

ARTICLE 1400

LANDSCAPING, SCREENING AND BUFFERING

SEC. 1400.1 PURPOSE

The purpose of this article is to ensure a minimum of open space and green area as an integral part of new development and to protect the health and welfare of its citizens through the regulation of landscaping of new multi-family, commercial and industrial developments.

- A. Landscaping enhances the environmental and visual character of the community.
- B. Green space requirements preserve and stabilize the area's ecological balance by establishing a healthier environment.
- C. Green areas help to mitigate the negative effects of air and noise pollution by using plants as buffers.

SEC. 1400.2 OBJECTIVES

Landscaping should be an integral part of a development. This article is designed to promote high quality developments, protect property values and public investment in our community. Objectives of this ordinance include, but are not limited to, the following:

- A. To moderate the effects of sun, wind, and temperature changes.
- B. To filter pollutants from the air and release oxygen.
- C. To stabilize soil and prevent corrosion.
- D. To encourage preservation of desirable trees.

SEC. 1400.3 APPLICABILITY

The requirements of this ordinance shall apply to:

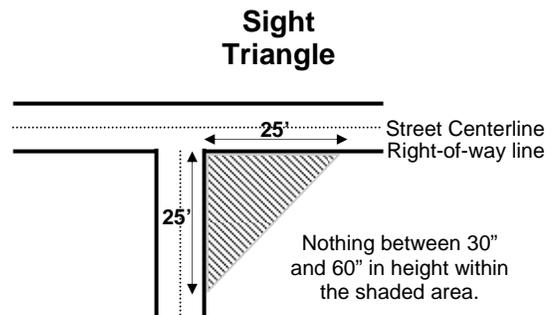
- A. **New development.** All new public, private, and institutional developments.
- B. **Additions.** Additions over ten (10) percent of the gross floor area of the building or more than 2,500 square feet, whichever is more.

SEC. 1400.4 EXEMPTIONS

- A. **Residential.** Single family residential and duplex residential are exempt from these regulations with the exception of Sec. 1400.10 Residential Landscaping.
- B. **Additions.** Additions to existing structures that are under ten (10) percent of the gross floor area of the building or 2,500 square feet, whichever is less, are exempt.
- C. **Previous approval.** Previously approved developments, which have been given a permit to begin building construction are exempt.

SEC. 1400.5 GENERAL PROVISIONS

- A. **Sight distances.** Safe sight distances at intersections and points of access must be maintained. No landscaping shall constitute a hazard to traffic including, but not limited to landscaping located within the sight triangle of an intersection.



- B. **Wheel stops.** Except as provided below, all landscape areas at the front line of off-street parking spaces may be protected from encroachment or intrusion of vehicles through the use of wheel stops.
 - 1. **Minimum height.** Wheel stops shall have a minimum height of six inches (6") above finished grade of the parking area.
 - 2. **Anchoring.** Wheel stops shall be properly anchored and shall be continuously

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maintained in good condition by the property owner.

3. **Location.** Wheel stops shall not be placed in locations of anticipated pedestrian traffic.

C. Soil and climatic conditions. Trees and other vegetation shall be planted in soil and climatic conditions which are appropriate for the growth habits. Plants used in the landscape design shall to the greatest extent be:

1. Appropriate to the conditions in which they are to be planted;
2. Have non-invasive growth habits;
3. Encourage low maintenance, high-quality design; and
4. Be otherwise consistent with the intent of this chapter.

D. Replacement. Vegetation planted or preserved according to an approved plan shall remain alive for a minimum of three (3) years from date of certificate of occupancy. Vegetation planted or preserved that does not remain alive for three (3) years shall be replaced with equivalent vegetation. Preserved trees for which credit was awarded but which subsequently die, shall be replaced in accordance to the Tree Preservation Credits table in Sec. 1400.3 Tree Preservation Credits.

E. Irrigation. Required landscaping shall be irrigated by one of the following methods:

1. An underground sprinkling system; or,
2. A hose attachment within 100 feet of all landscaped areas.

SEC. 1400.6 LANDSCAPE PLANS

The landscaping plan is required to address three requirements:

- (1) Street frontage buffer as required in Sec. 1400.7;
- (2) Interior parking lot landscaping as required in Sec. 1400.8; and,
- (3) Perimeter landscaping as required in Sec. 1400.9.

The following information is required on landscape plans and shall be completed by a licensed landscape architect or landscape professional in

order for staff to review for compliance with this article.

A. Existing vegetation. Location, general type and quality of existing vegetation, including specimen trees.

B. Preservation. Existing vegetation to be saved.

C. Protection. Methods and details for protecting existing vegetation during construction and approved sediment control plan, if available.

D. Proposed plants. Locations and labels for all proposed plants.

E. Landscape details. Plant lists or shekels with the botanical and common names, quantity, spacing and size of all proposed landscape improvements such as earth berms, walls, fences, screens, sculptures, fountains, street furniture, lights, and courts or paved areas.

F. Installation details. Planting and installation details as necessary to ensure conformance with all required standards.

G. Sight triangle. The sight triangle, as described in Sec. 1400.5 A Sight Distances, shall be indicated on the plan with a dimensioned shaded area.

H. Three-year guarantee. Guarantee from the developer that all plant materials will be warranted for a period of three (3) years from the time of installation. If any of the material should fail to survive during that period it would be replaced during the appropriate planting season.

SEC. 1400.7 LANDSCAPED STREET FRONTAGE BUFFER

The street frontage buffer is the planting area parallel to the public street right-of-way.

A. Purpose. The landscaped street frontage buffer serves two primary purposes:

1. When a parking lot is located adjacent to a public right-of-way, a strip of landscaping helps shield projecting headlights that may impair the vision of passing motorists or pedestrians therefore creating a safer environment.
2. It also provides an aesthetically pleasing transition from the public right-of-way to private property.

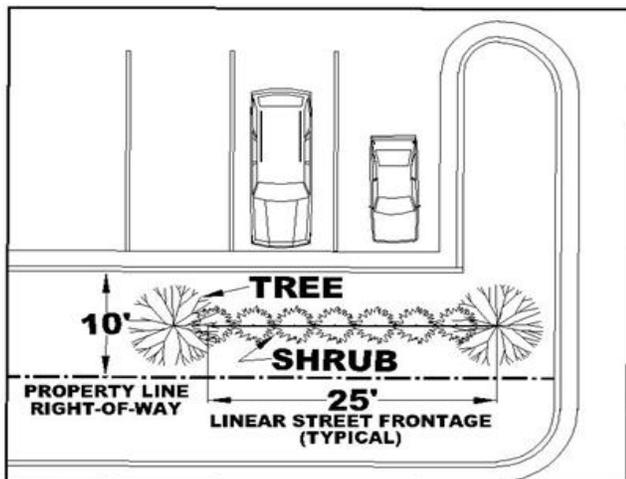
B. Prohibitions. Parking, merchandise display and off-street loading are prohibited in the landscaped street frontage buffer.

C. Requirement. The site plan for any development, other than that exempt in Sec. 1400.4 Exemptions, shall show a landscaped street frontage buffer along all public right-of-ways. The applicant may choose one or a combination of five (5) options illustrated below to meet the particular site constraints of the development.

1. 10' Buffer Strip:

- (a) *Minimum width:* Ten (10) feet.
- (b) *Minimum number of trees required:* One (1) shade tree and one (1) ornamental tree per twenty-five (25) linear feet of street frontage.
- (c) *Minimum number of shrubs:* Ten (10) shrubs per twenty-five (25) linear feet of street frontage. A minimum of 50% of shrubs required shall be evergreen.

10' Buffer Strip Option



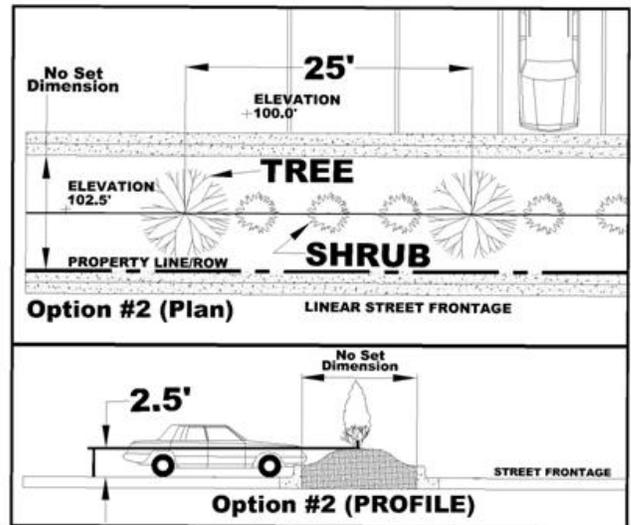
Option #1

(d) *Massing.* Massing is multiple rows of alternating plant materials with a combination of trees and shrubs. Massing is strongly encouraged. The maximum distance between massing is 25 feet. Massing should be integrated into a bed or in a curb to ease maintenance.

2. Earth Berm:

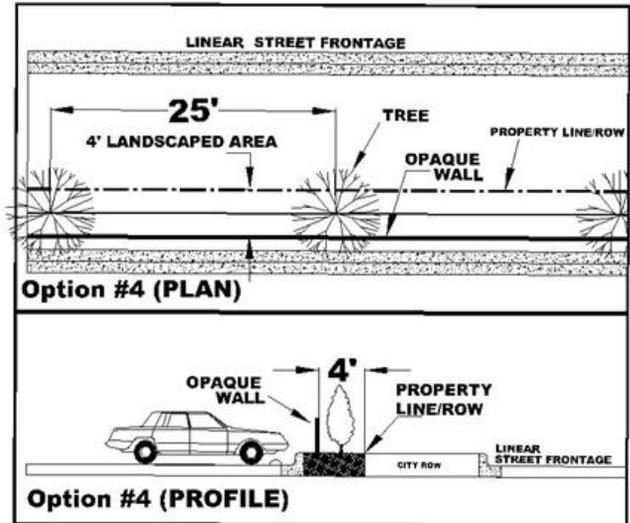
- (a) *Minimum height.* Two and one-half (2 1/2) feet higher than the finished elevation of the parking lot.
- (b) *Minimum number of trees:* One (1) shade tree and one (1) ornamental trees per twenty-five (25) linear feet of street frontage, with no set dimension.
- (c) *Minimum number of shrubs:* Three (3) shrubs per twenty-five (25) linear feet of street frontage, with no set dimension. A minimum of 50% of shrubs required shall be evergreen.
- (d) *Massing.* Massing is multiple rows of alternating plant materials with a combination of trees and shrubs. Massing is strongly encouraged. The maximum distance between massing is 25 feet. Massing should be integrated into a bed or in a curb to ease maintenance.

Earth Berm Option



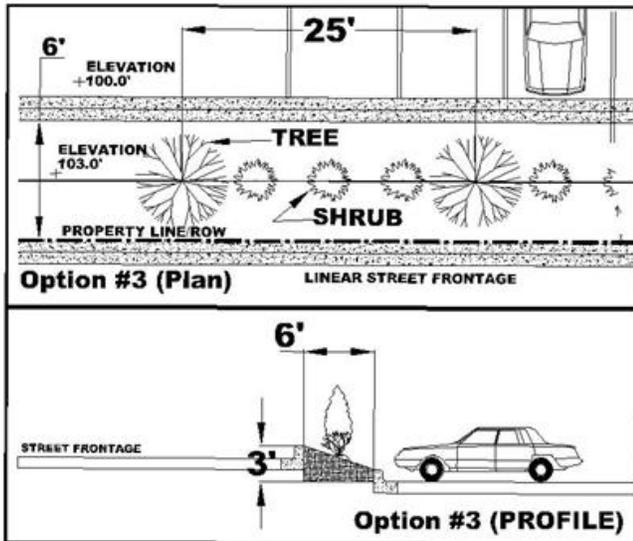
3. 6' Buffer Strip:

- (a) *Minimum width.* Six (6) foot landscaped street buffer with three (3) feet of fall.
- (b) *Minimum number of trees.* One (1) shade tree and one (1) ornamental trees per twenty-five (25) linear feet of street frontage
- (c) *Minimum number of shrubs.* Three (3) shrubs per twenty-five (25) linear feet of street frontage. A minimum of 50% of shrubs required shall be evergreen.
- (d) *Massing.* Massing is multiple rows of alternating plant materials with a combination of trees and shrubs. Massing is strongly encouraged. The maximum distance between massing is 25 feet. Massing should be integrated into a bed or in a curb to ease maintenance.

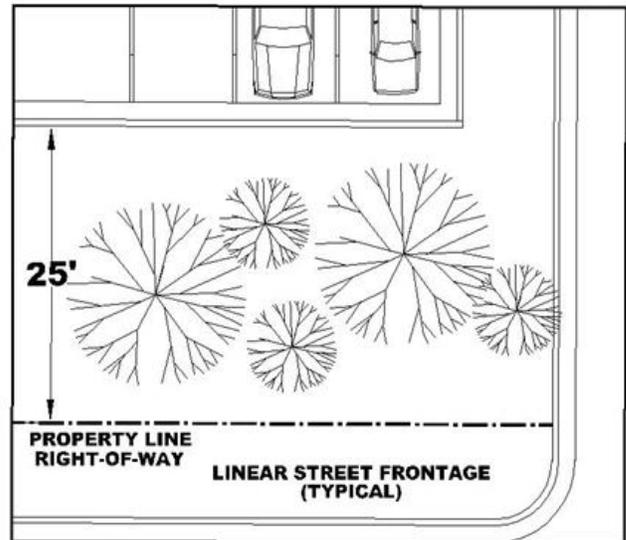


- 5. **25' Buffer Strip:** A landscaped buffer area with existing woodlands maintained in twenty-five (25) foot strips along the street frontage.

6' Buffer Strip Option



25' Buffer Strip Option



Option #5

4. Wall.

- (a) *Minimum height.* Three (3) foot high wall made of brick, stone, or finished concrete.
- (b) *Minimum buffer area.* Four (4) foot buffer area along street right-of-way.
- (c) *Minimum number of trees:* One (1) shade tree per twenty-five (25) linear feet along street frontage.

Wall Option

D. Groundcover.

- 1. **Living material.** Living materials, such as grass, shall make up a minimum of 80% of the groundcover for the street frontage landscaped buffer. 100% of living materials is strongly encouraged.
- 2. **Mulch.** Mulch may make up 20% of the groundcover for the street frontage landscaped buffer. Gravel, concrete, brick

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pavers or other pavement is not appropriate non-living groundcover.

D. Street Tree Corridor Plan. For developments that front on a street designated on the Street Tree Corridor Plan, all trees required for the street frontage buffer shall be the trees indicated on the Street Tree Corridor Plan for that street on which the development fronts.

	Interior Landscaping
3,000-49,999 sq. ft.	8%
50,000-149,000 sq. ft.	10%
150,000 sq. ft or larger	15%

SEC. 1400.8 INTERIOR PARKING LOT LANDSCAPING REQUIREMENTS

Interior parking lot landscaping is the planting areas within and adjacent to parking areas.

A. Purpose. The interior parking lot landscaping requirement serves several purposes:

1. It provides necessary green space to give relief to expansive parking areas with nothing but asphalt.
2. Trees provide shade and serve as windbreaks.
3. Planting islands assist with vehicular circulation.

B. Applicability. Interior parking lot landscaping requirements apply to all parking lots that are required in the Zoning Code, Article 501 Parking and Loading to have 14 or more parking spaces.

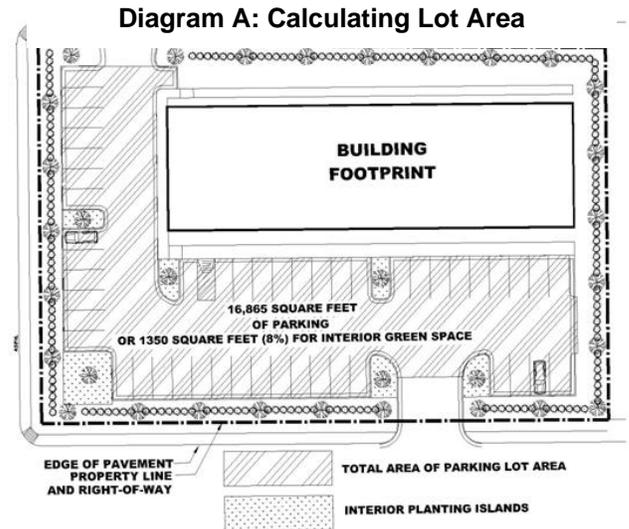
C. Requirement. The site plan shall show interior parking lot landscaping. A sliding scale to determine the amount of landscaping area per lot has been included in order for the applicant to include these landscaping requirements as an integral part of the site development.

1. **Standard.** Percent (%) of the total area of parking lot dedicated to interior planting shall be as follows:

Interior Landscaping Requirements	
Total Area of Parking Lot	Minimum % Dedicated to

2. Calculating Lot Area. Diagram A, Calculating Lot Area, illustrates what areas of the lot are considered when determining the total area of the parking lot. The total amount of landscape area for the interior lot is determined by figuring 8%, 10%, or 15% of the total parking lot area as explained below.

- (a) *Included in calculation.* The square footage of all areas within the parking lot's perimeter are counted, including the planting islands required, curbed areas, corner lots, parking spaces and interior driveways and aisles.
- (b) *Excluded from calculation.* Driveways and aisles with no parking spaces located on either side, buildings, street frontage buffer, and perimeter strips are not counted. Landscaped areas outside the parking lot may not be used to meet the interior planting requirement



3. Planting islands. Planting islands are required as a part of the landscape area percentage in the interior parking lot area.

- (a) *Dimensions.* The dimensions of a parking island must be a minimum of nine (9) feet by nineteen (19) feet, the same as a parking space, and must be curbed to protect landscaping and trees.

Parking Island Dimensions

- (b) *Minimum number required.* No more than 15 parking spaces shall be permitted in a row without interruption by a parking island. If 13 or more spaces remain, a parking island is required. In parking lots over 150,000 square feet, the number of parking islands can be reduced but the total square footage of landscape area must remain according to the requirements.
4. **Trees.** Trees are required to be planted in the interior parking area to offer shading from the heat and sun.
- (a) *Minimum number required.* One (1) shade tree per planting island is required for the interior parking area.
- (b) *Location.* These trees shall be planted within the island.
- (c) *Clearance.* Four-foot (4') clearance shall be left for car doors to open from adjacent parking spaces.
5. **Groundcover.** All interior parking lot landscaped areas not dedicated to preservation of existing vegetation shall be landscaped with groundcover.
- (a) *Living material.* Living materials, such as grass, shall make up a minimum of 60% of the groundcover for the interior parking lot landscaping. 100% of living materials is strongly encouraged.
- (b) *Non-living material.* Non-living materials, such as mulch or decorative rock, may make up 40% of the

groundcover for the interior parking lot landscaping. Gravel, concrete, brick pavers or other pavement is not appropriate non-living groundcover.

- D. **Vehicular display areas.** Applicants shall select one of the following options for vehicular display areas:

1. **Compliance with standard.** Comply with the interior parking lot landscaping requirements described in this section; or,
2. **Increase street frontage buffer.** Increase the required street frontage buffer to 15' wide and install the number of trees required for the interior landscape requirements within the street frontage buffer.

**SEC. 1400.9 PERIMETER LANDSCAPING
OTHER THAN STREET
FRONTAGE**

Perimeter landscaping is a peripheral planting strip that separates uses.

- A. **Purpose.** Perimeter landscaping requirements

1. Define parking areas;
2. Prevent two adjacent lots from becoming one large expanse of paving;
3. Provides vegetation in densely developed areas; and,
4. Enhances the appearance of individual properties.

- B. **Requirement.** The site plan for any development, other than that exempt in Sec. 1400.4 Exemptions, shall show perimeter landscaping, other than the landscaped street frontage buffer.

1. **Width.** A five (5) foot landscaped strip is required along the side and rear lot lines of a development. This perimeter landscaping strip will be in addition to landscaped street frontage buffer required in Subsection 1400.6(A).
2. **Minimum number of trees.** One (1) tree per fifty (50) linear feet.
3. **Groundcover.** All perimeter landscaped areas not dedicated to preservation of existing vegetation shall be landscaped with groundcover.

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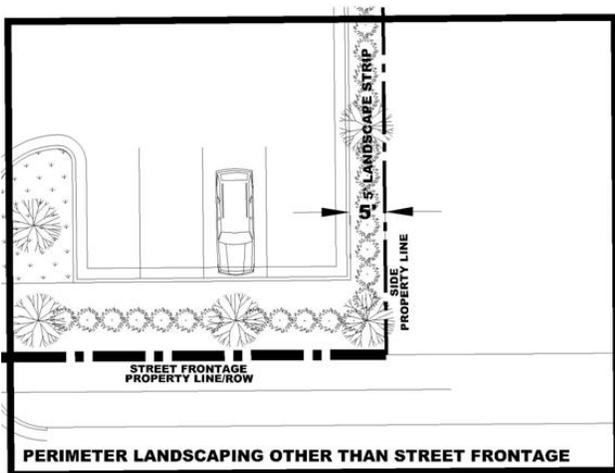
(a) *Living material.* Living materials, such as grass, shall make up a minimum of 80% of the groundcover for the perimeter landscaping. 100% of living materials is strongly encouraged.

(b) *Non-living material.* Non-living materials, such as mulch or decorative rock, may make up 20% of the groundcover for the perimeter landscaping. Gravel, concrete, brick pavers or other pavement is not appropriate non-living groundcover.

C. Vehicular access. The perimeter landscaping requirement does not preclude the need for vehicular access to be provided between lots.

D. Adjacent properties. The five (5) foot perimeter strip is required for each development regardless if one is already in place from an adjacent, developed lot.

E. Pavement. No pavement may extend within five (5) feet of the property line on any lot unless it is included with an ingress/egress location.



SEC. 1400.10 RESIDENTIAL LANDSCAPING

A minimum of one shade tree or two ornamental trees, as specified by 1400.11 B. Minimum size, shall be planted in the front yard of each new residential lot in the RE, R1 and R2 residential districts.

SEC. 1400.11 LANDSCAPE INSTALLATION REQUIREMENTS

A. Location.

1. **Drainage.** Trees shall not be placed where they interfere with site drainage.
2. **Overhead utilities.** Trees shall not be placed where they require frequent pruning in order to avoid interference with overhead power lines. In such locations, small ornamental trees are encouraged.
3. **Water lines.** Landscaping shall be installed at locations that avoid placement directly above water lines.
4. **Fire hydrants.** Landscaping shall not be placed within three (3) feet of a fire hydrant.

B. Minimum size. Immediately upon planting, trees shall meet the minimum requirements:

Minimum Tree Size	
Type	Minimum size
Ornamental trees	1.5" caliper
Evergreen trees	6' in height
Shade	2.5" caliper
Shrubs	18" in height

C. Species Mix. When more than ten (10) trees are to be planted to meet the requirements of this ordinance, a mix of species shall be provided. The number of species to be planted shall vary according to the overall number of trees required to be planted. The minimum number of species to be planted is listed in the table below. Species shall be planted in proportion to the required mix. This species mix shall not apply to areas of vegetation required to be preserved by law. A minimum of 75% of all required trees shall be shade trees.

Required Species Mix	
Required Number of Trees	Minimum Number of Species
11-20	2
21-30	3
31-40	4
41+	5

D. Spacing.

Spacing			
Plant Size	From Corners	From Walls	Distance for mass planting

Recommended Shrubs			
EVERGREEN			
Creeping Juniper		Japanese Holly	
Shore Juniper		Pfitzer Juniper	
Foster Holly		Helleri Holly	
Youpan Holly		Inkberry Holly	
Abelia		Euonymus	
Nandina		Viburnum Wintergreen	
Barberry			
DECIDUOUS			
Mugo Pine		Japanese Barberry	
Viburnum		Flowering Quince	
Cotoneaster		Spirea	
Azalea		Forsythia	
Small	8'	12'	6-12'
Medium	12'	16'	16-30'
Large	16'	20'	30-40'

Recommended Trees		
Common Name	Mature Height (in feet)	Growth Rate
SHADE		
Red Maple	40-60	Medium/Fast
Sugar Maple	60-75	Slow/Medium
Amur Maple	15-20	Medium
Tident Maple	25-35	Medium
Green Ash	50-60	Fast
White Ash	50-80	Medium
Pin Oak	60-75	Fast
Red Oak	60-75	Fast
Chinese Elm	30-40	Medium
Hackberry	40-60	Medium/Fast
Bald Cypress	50-70	Medium
Thornless Honey Locust	50-75	Medium
Chinese Pistache	25-35	Medium
Japanese Zelcova	40-50	Medium/Fast
EVERGREEN		
American Holly	40-50	Slow/Medium
Loblolly Pine	60-90	Fast
Japanese Black Pine	50-70	Slow
Norway Spruce	40-60	Medium
ORNAMENTAL		
Eastern Redbud	20-30	Medium
Dogwood	20-25	Medium
Golden Raintree	30-40	Medium/Fast
Washington Hawthorn	25-30	Medium
Yoshino Cherry	20-40	Fast
River Birch	40-70	Medium/Fast
Ginkgo	80-100	Slow
Japanese Red Maple	15-20	Slow/Medium
Serviceberry	15-20	Medium
Tulip Poplar	60-150	Medium

SEC. 1400.12 RECOMMENDED TREES AND SHRUBS

A. Criteria. The following lists indicate plantings, which will meet the landscaping requirements of this chapter. The lists are by no means comprehensive and are intended merely to suggest the types of flora which would be appropriate for screening and shading purposes. Plants were selected for inclusion on these lists according to four principal criteria:

1. General suitability for the climate and soil conditions for this area.
2. Unconstrained maintenance.
3. Tolerance of city conditions.
4. Readily available from area nurseries.

B. Plant selection. When selecting new plantings for a particular site, a developer should first consider the type of plants which are thriving on or near that site. However, if an introduced species has proven highly effective for screening or shading in this area, it too may be proper selection.

SEC. 1400.13 TREE PRESERVATION CREDITS

- A. Healthy trees.** No tree preservation credits will be allowed for any dead tree, any tree in poor health or any tree subjected to grade alterations.
- B. Protection during construction.** Trees shall be protected during construction from:
 - 1. Mechanical injuries to root, trunk and branches;
 - 2. Injuries by chemical poisoning;
 - 3. Injuries by excavation; and
 - 4. Injuries by paving.
- C. Reduction options.** If an applicant is preserving trees, he may use the existing trees as credit either toward a reduction in parking requirements or in a reduction of the number of trees required, as described below.

- 1. **Reduction of parking requirements.** To allow an existing or new development to preserve trees within or adjacent to a parking lot, the number of required off-street parking spaces may be reduced by the Community Development Director or his or her designee by up to 10%.
- 2. **Reduction of required trees.** Preservation and protection of existing trees on the lot may be credited toward the tree planting requirements. Credit for preserved trees shall be permitted at the following rates:

Tree Preservation Credits	
Diameter of Preserved Tree	Number of Trees Credited
4 – 7.9 inches	1 shade tree
8 – 22.9 inches	2 shade trees
23 – 29.9 inches	3 shade trees
30+ inches	4 shade trees

SEC. 1400.14 ENFORCEMENT AND MAINTENANCE

- A. Final Occupancy Permit.** The Community Development Director or his or her designee has the authority to enforce the requirements of this chapter. Final occupancy permits and/or final plats will be held for those who fail to complete landscaping requirements. Any

landscaping in excess of \$2500.00 (materials and labor) shall comply with Sec. 1700.3 Guarantee of Completion and Installation. A contract with costs for materials and labor from a recognized landscaping company must be approved by the Community Development Director prior to the issuance of a certificate of occupancy.

- B. Maintenance.** Once approved, the applicant is required to guarantee the plants for 36 months or the owner must replace them. The property owner shall maintain all trees and vegetation.

SEC. 1400.15 ALTERNATIVE METHODS OF COMPLIANCE

An application for alternative landscaping schemes is justified only when one or more of the following conditions apply:

- A. Space limitations.** The site involves space limitations or unusually shaped parcels.
- B. Site conditions.** Topography, soil, vegetation, or other site conditions are such that full compliance is impossible or impractical.
- C. Change of use.** Due to a change of use of an existing site, the required buffer yard is larger than can be provided.
- D. Safety.** Safety considerations require a change.

SEC. 1400.16 SCREENING

- A. Standards.** Every development shall provide sufficient screening that meets these standards:
 - 1. Adjacent properties.** Neighboring properties are shielded from any adverse external effects of that development.
 - 2. Developing property.** The development is shielded from the negative impacts of adjacent uses such as major street or railroads.
 - 3. Dumpsters.** Trash dumpsters are enclosed with opaque screening materials on all sides.
- B. Requirements.** Screening required shall be determined by the Table of Screening Requirements.

Table of Screening Requirements (Letters indicate screen type as described in Subsection C)					
	SF	Duplex/ Townhouse	MF	Commercial	Industrial
SF	None	B	A	A	A
Duplex/ Townhouse	C	None	C	A	A
MF	A	C	None	B	A
Commercial	A	A	B	None	C
Industrial	A	A	A	C	None

C. Description of screens. The following three types of screens are hereby established and are used as the basis for the Table of Screening Requirements in Sec. 1400.14 B Requirements.

- 1. Type A: Opaque Screen.** An opaque screen is intended to exclude all visual contact between uses and to create a strong impression of spatial separation.
 - (a) *Minimum height.* The screen shall be opaque from the ground to a height of at least six (6) feet, with intermittent visual obstructions from the opaque portion to a height of at least 20 feet.
 - (b) *Materials.* The opaque screen may be composed of a wall, fence, landscaped earth berm, planted vegetation, or existing vegetation.
 - (c) *Vegetative screens.* Compliance of planted vegetative screens or natural vegetation will be judged on the basis of the average mature height and density of foliage of the subject species, or field observation of existing vegetation. The opaque portion of the screen shall be opaque in all seasons of the year. At maturity, the portion of intermittent visual obstructions should not contain any completely unobstructed openings more than ten (10) feet wide. The portion of intermittent visual obstructions may contain deciduous plants.
- 2. Type B: Semi-Opaque Screen.** The semi-opaque screen is intended to partially block visual contact between uses and to create

a strong impression of the separation of spaces.

- (a) *Minimum height.* The screen shall be opaque from the ground to a height of three (3) feet, with intermittent visual obstruction from above the opaque portion to a height of at least 20 feet.
- (b) *Materials.* The semi-opaque screen may be composed of a wall, fence, landscaped earth berm, planted vegetation, or existing vegetation.
- (c) *Vegetative screens.* Compliance of planted vegetative screens or natural vegetation will be judged on the basis of the average mature height and density of foliage of the subject species or field observation of existing vegetation. At maturity, the portion of intermittent visual obstructions should not contain any completely unobstructed openings more than 10 feet wide. The zone of intermittent visual obstruction may contain deciduous plants.

3. Type C: Broken Screen. The broken screen is intended to create the impression of a separation of spaces without necessarily eliminating visual contact between the spaces.

- (a) *Height.* The broken screen shall be composed of intermittent visual obstruction from the ground to a height of at least 20 feet.
- (b) *Materials.* The broken screen may be composed of a wall, fence, landscaped earth berm, planted vegetation, or existing vegetation.
- (c) *Vegetative screens.* The screen may contain deciduous plants.