

CHAPTER 33
LANDSCAPE, BUFFERS AND SCREENING

SECTION

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Chapter 33
Landscape, Buffers and Screening
(3343-10/07/2008)

14-3300. PURPOSE AND INTENT

The purpose of this ordinance is to promote and protect the public health, safety and general welfare by providing for the planting, maintenance and preservation of trees, shrubs and other vegetation within the city. These elements provide important benefits including: improved air quality; transitioning between incompatible land uses; screening of undesirable views; reduction of glare, dust, noise and odors; and reduction of stormwater runoff and flooding. Such benefits contribute to a higher quality of life and enhance the aesthetic appeal and economic value of properties within the city.

The intent of this ordinance is to promote this purpose by providing standards for landscaping for vehicular use areas (parking and storage lots), along public rights of way (front yard areas), between dissimilar uses (buffer yards), and screening for service areas. Planting standards and recommended species are included to help ensure quality landscape installations and maintenance within the city.

14-3301. APPLICABILITY AND COMPLIANCE

A. Applicability

These standards shall apply to all new public and/or private development sites except single family residential structures on their own lot.

Existing public and/or private development sites undergoing building and/or vehicular use area expansions shall be required to fully meet the standards of this ordinance wherever such standards would typically apply.

B. Review for Compliance

Review for compliance with the standards of this chapter shall occur at the time of submittal of a Site Plan, Concept Plan, or Preliminary Plat as appropriate.

C. Certificate of Occupancy/Performance Bond

A Certificate of Occupancy shall not be issued for a structure prior to the installation of required landscape and planting materials. If a Certificate of Occupancy is required and special circumstances prevent the immediate installation of plant materials, the developer or owner may request an extension from the Planning Department in the following circumstances and under the following conditions:

1. Unusual environmental conditions such as drought, ice, over-saturated soil (deep mud), or inappropriate planting season for the plant species; and/or
2. Unavailability of plant species or acceptable plant size as specified on the Landscape Plan in cases where such materials are not commercially available within a reasonable time; and/or
3. Circumstances beyond the developer's control such as incomplete construction or utility work to occur in proposed landscaped area within 30 days after expected site completion (provided the developer or land owner submits a letter from the utility company stating the estimated installation date).

If such an extension is granted, the developer or owner shall post a performance bond with the Planning Department. The amount of the bond shall be based on material and installation costs of the uninstalled landscape material, as shown on the submitted Landscape Plan, plus a 50% contingency cost. Cost estimates shall be provided by a minimum of two plant nurseries. The performance bond shall expire after 180 days. The bond shall be called if the required landscaping has not been installed by the end of the 180 day period and the funds applied to complete the landscaping work.

E. Appeals

Any person or corporation may appeal a decision of a city employee or other official in the administering of these provisions to the Board of Zoning Appeals. Requests for such appeals shall follow the procedures established within this Zoning Ordinance.

F. Enforcement

Enforcement of these provisions shall be the responsibility of the Codes Enforcement Division of the City of Morristown. Property owners will be held responsible for the maintenance and upkeep of planted materials. Persons in violation of this section may be cited and fines levied in accordance with the Tennessee Code Annotated.

14-3302. DEFINITIONS

American Nurseryman Standards: The standards related to size and planting for newly planted landscaping materials as referenced in *The American Standard for Nursery Stock* (ANSI 260.1-2004) prepared by the American Nursery and Landscape Association.

Berm: An elongated earthen mound typically designed or constructed on a site to separate, screen, or buffer adjacent uses.

Buffer: Vegetative material, fences, berms, or any combination of these elements located on a linear strip of land that are used to separate and screen incompatible uses from one another.

Caliper: A horticultural method of measuring the diameter of the trunk of a nursery-grown tree for the purpose of determining size. The caliper of the trunk is measured six inches above the ground for trees up to and including four inches in diameter and 12 inches above the ground for trees greater than four inches in diameter.

Canopy Tree: See “Tree, Canopy”

Critical Root Zone (CRZ): A circular area measured outward from a tree trunk representing the essential area of the roots that shall be maintained for the tree’s survival. The CRZ is measured one foot of radial distance for every inch of tree DBH (diameter at breast height) with a minimum of 10 feet. Also referred to as the “crown dripline”.

DBH: See “Diameter at Breast Height”

Deciduous: Plants that drop their foliage annually before becoming dormant.

Diameter at Breast Height (DBH): The measurement of the diameter of a tree trunk taken at a height of four-and-one-half feet (4 ½) above the ground. Trees with multiple trunks should be treated as multiple

trees and the DBH for each trunk added to aggregate diameter measurement.

Erosion: The process of the gradual wearing away of land masses.

Evergreen: A plant with foliage that remains green year-round.

Fence: A structure used to delineate a boundary or act as a barrier or means of protection, confinement, or screening.

Front Yard Area: The portion of a development site that qualifies as the front yard (building) setback area, the minimum horizontal distance between the building line and related front property line as established by the zoning classification.

Grading: An operation or occurrence by which existing site elevations are changed or where ground cover, natural or man-made, is removed or a watercourse or body, natural or man-made, is relocated on a site, thereby creating an unprotected area. This includes stripping, cutting, filling, stockpiling, or any combination thereof and shall apply to the land in its cut or filled condition.

Ground Cover: Any natural vegetative growth or other material that renders the soil surface stable against accelerated erosion. Also see “Mulch”.

Hedge: A group of shrubs planted in a continuous compact, dense, living barrier that demarcates an area from on-site or off-site views.

Impervious Surface: A surface that has been compacted or covered with a layer of material so that it is highly resistant to infiltration by water.

Landscape Area: The portion of a development site that is occupied by, or is required to be occupied by, landscape materials. For the purpose of this ordinance, landscape materials include trees, shrubs, groundcovers, mulching materials and sod as well as fences, walls, or berms used to meet these requirements.

Landscape Island: An area within a surface parking lot or street right of way that is designated for trees, shrubs, and/or ground cover.

Mulch: A layer of seasoned wood chips, dry leaves, straw, hay, plastic, or other materials placed on the surface of the soil around plants to retain moisture, prevent the growth of weeds, and to hold the soil in place or aid plant growth. Also see “Ground Cover”.

Nursery: Land or greenhouses used to raise trees, shrubs, and other plants for sale.

Opaque Screen: A device or materials, unable to be seen through, that is used to conceal one element of a development from other elements or from adjacent or contiguous development or public rights of way.

Performance Bond: Any securities that may be accepted by the City of Morristown as a guarantee that the improvements required as part of an application for development are satisfactorily completed.

Severe Pruning: The pruning, cutting, or otherwise damaging of the natural form of a tree or shrub, whether existing or planted, such that a significant or noticeable portion of the crown system is removed (e.g., 25 percent of the crown removed from a tree or the continued cutting/trimming of trees previously pruned illegally or pruning of trees that must grow naturally to meet the landscaping requirements) or if more than one-third of the overall circumference of a tree or shrub is exposed by pruning cuts.

Shrub: A self-supporting woody plant, growing 18 inches to 15 feet in height at maturity characterized by multiple stems and branches continuous from the base, usually not more than ten feet in height at its maturity. Shrubs may be deciduous or evergreen.

Sight Distance Triangle: A portion of land formed by the intersection of two street right of way lines and points along each right of way a particular distance from the intersection. Nothing shall be erected, placed, or allowed to grow in such a manner as to limit or obstruct the sight distance of motorists entering or leaving an intersection or driveway connection. Sight distance is generally calculated at two times the design speed of the roadway. (Note – the posted speed is often less than the design speed.) The City engineer will review sight distance triangles.

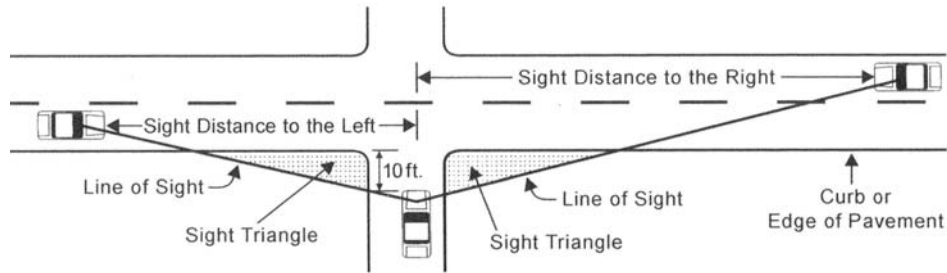


Illustration 1 – Sight Distance Triangle
From I.T.E. Transportation & Land Development, 2nd Edition

Street Yard: A designated landscape area (pervious surface) where private property abuts the public street right of way for the planting of shrubs and grass. (Typically reserved as a utility easement.)

Tree, Canopy: Any plant having a central trunk, a minimum expected mature height of at least 35 feet and an expected minimum mature canopy spread of 20 feet.

Tree, Replacement: A tree that is required to be planted after the development of a site to replace either predevelopment existing trees that were removed accidentally or in violation of this ordinance during or as a result of the land disturbance process or a tree that has died and no longer meets landscape requirements.

Tree, Specimen: Any canopy tree with a diameter of 24 inches or greater and any understory tree with a diameter of eight inches or greater measured four-and-one-half feet above grade. In the case of multi-stem trees, at least one of the stems or trunks shall meet applicable size requirements before the tree shall be considered a specimen tree.

Tree, Street: Any existing tree located within a public street right of way. Street trees may not be credited toward landscape requirements.

Tree Topping: See “Severe Pruning”.

Tree, Understory: Any plant having a central trunk, a maximum expected mature height of 25 feet and a minimum mature canopy spread of 10 feet.

Tree Bank: A fund to receive contributions from owners or developers who remain unable to successfully plant and maintain the required amount of replacement or required site landscaping on the site under development.

Tree Credits: Credits shall be awarded for retaining healthy trees on the property in accordance with the provisions of this ordinance.

Understory Tree: See “Tree, Understory”

Utility Easement: An easement conveyed, granted, or dedicated for utility purposes (stormwater, wastewater, electrical, water systems, etc.)

Vehicle: For the purpose of this chapter a vehicle is defined as a piece of rolling stock, including but not limited to automobiles, boats, trailers, trucks, motor homes and farm machinery.

Vehicular Use Area: An area where motor vehicles are either stored or driven (surface parking lot) outside of a dedicated street right of way. Also referred to as a “surface parking lot” or “off-street parking”.

Vision Clearance: A condition which is achieved when nothing is erected, placed, or allowed to grow in such a manner as to limit or obstruct the sight distance of motorists entering or leaving an intersection or driveway, traffic signs or devices, or interfere with the use of sidewalks or pedestrian trails. Also see “Sight Distance Triangle”.

14-3303. GENERAL REQUIREMENTS

A. Landscape Plan Required

In order to ensure compliance with the standards of this ordinance, a Landscape Plan that demonstrates how landscape will be planted on a development site (including trees, shrubs, and groundcovers) shall be included with or as part of any application for Site Plan, Concept Plan, or Preliminary Plat for Subdivision, whichever is appropriate.

The following elements shall be shown on the Landscape Plan:

1. Location, installation size, estimated height and spread at maturity, quantity, and scientific and common names of landscaping to be installed (including existing trees to be used for credits and methods of protection during construction);
2. Methods of screening (if applicable) with the spacing between trees and shrubs and location of fences or berms used for screening purposes noted;
3. Proposed structures and vehicular use areas including parking stalls, bays, driving lanes, curbing, and landscape islands;
4. General site data including zoning of site and adjacent parcels, property boundary lines and lot dimensions, graphic scale, north arrow, title, and name of owner;
5. Existing and proposed utilities, easements, and 100-year floodplain (if applicable); and
6. Illustration of sight distance triangle(s) where applicable.

B. Planting Standards

Plantings shall comply with the following standards:

1. Minimum Size at Time of Planting

- a. Deciduous canopy trees shall be a minimum of two inches in caliper at the time of planting, as determined in the American Standard for Nursery Stock, ANSI Z60.1-2004.
- b. Deciduous understory trees shall be a minimum of one and one-half inches in caliper at the time of planting, as determined in the American Standard for Nursery Stock, ANSI Z60.1-2004. Multi-stem varieties shall be a minimum of eight feet in height above ground level at the time of planting.
- c. Evergreen trees shall be a minimum of six feet in height and a minimum of two inches in caliper at the time of planting.
- d. Except where required to be taller, shrubs shall be a minimum of 18 inches in height above ground level at the time of planting.
- e. In cases where application of the requirements in this subsection result in a fraction in the number of plantings to be provided, the minimum number of plantings to be provided shall be rounded upwards to the next highest whole number.

2. Plant Diversity

To curtail the spread of disease or insect infestation in a plant species, new plantings shall comply with the following standards:

- a. When fewer than 20 trees are required on a site, at least two different genus shall be used, in roughly equal proportions.
- b. When more than 20 but fewer than 40 trees are required to be planted on site, at least three different genus shall be used, in roughly equal proportions.
- c. When 40 or more trees are required on a site, at least four different genus shall be used, in roughly equal proportions.
- d. Required shrubs shall use the same plant diversity requirements.
- e. Nothing in this subsection shall be construed to prevent the use of a larger number of different genus than specified above.

3. Credit for Existing Trees, Shrubs, and Groundcover

- a. Existing healthy, well-formed canopy and understory trees, healthy shrubs, and groundcovers located within the property lines of the site under development may be credited toward the requirements of this ordinance provided the vegetation is:
 - i. Surveyed, inventoried, and protected before and during development of the site. The root system of the qualifying tree shall not be disturbed, graded, or paved within the limits of the critical root zone of the tree (See “Tree Protection During Construction”);
 - ii. Located in suitable locations to meet the standards of this ordinance; and
 - iii. Maintained thereafter in a healthy growing condition.

- b. The following plants shall not be credited towards the minimum requirements of this subsection:
 - i. Plants listed in the current edition of the *Invasive Exotic Pest Plants of Tennessee*, as published by the Tennessee Exotic Pest Plant Council;
 - ii. *Pyrus calleryana* ‘Bradford’, commonly known as a Bradford Pear tree (weak wood/short lifespan); and
 - iii. *Acer saccharinum*, commonly known as a Silver Maple tree (aggressive root system/weak wood/high maintenance).

4. Tree Protection during Construction

- a. During development, the owner or developer shall be responsible for the erection of all barriers necessary to protect any existing or installed trees used to meet the requirements of this ordinance from damage both during and after construction.
- b. Tree protection fencing should be extended at least one foot in distance from the edge of the tree for each inch of DBH so that each tree’s critical root zone is protected, but in no case less than ten feet from the trunk. All fencing should be at least four feet in height. The fencing should be maintained until the land disturbance activities are complete.
- c. Signs identifying the area as a tree protection zone should be installed on the fence, visible on all sides, at a rate of at least one sign for every 150 linear feet of fencing. Signs should be clearly marked in English and Spanish.
- d. Tree protection fencing should be clearly shown on all applicable site construction documents.

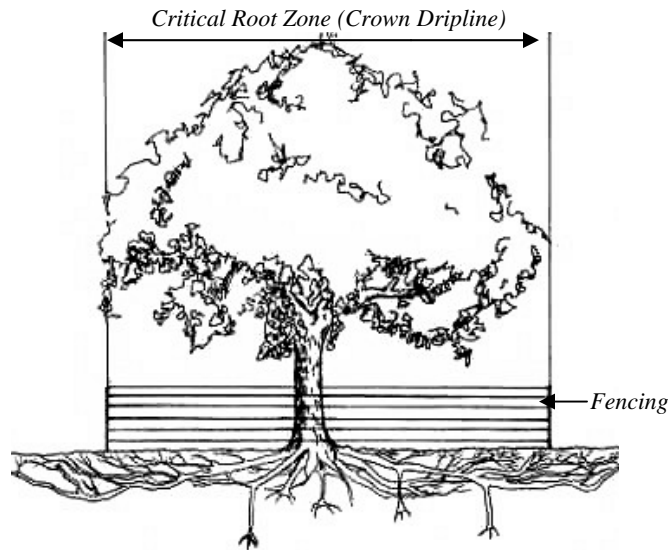


Illustration 2 – Critical Root Zone

5. Stabilization

All landscaped planting areas shall be stabilized and maintained with seed, sod, ground covers, mulches, or other approved materials to prevent soil erosion and allow rainwater infiltration.

C. Maintenance of Landscape Materials

1. General Maintenance

- i. The owner shall be responsible for the maintenance of all landscape areas not located within the public right of way. The owner shall take actions to protect trees and landscaping from unnecessary damage during all facility and site maintenance operations.
- ii. Landscape areas shall be maintained in accordance with the approved Landscape Plan and shall present a healthy and orderly appearance free from refuse and debris.
- iii. All plant life shown on the approved Landscape Plan used to meet a minimum requirement of this ordinance shall be replaced if it dies, is seriously damaged, or removed.

2. Damage Due to Natural Occurrence

In the event that any vegetation or physical element functioning to meet the standards of this subsection is severely damaged due to an unusual weather occurrence or natural catastrophe or other natural occurrence such as damage by wild or domestic animals, the owner may be required to replant if the landscape standards are not being met. The owner shall have one growing season to replant.

3. Vision Clearance

Plants shall be maintained in a way that does not obstruct sight distances at roadway intersections, obstruct traffic signs or devices and/or interfere with the use of sidewalks or pedestrian trails.

4. Natural Shape

All required trees shall be maintained in their characteristic natural shape and shall not be severely pruned, sheared, topped, or shaped as shrubs. Trees required by this chapter that have been severely pruned, sheared, topped, or shaped as shrubs that no longer meet their intended function shall be considered as damaged vegetation in need of replacement and shall be replaced within one growing season.

14-3304. MINIMUM SITE LANDSCAPE REQUIREMENTS

A. Building Foundation Plantings

Nonresidential and multi-family buildings, when not abutted by a sidewalk, shall provide foundation plantings of shrubs placed along the building perimeter of the primary façade. The primary façade of the building is considered to be the portion that faces the street (public right of way) the building is addressed from.

B. Street Yard

1. Except for points of access, a street yard shall be provided where the proposed development site adjoins the public right of way. Alleys are exempt from these requirements.
2. The street yard shall have a minimum depth of ten feet as measured from the edge of the public street right of way (property line) towards the interior of the property. The street yard shall consist of sod grass or other natural living/pervious material. Trees are not permitted within the street yard area (typically reserved as a utility easement).

C. Front Yard Area Trees

1. Canopy trees shall be planted within the front yard (building) setback area at a minimum ratio of one tree per 50 linear feet of street (public right of way) frontage.
 - a. Trees do not have to be spaced in equal increments of 50 feet.
 - b. The minimum spacing between trees is 15 feet measured trunk to trunk.
 - c. Trees may be located in landscape islands within the parking area.
 - d. Trees must not interfere with underground utilities or lines of vision at driveways (see “Sight Distance Triangle”).
 - e. Canopy trees must be located at least fifteen feet from existing rights of way where no overhead utilities are present and at least twenty feet from right of way where overhead utilities are present.
 - f. Fractions of trees shall be rounded up to the nearest whole number.
4. Where overhead power lines encroach into the front yard, smaller understory trees shall be substituted for canopy trees. Refer to “Utility Easement Policies”.

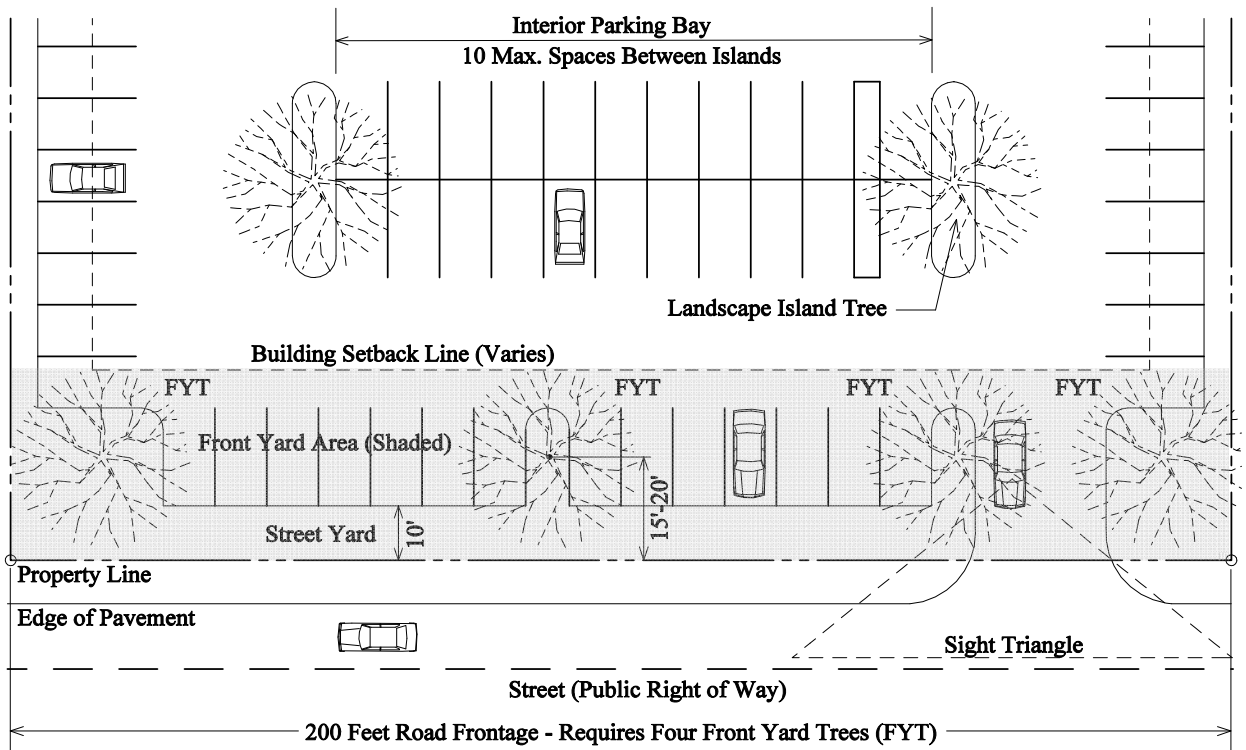


Illustration 3 – Sample Landscape Plan (not to scale)

D. Vehicular Use Areas

1. General Standards

All vehicular use areas (surface/off-street parking) associated with nonresidential and multi-family residential development shall include landscape materials both inside the vehicular use area and around its perimeter as a means of mitigating its microclimate and visual impacts.

2. Design Standards

- a. All vehicular use areas shall be designed to ensure that every parking space is within 50 feet of a tree location (excluding off-site street trees).
- b. All interior parking bays shall be bordered on both sides by a landscape island. Interior parking bays shall be limited to ten contiguous spaces between landscape island locations.
 - i. Landscape islands used to meet the requirements of this ordinance shall have a minimum width of eight feet and a minimum landscaped area of 200 square feet.
 - ii. Landscape islands used to meet the requirements of this ordinance shall be planted with at least one canopy tree. Two understory trees may be substituted where an overhead obstacle such as a canopy or power line limits the tree height or when the tree would be located within 25 feet of a building.

- iii. All landscape island planting areas shall be stabilized and maintained with sod, ground covers, mulches, or other approved materials to prevent soil erosion and allow rainwater infiltration.
 - iv. All landscape island planting areas shall be protected from vehicle damage by the installation of curbing. However, this standard shall not prohibit the use of planting areas as on-site stormwater management devices.
- c. Delivery stalls and loading bays shall be screened from the public right of way with a buffer yard. Also see “Buffer Yard”.

E. Buffer Yard

The purpose of the buffer yard is to reduce nuisances between incompatible land uses. The buffer yard shall contain a visual screen in order to control the effects of traffic, noise, glare, trash, activity, vibration, odor, visual disorder, and any other harmful or noxious effect associated with a nonresidential use.

1. Applicability

Buffer yards are required on all sides of nonresidential sites which border a residential zoning district or use. Buffer yards may be included in the building setback requirements, but cannot interfere with existing or proposed utility easements.

2. Design Standards

Required buffer yards shall maintain a minimum width of ten feet. One of the following options may be used to meet the buffer yard screening requirements:

a. Evergreen Trees

Trees shall be installed at a minimum height of six feet and have a minimum expected mature spread of ten feet. Spacing shall be in accordance with mature spread. For example, trees with a mature spread of ten feet shall be planted ten feet on center and a minimum of five feet from the property line.

b. Fences

Where fencing is used, it shall be placed at least six feet inside of the property line. Fences must be a minimum of six feet in height, measured on the side facing away from the property to be screened. The fence must also have its finished side facing away from the property to be screened. Fencing may be made of wood, brick, or other material that is at least 75 percent opaque. Chain link does not meet buffer yard requirements. One evergreen shrub shall be planted a minimum of every 10 linear feet along the side facing away from the property to be screened. One canopy tree shall be planted every 30 linear feet along the fence row facing toward the property to be screened and located a minimum of fifteen feet from the property line.

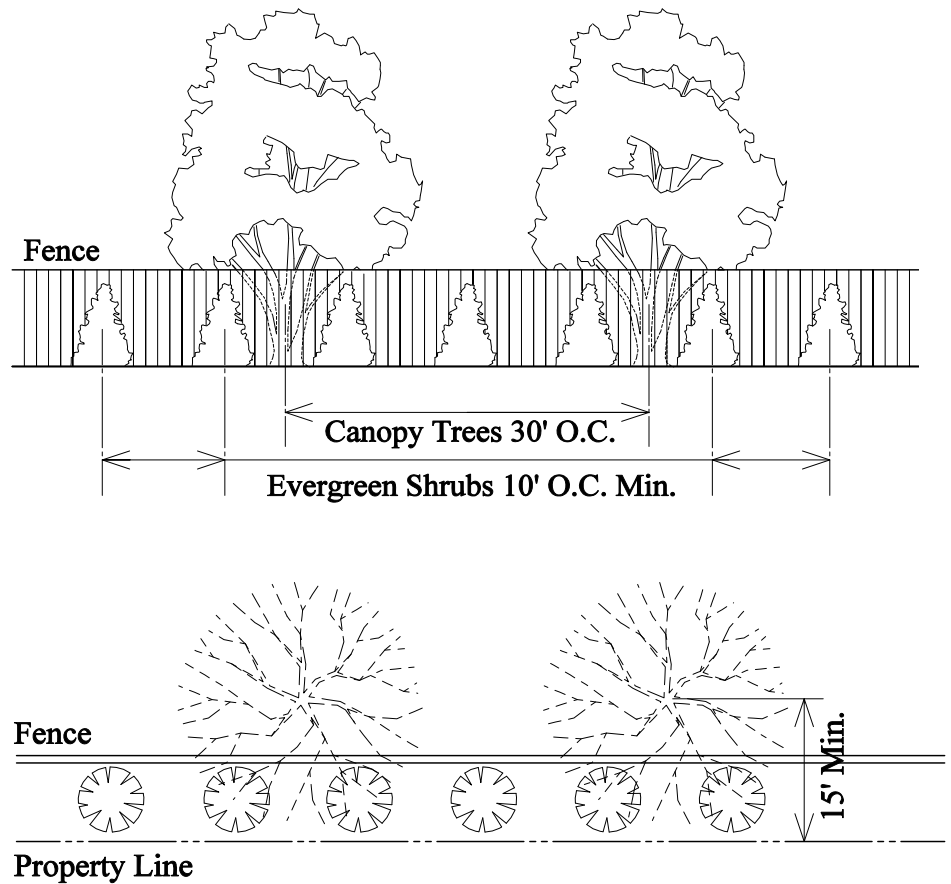


Illustration 4 – Fence Buffer (not to scale)

c. Berms

Where allowed, berms shall comply with the following standards:

1. Berms shall be a minimum of four feet in height and shall be capped with a hedge of evergreen shrubs, installed at a minimum of 18 inches high and have an expected maturity height of at least five to six feet and mature spread of a least five feet. Spacing shall be in accordance with mature spread.
2. The slope of all berms shall not exceed a three-to-one ratio (horizontal to vertical), shall have a top width at least one-half the berm height, and a maximum height of eight feet above the toe of the berm.
3. Berms exceeding four feet in height shall maintain a four-to-one ratio (horizontal to vertical).
4. Berms, regardless of size, shall be stabilized with sod, a ground cover, or other suitable vegetation.
5. Berms proposed to be placed along street rights of way shall not be permitted within the sight distance triangle at intersections.

6. Berms shall in no case damage the roots or trunks of existing healthy trees on adjacent properties.

F. Service Area Screening

All service areas, including garbage collection and utility service areas, shall be screened from public rights of way and adjoining residential property.

1. Dumpsters

Dumpsters shall be screened in the following manner:

- a. Screening shall be a minimum height of 6 feet.
- b. All four sides of the dumpster shall be screened.
- c. The screen should incorporate access to the dumpster by using a wood fence or other opaque device to serve as a gate.
- d. Screening materials can be any combination of evergreen plantings, wood, composite, or masonry material.

2. Utility Services

Exposed non-power utility features, power utility substations and exposed metal cabinets exceeding five feet in height shall be screened in the following manner:

- a. Screening materials can be any combination of evergreen plantings, wood, composite, or masonry material.
- b. Screening shall be at least one foot higher than the service area being screened.
- c. Screening shall be in accordance with all applicable building, electrical, and fire codes.
- d. The Planning Director may grant a special exemption where these provisions may interfere with security measures.

G. Stormwater Facilities

Stormwater facilities may be located in the landscape area subject to the following conditions:

1. Rip-rap, crushed stone, concrete, or other impervious materials are screened from view by evergreen plantings.
2. Trees and other vegetation may be planted along the stormwater facility.

14-3305. UTILITY EASEMENT POLICY

The applicant is responsible for identifying existing and proposed utility easements within the property on the Landscape Plan. Trees and shrubs used to meet the requirements of this ordinance shall not be located within proposed or existing utility easements unless one of the following special exceptions applies:

- A. Written permission has been obtained from the holder of the utility easement.
- B. Where overhead power lines cross an area required by this ordinance to be planted with canopy trees, smaller understory trees may be substituted.

If none of the special exceptions above apply, the following options shall be considered:

- A. Planting the trees or shrubs as close to the easement as possible (no canopy tree may be located within fifteen feet of existing or proposed overhead utilities); or
- B. Planting the trees or shrubs at another location on the property that would not typically have landscape requirements associated with it.
- C. If the above options also cannot be met, an in-lieu payment to the Tree Bank may be considered.

14-3306. TREE BANK

A. Purpose

The Tree Bank shall be a fund to receive:

1. In-lieu payments from applicants who are unable to successfully plant and maintain tree plantings required on sites under development;
2. Fines received for the illegal cutting of trees; and
3. Charitable contributions given to the city for planting trees.

B. Use of Funds

Payments and contributions to the Tree Bank shall be used solely for landscaping and beautification projects on public lands such as parks, public open spaces, at community and civic facilities, and within public rights of way within the City of Morristown.

C. Payments In-Lieu

1. Eligibility

The Planning Department may consider requests for in-lieu payments to the Tree Bank only when:

- a. The site does not provide for adequate landscape surface area to accommodate the total number of required trees; or
- b. The unique soil types, topography or unusual nature of the site would not assure growth of the trees required.

The preference of an applicant to use an in-lieu payment is not an adequate justification for determining eligibility. In-lieu payments shall not be used to address screening, buffering or vehicular use area requirements.

2. Maximum Payment Amounts

Tree installation cost estimates obtained from a minimum of two plant nurseries must be provided to the Planning Director for approval. The tree installation cost, which shall be the cost of the trees installed (not the wholesale price), shall be based on material and installation costs of the uninstalled landscape material, as shown on the submitted Landscape Plan, plus a 50% contingency cost.

3. Procedure

- a. Following receipt of a written request to use an in-lieu payment from an applicant, the Planning Department shall determine the eligibility and allowable extent during the Site Plan review stage. If, after the Site Plan is approved, the applicant wishes to reevaluate a decision to contribute to the Tree Bank, a revised landscaping plan and payment proposal shall be submitted to the Planning Department for approval.
- b. The applicant shall provide the in-lieu payment before a Building Permit is issued.

14-3307. SPECIES RECOMMENDATIONS

The following recommendations are offered as a guide and are based upon landscape design principles and practical applications. Tree species are listed alphabetically by their common name with the scientific name listed to the side in *italics*. General heights and spread are also listed. Other tree and shrub species may be substituted with approval of the Landscape Plan. It is the responsibility of the developer, landscape architect, and/or landscape installer to verify site soil conditions, plant disease resistance, and that mature plant height and spread is suitable for the location. Native tree species are marked with an asterisk (*).

A. Canopy Trees (*min. expected maturity height of 35 feet*)

<u>Common Name</u>	<u>Scientific Name</u>	<u>Mature Height/Spread</u>
English Oak	<i>Quercus robur</i>	40'-60'/30'
European Hornbeam	<i>Carpinus betulus</i> and cultivars	40'/40'
Ginkgo (Maidenhair Tree)	<i>Ginkgo biloba</i> (male)	50'-60'/25'-40'
Golden Raintree	<i>Koelreuteria paniculata</i>	20'-35'/25'-40'
<i>Canopy Trees continued...</i>		
Green Ash*	<i>Fraxinus pennsylvanica</i>	50'-60'/25'-30'
Hedge Maple	<i>Acer campestre</i>	70'/30'
Honey Locust*	<i>Gleditsia triacanthus</i>	35'-70'/25'-35'
Katsura Tree	<i>Cercidophyllum japonicum</i>	40'/40'
Lacebark Elm	<i>Ulmus parvifolia</i>	40'-60'/25'-40'
Little-Leaf Linden	<i>Tilia cordata</i>	35'-50'/20'-30'
Pin Oak	<i>Quercus palustris</i>	50'-80'/25'-40'
Red Maple*	<i>Acer rubrum</i> and cultivars	60'/40'
River Birch*	<i>Betula nigra</i>	50'-90'/40'-60'
Sawtooth Oak	<i>Quercus acutissima</i>	35'-45'/35'-45'
Silver Linden	<i>Tilia tomentosa</i>	40'-50'/20'-30'
Southern Magnolia	<i>Magnolia grandiflora</i> 'Carolina'	80'/40'-60'
Yellow Wood*	<i>Cladrastis kentukea</i>	35'-50'/20'-25'
Yoshino Cherry	<i>Prunus x. yedoensis</i>	40'/30'

B. Understory Shade Trees (*max. expected maturity height of 25 feet*)

<u>Common Name</u>	<u>Scientific Name</u>	<u>Mature Height/Spread</u>
American Smoke Tree*	<i>Cotinus obovatus</i>	20'-30'/20'-30'
Amur Maple	<i>Acer tataricum ginnala</i>	20'-25'/20'-25'
Eastern Redbud*	<i>Cercis canadensis</i>	25'/25'
English Hawthorn	<i>Crataegus laevigata</i>	15'-25'/15'-20'
Flowering Cherry	<i>Prunus 'Okame'</i>	25'/20'
Flowering Dogwood*	<i>Cornus florida</i> and cultivars	20'-25'/20'-25'
Japanese Crapemyrtle	<i>Lagerstroemia fauriei</i>	25'/25'
Kousa Dogwood	<i>Cornus kousa</i> and cultivars	20'/20'
Paperbark Maple	<i>Acer griseum</i>	25'/15'-25'
Serviceberry (Juneberry)*	<i>Amelanchier arborea</i>	20'/20'
Sweetbay Magnolia	<i>Magnolia virginiana</i>	10'-20'/10'-20'
Trident Maple	<i>Acer buergeranum</i>	20'-25'/20'-25'
Winter King (Green) Hawthorn*	<i>Crataegus viridis 'Winter King'</i>	25'-30'/25'-30'

C. Evergreen Trees for Screening

American Holly	<i>Ilex opaca</i>	40'-50'/20'-40'
Atlas Cedar	<i>Cedrus atlantica</i>	60'/30'
Canadian Hemlock	<i>Tsuga Canadensis</i>	40'-70'/20'-35'
Carolina Hemlock	<i>Tsuga caroliniana</i>	40'-70'/20'-35'
Colorado Blue Spruce	<i>Picea pungens</i>	30'-60'/10'-20'
Eastern Red Cedar	<i>Juniperus virginiana</i>	40'-50'/15'-30'
Foster Holly	<i>Ilex attenuata 'Fosteri'</i>	12'-30'/6'-15'
<i>Evergreen trees for screening continued:</i>		
Leyland Cypress	<i>Cupressocyparis</i>	60'-70'/8'-15'
Loblolly Pine	<i>Pinus taeda</i>	50'-90'/30'-40'
Virginiana Pine	<i>Pinus virginiana</i>	45'-55'/30'-40'
White Pine	<i>Pinus strobus</i>	50'-80'/20'-40'

D. Shrubs for Foundation Plantings and Screening

Burford Holly	<i>Ilex cornuta 'Burfordii'</i>
Carolina Cherry Laurel	<i>Prunus caroliniana</i>
English Holly	<i>Ilex aquifolium</i>
English Laurel	<i>Prunus laurocerasus</i>
Japanese Boxwood	<i>Buxus microphylla japonica</i>
Japanese Yew	<i>Taxus cuspidate</i>
Leatherleaf Viburnum	<i>Viburnum rhytidophyllum</i>
Nellie R. Stevens Holly	<i>Ilex cornuta 'Nellie R. Stevens'</i>
Nandina	<i>Nandina domestica</i>
Silverberry	<i>Elaeagnus pungens</i>

E. Ground Covers

Blueridge St. Johnswort	<i>Hypericum buckleyi</i>
Creeping Juniper	<i>Juniperus horizontalis</i>

Evergreen Candytuft	<i>Iberis sempervirens</i>
Ivy	<i>Hedera</i>
Monkey Grass	<i>Liriope</i>
Periwinkle	<i>Vinca minor</i>
Wintercreeper euonymus	<i>Euonymus fortunei</i>