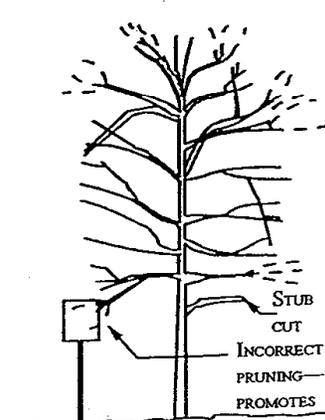
Trees or shrubs on private property that create a hazardous condition or cause damage to public improvements may be pruned, treated, or removed as deemed necessary by the City Arborist. Costs will be passed on to the owner if the condition is not remedied upon the City Arborist's request. American Disabilities Act (ADA) requires 6'8" clearance next to pedestrian walkways and the City requires 14' clearance over roads. Corrective pruning standards are found in Appendix 11.

BRANCHES OBSTRUCTING SIDEWALK



The owner of planting on private property is responsible for pruning to allow free and clear passage along the public way. American Disabilities Act (ADA) requires clearance height of 6'8" along pedestrian walkways.

BASIC PRUNING STANDARDS

BEFORE PRUNING	AFTER PRUNING	
	RIGHT	WRONG
		
<p>MULTI-STEM TREE (OVERGROWN)</p>	<p>PRUNE TO MAINTAIN TREE FORM 3 TO 5 STEMS MAXIMUM</p>	<p>DO NOT ROUND OVER (PROMOTES SPROUTS)</p>
	 <p style="text-align: right;">CORRECT DIRECTIONAL PRUNING</p>	 <p style="text-align: right;">STUB CUT INCORRECT PRUNING— PROMOTES SPROUTS</p>
<p>SINGLE STEM TREE WITH DENSE CROWN, DEAD LIMBS OR LOW BRANCHES</p>	<p>PRUNE BACK TO TRUNK OR TO NEXT LARGEST LIMB (SEE NEXT PAGE)</p>	<p>DO NOT TOP OR STUB CUT</p>