ARTICLE XII - TREE AND LANDSCAPING REQUIREMENTS

Section 1201: Purpose

It is the purpose of this article to promote a healthy, natural environment whenever possible by conserving existing vegetation and providing environmentally sound landscape amenities and buffers that promote a positive community image. The purpose is also to provide standards for the conservation of trees as part of the land development process, to protect trees during construction whenever possible, and ensure replacement of trees that must be removed during development. Considering the dependence of the public on the automobile, parking lots are necessary for all commercial establishments. Large areas of continuous pavement are not visually appealing and result in problems related to storm water run-off and heat production.

Providing trees and other landscaping provides many benefits including:

1. Conserves the aesthetic qualities of the area.
2. Improves property values.
3. Provides a more pleasing and comfortable environment for customers.
4. Reduces noise and glare.
5. Decreases water, soil, and air pollutants
6. Moderates storm water run-off and decreases stream and river silting.
7. Improves the overall quality of life for residents.

Section 1202: Applicability

This ordinance will apply to all activity requiring a land disturbance permit including new local government projects, commercial development, commercial redevelopment, multi-family dwellings and residential subdivisions. Any redevelopment or renovation of a building over 3,000 square feet or change in use that will require an increase in parking by 25% will require adherence to the provisions of this ordinance. Normal maintenance is excluded.

Section 1203: Definitions

The following definitions are specific to this Article and are in addition to those definitions found in Article II. For words found in both Articles, the definition in this Article shall govern herein if the definition is in conflict with the one in Article II.

1. Buffer:
   a. An area along some natural feature designated to protect and/or preserve the essential character of such feature and allow it to be maintained in an undisturbed and natural condition.
   b. A natural undisturbed portion of a lot, except for approved access and

utility crossings, which is set aside to achieve a visual barrier between the use on the lot and adjacent lots and/or uses.

2. *Clear Cutting*: A forestry management technique employed to prepare a site for replanting trees. Clear cutting is a non-land disturbing activity not associated with development activity and does not including grading or stump removal.
3. *Clearing / grading / grubbing / scraping*: A land disturbing activity involving the removal of trees, shrubs, or undergrowth from real property for non-agricultural development purpose.
4. *Critical Root Zone*: The minimum area beneath a tree that must be left undisturbed in order to preserve a sufficient root mass to give a tree a reasonable chance of survival. The critical root zone is approximately 1.3 feet of radial distance for every inch of a tree's DBH, with a minimum of eight feet.
5. *Cut:*
   a. A portion of land surface or area from which soil, earth, rock or other materials has been removed or will be removed by excavation.
   b. The height below original ground surface after the material has been or will be removed.
6. *Deciduous*: A plant with foliage that is shed annually.
7. *Diameter Breast Height (DBH)*: The standard measure of tree size for those trees existing on a site that are at least four (4) inch caliper at a height of four and one-half (4.5) feet above the ground. If a tree splits into multiple trunks below four and one-half (4.5) feet, then the trunk is measured at its most narrow point beneath the split.
8. *Drip Line*: A vertical line extending from the outer surface of a tree's branch tips to the ground. The drip line generally bears little relationship to the extent of a tree's critical root zone.
9. *Evergreen*: A plant with foliage that persists and remains green year-round.
10. *Existing Density Factor (EDF)*: The tree density units awarded for the preservation of existing trees that will remain on site to be protected during construction.
11. *Grade, existing*: The vertical location of the existing ground surface prior to cutting or filling.
12. *Grade, finished*: The final grade or elevation of the ground surface after cutting or filling and conforming to a proposed and approved design.
13. *Ground Cover*: Living material planted in such a way as to form a sixty (60) percent or more ground cover at the time of planting and a continuous cover over the ground that can be maintained at a height of not more than eighteen (18) inches.
14. *Hedge*: An evenly spaced planting of shrubs that forms a compact, dense, visually opaque living barrier. Hedges inhibit passage or obscure views.

15. *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 allowed.
16. *Landscaping*: Any combination of living plants, such as trees, shrubs, vines, ground covers, flowers, or grass, and which may include natural features such as rock, stone, bark chips or shavings, and structure features, including but not limited to fountains, pools, outdoor artwork, screen walls, fences, or benches.
17. *Landscape Plan*: A graphic and written document containing criteria, specifications and detailed plans to arrange and modify the effects of natural features. A landscape plan consists of a site plan showing the boundaries of the property and the location of proposed plant materials, in relation to surroundings and improvements, along with a planting schedule and any additional specifications required by the city arborist.
18. *Natural Area*: An area containing natural vegetation that will remain undisturbed when the property is fully developed.
19. *Replacement Density Factor (RDF)*: The minimum number of tree density units which must be achieved on a property after calculating tree density units for existing trees (EDF) which will remain on site to be protected during construction.
20. *Revegetation*: The replacement of trees and landscape plant materials.
21. *Screen:* A method of reducing the impact of noise and unsightly visual intrusions with plants, berms, fences, walls, or any appropriate combination thereof, to provide a less offensive or more harmonious environment in relation to abutting properties.
22. *Shrub*: A woody plant, smaller than a tree, consisting of several small stems from the ground or small branches near the ground, and generally obtaining a height less than eight (8) feet; a shrub may be deciduous or evergreen.
23. *Site Density Factor (SDF)*: The minimum number of tree density units per acre that must be achieved on a property after development.
24. *Specimen Tree*: Any tree that qualifies for special consideration for preservation as determined by the Zoning Administrator due to its size, species or historic relevance.
    a. Size Criteria:
        i. Large Hardwoods (oak, poplar, sweetgum, etc.): 24 inch diameter or greater.
        ii. Large softwoods (pine, cedar, etc.): 30 inch diameter or greater.
        iii. Small trees (dogwood, redbud, sourwood, etc.): 8 inch diameter or larger.
    b. Condition Criteria:
        i. Life expectancy of more than 15 years.
        ii. Relatively sound and solid trunk with no extensive decay

iii. No more than one major and several minor dead limbs (hardwoods).
iv. No major insect or pathological problems.

25. *Stripping*: Any activity that removes the vegetative surface cover including tree removal, grubbing and storage or removal of topsoil.
26. *Timber:* Harvestable trees.
27. *Topping:* Severely cutting back tree limbs to stubs larger than three inches in diameter within the tree's crown to such a degree so as to remove the normal canopy and disfigure the tree.
28. *Tree:* Any self-supporting, woody perennial plant usually having a single trunk diameter of three (3) inches or more that normally attains a mature height of a minimum of fifteen (15) feet.
    a. Overstory: Trees that compose the top layer of canopy of vegetation and will generally reach a mature height of greater than 40 feet.
    b. Understory: Trees that grow beneath the overstory and will generally reach a mature height of less than 40 feet.
29. *Tree Density Unit*: A credit assigned to a tree based on the diameter of the tree, in accordance with table contained in this article.
30. *Tree Protection Area*: The tree protection area shall include no less than the total area beneath the tree canopy as defined by the dripline of the tree plus any additional area encompassing the critical root zone of a tree or group of trees collectively that are proposed to be retained in order to comply with the requirements of this article.
31. *Tree Protection Plan*: A plan that identifies tree protection areas, existing trees to be retained, specimen trees and proposed trees to be planted on a property to meet minimum requirements, as well as methods of tree preservation to be undertaken on the site and other pertinent information.
32. *Tree Removal*: The actual removal of a tree or any act that causes a tree to die within two years after commission of the act, including but not limited to damage inflicted upon the root system, crown or trunk as a result of:
    a. The storage of materials in or around the trees
    b. Soil compaction within the critical root zone
    c. Altering the natural grade to expose the roots or to cover the root system within the critical root zone with more than four inches of soil
    d. Pruning not in accordance with the standards set forth by the International Society of Arboriculture (ISA)
    e. Paving with concrete, asphalt or other impervious surface within such proximity as to be harmful to the tree or its root system within the critical root zone
    f. Application of herbicides or defoliates within the critical root zone
33. *Tree Save Area*: An area designated for the purpose of meeting tree density requirements, saving natural trees and/or preserving natural buffer.

34. *Tree Thinning*: Selective cutting or thinning of trees for the clear purpose of good forestry management in order to protect said forest from disease or infestation and in no was shall be construed as clear cutting.
35. *Woodland*: A tract of land or part thereof dominated by trees but usually also containing woody shrubs, grasses, and other vegetation.

Section 1204: Tree Preservation and Replacement

Section 1204.01 Exemptions

1. Plant and tree nurseries.
2. All orchards of trees in active commercial operation shall be exempt for bona fide agricultural purposes only.
3. Clear cutting activities for clearly agricultural purposes in agriculturally zoned areas. The property will not be eligible for a change in zoning for a period of five (5) years after it has been cleared.
4. Timber harvesting. This exemption shall not be interpreted to include tree harvesting incidental to the development of land or tree harvesting on land that is anticipated to be developed for non - horticultural uses. All legitimate timber harvesting shall be required to provide a 50 foot undisturbed buffer along the entire perimeter of the property except that trees with a diameter of at least 16 inches may be harvested from the buffer. Once tree harvesting takes place, no development of the property shall be permitted for a period of five (5) years following the timber harvesting.

Section 1204.02 Planning Considerations

1. The use of tree save islands and stands is encouraged rather than the protection of individual (non-specimen) trees scattered throughout a site. This will facilitate ease in overall organization as related to tree protection.
2. The protective zone of specimen trees or stands of trees or otherwise designated tree save areas shall include no less than the total area beneath the tree(s) canopy as defined by the furthest canopy drip line of the tree(s).
3. Tree preservation and grading requirements are two design constraints, which are most often in conflict. A grade change of a few inches can be detrimental to a tree, yet most sites require extensive cut and fill in order to manage drainage. The use of berms or retaining walls, instead of cutting, to provide detention can be used to preserve significant trees. Detention ponds can be designed around significant trees by adding depth to minimize width where possible. Detention areas can also be designed as green space and to accommodate new trees. Retaining walls can also be used to mitigate cuts and fills. Tree wells and or aeration systems can also be provided for trees in areas of fill, but are generally ineffective and their use should be very limited and employed only with the approval of the city arborist.
4. Underground water and wastewater lines, storm sewers, irrigation lines and both underground and overhead electric and telephone lines can have a

considerable impact on trees. The layout of the project site utility plans should accommodate the required tree protective zones. Utilities should be placed along corridors between tree protective zones. Developers shall coordinate the location of utility lines, including irrigation and electric lighting, with the utility companies in order to prevent root damage within the critical root zones of protected trees and to minimize damage to trees located in protected zones.

5. Construction activities such as parking, material storage, concrete washout, burnhole placement, etc. shall be arranged so as to prevent disturbances within tree protective zones. No disturbance shall occur within the protective zone of specimen trees or stands of trees without prior approval of the city arborist.
6. Sidewalks often appear innocuous on plans, but can be very detrimental to trees due to grading requirements. Considerations should be given to move sidewalks as far from tree trunks as possible and provide a finished grade above the existing grade for sidewalks required in close proximity to a tree trunk. Drainage can be routed under sidewalks where an elevated grade is required.

Section 1204.03 Tree Protection and Replacement Plan

A tree protection and replacement plan shall be submitted and approved prior to issuance of a land disturbance permit. No clearing, grubbing, grading or other removal of the existing vegetation shall be done prior to plan approval. All tree protection measures shall be installed and inspected prior to the start of any land disturbance and maintained until final landscaping is installed. The plan shall include the following:

1. Names and addresses of the owner of record and the applicant.
2. Boundary lines of the tract by lengths and bearings, streets adjoining the property, total area of the tract, graphic scale and date.
3. Location, name and diameter of all existing specimen trees and their critical root zone.
4. The location, botanical names, diameters (dbh), and critical root zones of all trees proposed to be protected. In heavily wooded areas that will not be disturbed, the site plan may show only the boundaries of each stand of trees and a list of the number, size and species of all trees in the stand 10 inches dbh or larger.
5. Calculations showing compliance with the required site density factor using existing trees and/or replacement trees.
6. The location of all trees to be planted on the site to meet density requirements.
7. The location of proposed buildings, structures and paved areas.
8. The locations of all existing and proposed utility lines. Utility lines must be placed along corridors between critical root zones of trees that will remain on the site.

9. Limits of land disturbance, clearing, grading and trenching.
10. Grade changes or other work adjacent to a tree that would affect it adversely, with drawings or descriptions as to how the grade, drainage and aeration will be maintained around the tree.
11. Methods of tree protection shall be indicated for all tree protection zones, including tree fencing, erosion control, retaining walls, tunneling for utilities, aeration systems, transplanting, staking, signage, etc.
12. The plan should indicate staging areas for parking, materials storage, concrete washout and debris burn where these areas might affect tree protection.

Section 1204.04 Tree Protection Methods

No construction activities are to occur within the tree protection areas.

1. Damage prohibited: Within tree preservation zones, no person shall:
    a. Cut, carve, transplant or otherwise damage a tree.
    b. Attach any rope, wire, nails, or posters to any tree.
    c. Allow any substance (such as concrete, fuel, lubricants, herbicides and paint) to come in contact with a tree.
    d. Set a fire or permit any fire to burn when such fire or the heat of the fire will injure any portion of a tree.
2. Active protective barriers: Barriers shall be installed along the outer edge of and completely around the critical root zones of all specimen trees or stands of trees or otherwise designated tree protective zones, prior to any land disturbance. Barriers will be a minimum four (4) feet high, constructed in a post and rail configuration. A two-inch by four-inch post and a one-inch by four-inch rail, with the posts no further than six (6) feet apart is recommended. Chain link fence may also be used. "Tree Save Area" signs shall be posted on all sides of the fenced in area.
3. Passive protective barriers: Tree save areas and their critical root zones not within 60 feet of any grading, storage, construction or traffic areas may be protected by four-foot orange plastic safety fencing or continuous plastic flagging. Tree protective materials shall consist of heavy mil, plastic flagging, a minimum four inches in width with dark letters reading "Tree Protection Area. Do Not Enter" or equivalent signage on a continuous durable restraint.
4. Boring: No open trenching will be allowed within the save areas. All underground utilities to be installed within this protection zone shall be installed by boring underneath the root zone. Utilities may be tunneled in the root zone using soft dig methods such as an air spade, air knife, or vacuum truck at a twenty-four-inch minimum depth providing that the plans are approved showing the location and method. Soil shall be replaced at approximately 70% compaction in these areas.
5. Grade changes: There shall be no raising or lowering of the ground level within the critical root zone. Stripping of topsoil shall not be permitted. Where necessary, moderate fill may be permitted after installation of an

approved aeration system. Deposition of sediment in tree protection areas shall be prevented by placement of sediment barriers.

6. Clearing activities: When trees adjacent to tree protection areas are removed, it is best to cut them down and grind the stump. If this is not possible, the roots should be cut at the edge of the tree protection area. This helps to prevent damage to the roots extending out from tree protection areas that may be entangled with roots from the removed tree.
7. Soil Compaction: All buildings, materials, vehicles, construction equipment, dirt, debris or other objects likely to cause soil compaction shall be kept outside the critical root zone. Where a limited amount of encroachment is unavoidable and is approved, the critical root zone shall first be mulched with a four-inch layer of processed pine bark, shredded hardwood or wood chips or a six-inch layer of pine straw.

Section 1204.06 Site Density Factor

All non-exempted projects must maintain or exceed a minimum site density factor of 15 units per acre. **The site density requirement must be met whether or not a site had trees prior to development**. The term "unit" is not synonymous with "tree". The site density factor (sdf) equals the existing density factor (edf) plus the replacement density factor (rdf).

The existing density factor is calculated using Table 12-1. Existing trees are measured at dbh. Trees less than 10 inches dbh can be counted only if they have grown in uncrowded conditions and developed a normal spread.

The replacement density factor is then calculated by subtracting the existing density factor from the site density factor. The number of replacement trees required is calculated using Table 12-2. Caliber is measured at 6 inches above ground for trees 4 inches in diameter or less and at 12 inches for trees over 4 inches in diameter.

Table 12-1: Existing Density Factor

dbh	Units	dbh	Units	dbh	Units	dbh	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.	42	9.6
7	.3	19	2.0	31	95.2	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

Table 12-2: Replacement Density Factor

Caliper	Units
1	0
2	.5
3	.6
4	.7
5	.9
6	1.0
7	1.2
8	1.3

When trees must be added to achieve the total site density factor (sdf), such additions shall be made between the street and the front of the building until such additions comprise at least half the total site density factor.

Where the proposed development area is so dense that the minimum site density factor cannot reasonably be achieved, the development area shall be reduced by removing parking spaces n excess of the minimum number of spaces required by zoning, placing additional planting islands within the development, or reducing the area to be occupied by buildings.

No tree shall be planted closer to a building foundation or underground water, sewer or electrical or natural gas line than as follows:

a. Mature small tree – 5 feet.
b. Mature medium tree – 10 feet.
c. Mature large tree – 15 feet.

Trees that will grow to a height of more than 15 feet should be planted far enough away from power lines so that there will be a 10 to 15 foot clearance between the crown and the power line when the tree reaches maturity.

Section 1205.06 Specimen Trees

Specimen trees preserved on the site will be given a unit value twice that shown in Table 1. If a specimen tree must be removed, it shall be replaced by a species with potential for comparable size and quality. Replacement trees must be at least 4-inch caliper. Specimen trees removed shall be replaced with trees with a unit density equal to 2 times the unit value of the tree removed. Size and type will determine whether a tree was of specimen quality if the tree is removed without approval and there is not sufficient evidence of its condition.

Section 1205: Landscaping Requirements

Section 1205.01 Landscape Plan

A landscaping plan approved by the city shall be required prior to the issuance of a land disturbance, development, or building permit to demonstrate compliance with the provisions of this Article. The landscape plan shall be based on an accurate boundary survey of the site or reasonable property description and shall include the following:

a. Location and general type of existing vegetation;
b. Existing vegetation to be saved;
c. Methods and details for protecting existing vegetation during construction;
d. Locations and labels for all proposed plants and a plant list or schedule showing the proposed and minimum required quantities;
e. Location and description of other landscape improvements, such as earth berms, walls, fences, screens, sculptures, fountains, street furniture, lights, and courts or paved areas;

Approval of all landscaping and other materials by the city shall be required. The following general guidance is provided. The use of native plants as landscaping materials is encouraged wherever possible. Invasive or potentially invasive plants are not permitted. However, well-mannered non-native plants are acceptable if they are not considered invasive. Existing tree cover and natural vegetation shall be preserved, whenever possible, or replaced with suitable vegetation. Ground cover(s) should be used to supplement landscaping in appropriate areas to reduce the need for extensive grass lawns, which would require regular watering in drought conditions. Grass areas shall be sodded. However, if grass seed must be used, it shall be a variety suitable to the area that produces complete coverage. No artificial plants, trees, or other vegetation shall be installed.

Section 1205.02 Parking Lot Design

Owners are encouraged to incorporate innovative designs such as curved rows, compact car spaces, long planting rows, water retention swales or planting islands and lower lights that will not compete with tree crowns. Strong consideration should be given to landscaping between the building and pavement. In lots with more than 20 spaces, 30% of spaces must be designed with permeable pavement or pavers. Compaction of the soil of planned planting islands shall be prevented during development. If compacting has occurred, the soil must be excavated to a depth of 4 feet and replaced prior to planting. No permanent structures other than lighting and utilities are allowed within landscape strips or islands. Curbs or bumpers are required to prevent overhang of cars into landscaped areas by more than 1 foot.

Section 1205.03 Street Yards

A minimum 10 foot planting strip is required along any street and is measured from the edge of the right of way to the nearest impervious surface. The landscape strip requirement shall not apply to vehicle access areas, pedestrian sidewalks or trails, but shall include any other paved surfaces. This planting strip shall have a continuous canopy cover within 10 years. If a sidewalk is placed within the buffer, the width of the buffer will be increased by the width of the sidewalk.

1. One understory tree per 20 linear feet or one overstory tree per 35 linear feet spaced so that each tree may reach its normal canopy size without interfering with adjacent trees.
2. 10 evergreen shrubs per 35 linear feet. Shrubs should grow to 4 feet in height and be fairly evenly spaced but not necessarily in a straight line. Clustering of shrubs is allowed as long as there is no gap of more than 20 feet.
3. The remainder should be covered with sod, ground cover or mulch.

Section 1205.04 Side Yards

A minimum 5 foot planting strip is required along all property lines not abutting a street right-of-way and is measured from the property line to the nearest impervious surface. The landscape strip requirement shall not apply to vehicle access areas, pedestrian sidewalks or trails, but shall include any other paved surfaces.

1. One overstory tree per 35 linear feet spaced so that each tree may reach its normal canopy size without interfering with adjacent trees.
2. 6 evergreen shrubs per planted tree. Clustering of shrubs is allowed as long as there is no gap of more than 20 feet.
3. The remainder is to be covered with sod, ground cover or mulch.

Existing woodlands or other vegetation may be used to meet the requirements of this section if approved by the city arborist.

Section 1205.05 Interior Landscaping

Interior lot landscaping shall be required for any parking lot with 12 or more spaces. 160 square feet of landscaping is required for each 6 parking spaces. Landscape islands shall be placed at the end of each row of parking spaces. Islands at the end of single rows must be at least 150 square feet and be planted with one overstory tree and at least 6 evergreen shrubs with the remainder covered with ground cover or mulch. Islands at the end of double rows must be at least 300 square feet and be planted with 1 overstory tree and at least 12 evergreen shrubs with the remainder covered with grass, ground cover or mulch.

The remaining required landscaping may be placed in one of the following manners:

1. Islands placed uniformly amongst the parking spaces so that there are no more than 6 spaces between islands. Each island must be at least 160 square feet and contain one overstory tree and 6 evergreen shrubs per 160 square feet with the remainder covered with ground cover or mulch.
2. Long islands may be placed along the middle of a double parking row. These islands must be at least 10 feet wide if cars are allowed to overhang the island or 6 feet wide if cars are prevented from overhanging the island. One overstory tree and 6 evergreen shrubs are to be planted for every 30 – 40 feet in length depending on the type of tree so that each tree may reach its normal canopy size without interfering with adjacent trees. The remainder shall be covered with ground cover or mulch.

Planting islands may be raised and surrounded with curbing or depressed to act as water detainment areas. Depressed areas should be planted with plants and trees tolerant of flooding.

Section 1205.06 Screening and Buffer Specifications

Objectionable views or nuisances, such as service areas, loading docks, refuse containers, air conditioning units, transformers, etc. must be surrounded by screening. All required screening shall consist of shrubs and/or trees but may be supplemented with walls, fences, or earth berms. Screening shall be of such nature and density to screen activities on the lot from view from the normal level of a first story window on an abutting lot and shall provide year-round maximum opacity from the ground to a height of at least six (6) feet. Trees and shrubs shall be installed to not only provide maximum opacity, but to allow for proper plant growth and maintenance.

To achieve maximum opacity within buffers, the following alternatives, or combination thereof, shall be considered by the applicant and applied, subject to the approval of the city arborist:

(a) Six-foot-high evergreen screening shrubs planted four (4) feet on center.
(b) Tall evergreen trees stagger planted with branches touching ground.
(c) Combination of small shrubs planted thirty inches (30") on center, small trees planted thirty (30) feet on center, and large trees planted forty (40) feet on center.
(D) Six-foot (6') high masonry wall as an adjunct to vegetation.

In selecting materials and the size of plantings to be installed, the applicant and the Zoning Administrator shall consider the purpose of the landscape and the required materials shown in Table 12-3:

Table 12-3: Landscaping Purposes and Materials

Purpose	Materials
Very dense sight barrier	Evergreen trees, sight-obscuring fence
Visual separation between uses	Evergreen and deciduous trees, shrubs
Visual separation of uses	Evergreen and deciduous trees, shrubs, berms
Provide visual relief	Ground covers and shrubs lower than 36 inches
Visual relief/shade in parking areas	Trees, ground cover, decorative mulch, pavers

Section 1205.07 Plant Material

All canopy trees shall be at least 8 feet tall planted and have a trunk of not less than 2 caliper inches. No more than 35% of trees planted should be of the same species. At least 50% of trees and shrubs must be native to the area as indicated on the plant list. At least 50% of plant material must be evergreen. Shrubs shall be 3-gallon size. All plant material should comply with the quality specifications in the American Association of Nurserymen publication American Standard of Nursery Stock.

Section 1205.08 Irrigation

An automatically controlled irrigation system is recommended, but not required, for all landscaped areas. If provided, irrigation controllers shall be capable of irrigating grass and tree-shrub zones on different schedules and they shall incorporate the use of a rain sensor shut-off switch as required by City Ordinance No. 12-08-01. No significant overthrow shall be allowed onto non-pervious areas. Drip irrigation is encouraged.

Section 1205.09 Maintenance

It shall be the duty of any person or persons owning or occupying property subject to this article to maintain said property in good condition so as to present a healthy, neat, and orderly appearance. Property shall be kept free from refuse and debris. Planting beds shall be mulched to prevent weed growth and maintain soil moisture. Plant materials shall be pruned as required to maintain good health and character. Turf areas shall be mowed periodically. All roadways, curbs, and sidewalks shall be edged when necessary in order to prevent encroachment from adjacent grassed areas.

Any trees, shrubs or ground cover that die must be replaced within 60 days with a like specimen.

Canopy trees should be pruned in accordance with International Society of Arboriculture publication Pruning Standard (ANSI A300). Topping of trees is not allowed unless approved by the city arborist. The canopy of canopy trees may be

raised no more than 8 feet. Canopy trees are to be allowed to reach their normal shape and canopy size unless that will result in interference with the building or utilities. Shrubs in street and side yards should be maintained at a height of no less than 4 feet. Shrubs in interior landscape islands should be maintained at a height of 2 to 3 feet. All plant material should be planted and maintained so as to not obstruct vision clearance zones as defined by AASHTO.

Section 1205.10 Enforcement

The Administrative Officer will have authority to approve compliance with the landscape and tree plans prior to issuance of an occupancy permit. The owner, occupant, tenant, and respective agent of each, if any, shall be jointly and severally responsible for the maintenance and protection of all landscaping required to be installed pursuant to this Article. Prior to issuance of a certificate of occupancy, the developer or owner may be required to post a performance bond or cash escrow guaranteeing all landscaping materials and work for a period of two (2) years after approval or acceptance thereof. The bond, if required, will be in the amount of 100 percent of the estimated cost of replacing all of the landscaping required by these specifications, unless otherwise specified by the Administrative Officer. The city arborist will inspect the property one year after issuance of an occupancy permit, but will also have the authority to require replacement of dead or diseased plant material at any time after installation. The current owners must plant any plant material that is required to be replaced within 60 days of receipt of notification. An extension may be allowed based on planting conditions. At the end of two years, the city arborist shall make an inspection and notify the owner or developer and the bond company of any corrections to be made. If no maintenance is required, or if said responsible party provides maintenance, the city arborist shall release the bond.

Permission from the city arborist will be required before canopy trees are pruned. Any finding of the arborist may be appealed to the Administrative Office or Governing Body.

Section 1205.11 Violations, Penalties, and Appeals

Any person, firm or corporation violating, neglecting or refusing to comply with any of the provisions of these regulations shall be guilty of a misdemeanor and, upon conviction, shall be fined not less than fifty ($50) dollars nor more than two hundred ($200) dollars for each offense. Each day such violation continues shall constitute a separate offense. Pruning of canopy trees without permission will result in a fine of $500 per tree.

Table 12-4: PLANT LISTS

Allowed Trees and Shrubs *** Native**

OVERSTORY TREES

Botanical Name	Common Name
Acer barbatum	Florida Maple
Acer rubrum *	Red Maple
Acer sacchanum *	Sugar Maple
Betula nigra *	River Birch
Carya species *	Hickory
Celtis laevigata *	Sugar Hackberry
Cercidphyllum japonicum	Katsura Tree
Fagus grandiflora *	American Beech
Fraxinus pennsylvanica *	Red Ash
Ginkgo biloba	Gingko
Liriodendron tulipeifera *	Tulip Poplar
Magnolia grandiflora	Southern Magnolia
Metasequoia glyptostroboides	Dawn Redwood
Nyssa sylvatica *	Black Gum
Ostrya virginiana *	Ironwood
Pinus strobes *	White Pine
Pinus taeda *	Loblolly Pine
Pinus virginiana *	Virginia Pine
Platanus occidentalis *	Sycamore
Quercus alba *	White Oak
Quercus accutissima	Sawtooth Oak
Quercus coccinea *	Scarlet Oak
Quercus falcate *	Southern Red Oak
Quercus laurifolia	Laurel Oak
Quercus nigra *	Water Oak
Quercus palustris	Pin Oak
Quercus rubra *	Northern Red Oak
Quercus shumardii *	Shumard Oak
Quercus stellata *	Post Oak
Quercus phellos *	Willow Oak
Tilia cordata	Littleleaf Linden
Ulmus parvifolia	Lacebark Elm
Zelkova japonica	Japanese Zelkova

UNDERSTORY TREES

Botanical Name	Common Name
Acer buergerianum	Trident Maple
Acer campestre	Hedge Maple
Acer ginnata	Amur Maple
Acer griseum	Paperbark Maple
Acer palmatum	Japanese Maple
Amelanchier arborea *	Serviceberry
Carpinus caroliniana *	American Hornbeam
Cedrus deodara	Deodar Cedar
Cercis Canadensis *	Eastern Red Bud
Chlonanthus verginicus *	Fringe Tree
Comus florida *	Flowering Dogwood
Comus kousa	Kousa Dogwood
Crataegus phaenopyrum *	Washington Hawthorne
Cryptomeria japonica	Cryptomeria
Cupressocyparis leylandii	Leyland Cypress
Halesia Carolina *	Carolina Silverbell
Hamamelis virginiana *	Witch Hazel
Illicium floridanum	Flroida Anise Tree
Ilex aquafolium x 'Nellie R. Stevens'	Nellie R. Stevens Holly
Ilex attenuate x 'fosteri'	Foster's Holly
Ilex attenuate x 'Savannah'	Savannah Holly
Ilex opaca *	American Holly
Ilex vomitoria (treeform) *	Treeform yaupon Holly
Juniperus virginiana *	Red Cedar
Koelreuteria pnaiculata	Golden Rain Tree
Lagerstroemia indica	Crape Myrtle
Magnolia soulangiana	Saucer Magnolia
Magnolia stellata	Star Magnolia
Magnolia virginiana	Sweetbay Magnolia
Malus species *	Flowering Crabapple
Myrica cerifera (tree form)	Tree Form Wax Myrtle
Ostrya virginiana *	Eastern Hophornbeam
Oxydendrum arboretum *	Sourwood
Pistacia chinensis	Chinese Pistache
Prunus caroliniana	Cherry Laurel
Prunus species	Flowering Cherry
Prus calleryana x Chanticleer	Chanticleer Pear
Sassafras albidum *	Sassafras
Sophora japonica	Japanese Pagodatree
Taxodium distichum	Bald Cypress
Vitex agnus-castus	Chaste Tree

LARGE SHRUBS

Botanical Name	Common Name
Abelia grandiflora	Glossy Abelia
Aesculus pavia *	Red Buckeye
Aesculus parviflora *	Bottlebrush Buckeye
Aucuba japonica	Aucuba
Buxus sempervirens	Common Boxwood
Camellia japonica	Camellia
Camellia sasanqua	Sasanqua Camellia
Cleyera japonica	Japanese cleyera
Forsythia suspensa	Border Forsythia
Hibiscus syriacus	Shrubalthea
Hydrangea quercifolia	Oakleaf Hydrangea
Ilex aquafolium x 'Nellie r. Stevens'	Nellie R. Stevens Holly
Ilex attenuate x 'fosteri'	Foster's Holly
Ilex attenuate x 'Savannah'	Savannah Holly
Ilex latifolia	Lusterleaf Holly
Ilex cornuta 'Burfordii"	Buford Holly
Ilex opaca *	American Holly
Ilex verticillata	Deciduous Holly
Ilex vomitoria *	Yaupon Holly
Kerria japonica	Kerria
Loropetalum chinense	Loropetualum
Miscanthus varieties	Miscanthus
Myrica cerifera	Wax Myrtle
Osmanthus fragrans	Fragrant Tea Olive
Pieris japonica	Japanese Pieris
Prunus caroliniana *	Cherry Laurel
Rhodendron indica	Indica Azaleas
Rhododendron species *	Rhododendron
Viburnum opuluus	Snowball Viburnum
Viburnum sieboldi	Siebold Viburnum
Vibernum plicaturn x tomentosum	Doublefile Viburnum

SMALL/MEDUIM SHRUBS

Azalea obtusum	Kurume Azalea
Azalea hybrids	Glenn Dale Azalea
Berberis thunbergi	Japanese Barberry
Buxus microphylla	Dwarf Boxwood
Callicarpa Americana *	Beautyberry
Calycanthus floridus	Sweet Shrub
Chaenomeles speciosa	Common Flowering Quince
Clethra alnifolia *	Summersweet Clethra
Cotoneaster horizontalis	Rock Cotoneaster
Duetzia gracilis	Slender Deutzia
Euonymus alatus compactus	Dwarf Winged Euomymus
Forsythia x intermedia	Forsythia
Fothergilla gardenia *	Dwarf Fothergilla
Gardenia jasminoides	Gardenia
Hydrangea arborescens	Snowhill Hydrangea
Hydrangea macrophylia	Bigleaf Hydrangea
Hydrangea paniculata	Panicle Hydrangea
Hydrangea quercifolia	Oakleaf Hydrangea
Ilex cornuta 'Burfordii nana'	Dwarf Burford Holly
Ilex cornuta 'Carissa'	Carissa Holly
Ilex vomitoria 'Nana'	Dwarf yaupon Holly
Itea virginica *	Virginia Sweetspire
Jasminum floridanum	Flowering Jasmine
Jasminum nudiflorum	Winter Jasmine
Juniper species	Spreading Junipers
Juniper species	Upright Junipers
Leucothoe populifolia	Florida Leucothoe
Kalmia latifolia *	Mountain Laurel
Mahonia aquifolium	Origon Grape Holly
Mahonia bealei	Leatherleaf Mahonia
Nandina domestica	Nandina
Prunus laurocerasus 'Otto Lukyen'	Otto Lukyen Laurel
Prunus laurocerasus 'Schipkaensis'	Skip Laurel
Prunus laurocerasus 'Zabeliana'	Zabel laurel
Rhaphiolipsis indica	Indian Hawthorn
Rosa species	Shrub Roses/Old Roses
Spirea species * some sp.	Spirea
Weiglea florida	Old Fashioned Weiglea

GROUND COVERS

Hemerocallis species	Day Lilies
Hosta species	Hosta
Ibris sempervirens	Evergreen Candytuft
Iris species	Iris
Juniperus horizontalis	Creeping Junipers
Lantana sellowiana	Trailing Lantana
Liriope muscari	Bigblue Liriope
Liriope spicata	Creeping Liriope
Narcissus species	Daffodils
Ophiopogon jaonicus	Mondo Grass
Pachysandra terminalis	Pachysandra
Phlox subulata	Thrift
Vinca minor	Common Periwinkle
Vinca major	Large Periwinkle
Clematis species	Clematis
Euonymus fortunei	Wintercreeper
Gelsemium sempervirens *	Carolina Yellow Jessamine
Lonicera sempervirens	Trumpet Honeysuckle
Parthenocissus quinquefolia *	Virginia Creeper
Rosa banksiae	Lady Banks Rose
Rosa hybrida	Climbing Roses

FERNS

Adiantum Capilus-Veneris *	Maidenhair Fern
Asplenium Filix-foemina *	Southern Lady Fern
Asplenium platyneuron *	Ebony Spleenwort
Osmunda cinnamomea *	Cinnamon Fern
Osmunda regalis *	Royal Fern
Polystichum acrostichoides *	Christmas Fern

Prohibited Trees and Shrubs

Scientific Name	Common Name
Ailanthhus altissima	Tree of Heaven
Albizia julibrissin Durazz	Mimosa
Alternanthera philoxeroides	Alligatorweed
Eichhornia crassipes	Common water hyacinth
Elaeagnus umbellate	Autumn olive
Hedera helix	English Ivy
Hydrilla verticillata	Hydrilla
Lespedeza bicolor	Shrubby lespedeza
Lespedeza cuneata	Sericea lespedeza
Ligustrum sinense	Chinese privet
Lonicera japonica	Japanese honeysuckle
Lygodium japonicum	Japanese climbing fern
Melia azedarach	Chinaberry tree
Microstegium vimineum	Nepalese browntop
Murdannia keisak	Marsh dewflower
Paulownia tomentaosa	Princesstree
Pueraria Montana	Kudzu
Rosa multiflora	Multiflora rose
Triadica sevifera	Chinese tallow
Wisteria sinensis	Chinese wisteria
Achyranthes japonica	Japanese chaff flower
Alliaria petiolata	Garlic mustard
Arthraxon hispidus	Small carpgrass
Celastrus orbiculatus	Oriental bittersweet
Imperata cylindrical	Cogon grass
Paederia foetida	Skunk vine
Polygonum cuspidatum	Japanese knotweed
Alvinia molesta	
Ardisia crenata	Coral ardisia
Cinnamonum camphora	Camphortree
Dioscorea oppositifolia	Chinese yam
Egeria densa	Brazilian waterweed
Elaeagnus pungens	Thorny olive
Leucanthemum vulgare	Oxeye daisy
Ligustrum japonicum	Japanese privet
Lonicera maackii	Amur honeysuckle
Myriophyllum aquaticum	Parrot feather watermilfoil
Nasturtium officinale	Watercress
Paspalum notatum	Bahia grass
Phyllostachys aurea	Golden bamboo
Sesbania hervacea	Bigpod sesbnia
Sesbania punicea	Rattlebox
Tamarix gallica	French tamarisk

Scientific Name	Common Name
Alternanthera sessilis	Sessile joyweed
Ampelopsis brevipedunculata	Amur peppervine
Anthoxanthum odoratum	Sweet vernal grass
Arundo donax	Giant reed
Broussonetia papyrifera	Paper mulberry
Carduus nutans	Musk thistle
Centaurea cyanus	Garden cornflower
Clematis terniflora	Sweet autumn virginsbower
Colocasia esculenta	Coco yam
Coronilla varia	Purple crownvetch
Daucus carota	Queen Anne's lace
Dioscorea alata	Water yam
Dioscorea bulbifera	Air yam
Eragrostis curvula	Weeping love grass
Euonymus fortunei	Winter creeper
Hibiscus syriacus	Rose of Sharon
Lantana camara	Lantana
Lespedeza thunbergii	Thunberg's lespedeza
Limnophila sessiliflora	Asian marshweed
Lolium arundinaceum	Tall fescue
Lonicera fragrantissima	Sweet breath of Spring
Marsilea minuta	Dwarf waterclover
Melilotus alba	White sweetclover
Melinis repens	Rose Natal grass
Menthe x piperita	Peppermint
Morus alba	White mulberry
Mosla dianthera	Miniature beefsteak plant
Myriophyllum spicuatum	Eurasian Watermilfoil
Panicum repens	Torpedo grass
Paspalum urvillei	Vasey's grass
Phragmites australis	Common reed
Poa annua	Annual bluegrass
Polygonum persicaria	Spotted ladysthumb
Poncirus trifoliate	Trifoliate orange
Potamogeton crispus	Curly pondweed
Pyrus calleryana	Callery pear (Bradford pear)
Rottboellia cochinchinensis	Itchgrass
Rubus discolor	Himalayan blackberry
Sesbania vesicaria	Bagpod
Solanum viarum	Tropical soda apple
Sorghum halepense	Johnson grass
Stachys floridana	Florida hedgenettle
Vernicia fordii	Tungoil tree

End Article XII