

**ARTICLE XII
LANDSCAPE REGULATIONS**

12.1 - GENERAL PROVISIONS

12.1.1 INTENT:

It is the intent of these regulations to make Johnson City a more beautiful, environmentally sound, and more memorable place through the requirement of new landscaping and the preservation of existing landscaping. The landscaping of parking areas, street yards, and buffer yards is intended to break-up large expanses of asphalt to reduce heat build-up, control erosion, modify the rate of storm water run-off, increase groundwater recharge, filter the air, control water and light pollution, and lessen the impact of high intensity uses on the community.

12.1.2 APPLICABILITY:

- A. All new development, excluding active agricultural use and the individual development of one single-family or two-family detached dwelling unit, shall comply with Section 12.1, Landscape Regulations. All development located in the MX zone shall be subject to the landscape provisions of the MX zone.
- B. Any parking lot constructed as a result of the expansion of an existing development shall comply with Section 12.1, Landscape Regulations.
- C. Expansion of all existing development which, after the passage of this ordinance, exceeds twenty-five (25) percent of the existing gross floor area (G.F.A.) or any change of use which results in the property becoming a higher impact use, shall comply with the following:
 1. The site shall be modified to provide at least twenty-five (25) percent of the amount of landscaping which would be required for a comparable new development. The placement of the landscaping shall not be required to meet Section 12.1. If it is not feasible to meet the quantity or placement requirements, the required landscaping with the approval of a detailed landscape plan by the City Forester of designee.
 2. Any change in use, which results in a higher impact, shall require buffers as specified in section 12.4.

12.1.3 LANDSCAPE PLAN:

- A. A generalized landscape plan shall be submitted as part of the site plan and shall contain adequate information to determine compliance with this Code. The following elements shall be shown on the landscape site plan:

- Title, name of owner, date, graphic scale, and north arrow;

- Name and phone number of person or firm responsible for landscape plan;
- Common name and size of plant materials to be used;
- Boundary lines and lot dimensions;
- Zoning of site and adjoining properties;
- Proposed contours at 5 feet intervals or less;
- Proposed building locations;
- Location of existing and proposed streets, driveways, sidewalks, and parking areas;
- Location, sizes, and spacing of plant material;
- Size and location of landscaped areas, islands, screening, and buffers;
- Planting detail(s);
- Location, species, size diameter breast height (dbh), and location of root zone protection area of any tree(s) to be preserved;
- The location and extent of utilities, including electric, telephone, cable TV, natural gas, utility poles, and interior lighting poles.

B. Landscape plans shall be designed to assure adequate sight distance and maintain appropriate clear sight triangles at all entrances and exits to developments and parking areas.

C. Review Fee

12.1.4 TREE PRESERVATION:

It is the goal of the city to encourage and facilitate the preservation of healthy trees wherever possible. The following incentives are designed to achieve that goal:

- A. Preservation of healthy trees, six (6) inches dbh or greater, shall be credited toward the required number of trees per the following ratio: for every six (6) inches of diameter preserved, a credit of one tree shall be granted, provided credit is limited to twenty-five (25) percent of required trees. The City Forester shall approve any tree to be preserved for which credit is to be given.
- B. Existing trees with a diameter greater than six (6) inches dbh, may be relocated within the site and shall be credited toward the required number of trees per the following ratio: for every four (4) inches of diameter preserved, a credit of one tree shall be granted, provided credit is limited to fifty (50) percent of required trees. The City Forester shall approve any tree to be relocated for which credit is to be given.
- C. To facilitate the preservation of a specimen tree, setback requirements may be reduced up to twenty-five (25) percent by the Development Coordinator or designee.
- D. To facilitate the preservation of a specimen tree in the subdivision of land, lot sizes may be reduced up to twenty-five (25) percent of the minimum lot size for that district, provided no lot is reduced so as to require a

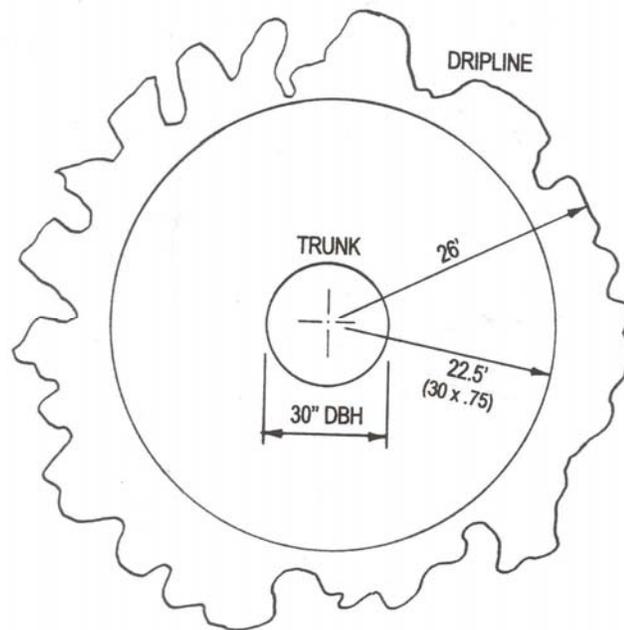
variance to be buildable, and the required density of the district is maintained for each phase.

12.1.5 TREE PROTECTION DURING CONSTRUCTION:

In order to receive credit for an existing tree or grove of trees, a critical root zone (CRZ) shall be established. The critical root zone shall have a minimum area equal to the distance from the trunk to the dripline or the distance derived from the CRZ calculation, whichever is greater.

$$\text{CRZ calculation} = (\text{tree dbh in inches} * .75 \text{ feet})$$

Example: a tree with a thirty (30) inch dbh would require a minimum CRZ of 22.5 feet or the distance from the trunk to the dripline, whichever is greater.



In this example the CRZ is determined to be the distance from the trunk to the dripline due to the fact that the distance derived from the CRZ calculation is less than the distance to the dripline.

The critical root zone shall not be disturbed by construction activity, excluding sodding or the placement of other landscape materials. This area shall be barricaded and marked with signage during construction. Curbing placed around preserved trees shall be located no closer than the edge of the critical root zone. Damage to trees, including injuries resulting from chemical poisoning, concrete wash water, construction equipment, soil compaction, grading, paving and/or other mechanical injuries to the roots, trunk, or branches of the tree that will result in their death within one year of construction shall negate any credit given for preservation.

12.1.6 MIXTURE OF TREES:

Sites with required new trees of ten (10) or more, excluding buffer trees, shall provide the following variety of trees:

Number of Required Trees	Minimum Required Variety of Trees	Maximum Percent of Any Variety
10-19	2	65%
20-29	3	50%
30-39	4	40%
40+	5	35%

12.1.7 LISTS OF ACCEPTABLE TREES:

The City Forester shall keep a list of acceptable shade trees and buffer trees. Shade trees and Evergreen buffer trees are separated into two groups, Type 1 and Type 2. Type 1 trees are those that have a mature height of thirty (30) feet or more. Type 2 trees are those that have a mature height of less than thirty (30) feet. A petition, stating justification, may be made to the Tree and Appearance Board to add or remove a tree from the approved lists.

12.1.8 SIZE AND SPACING REQUIREMENTS:

At the time of planting, Type 1 shade trees shall have a minimum trunk diameter of two (2) inches measured at six (6) inches above ground level. Type 2 shade trees shall have a minimum trunk diameter of one and one-half (1 ½) inches above ground level. Type 1 buffer trees shall have a minimum height of five (5) feet. Type 2 buffer trees shall have a minimum height of four (4) feet All required shade trees and buffer trees shall have a minimum horizontal separation from other required trees of ten (10) feet. All trees shall be placed no closer than four (4) feet from any curb or sidewalk. All newly planted trees shall have a minimum radius of three (3) feet located around the base of the trunk containing mulch.

Screen and buffer shrubs shall have a minimum height of two and one-half (2.5) feet and shall have a maximum spacing of five (5) feet. Screen and buffer shrubs shall have a mature height of between six (6) and twelve (12) feet. The minimum size of shrubs used to create a parking lot screen shall be eighteen (18) inches and shall be able to achieve a minimum mature height of four (4) feet.

12.1.9 PLANT QUALITY STANDARDS:

Plant material installed to satisfy the requirements of this Article shall conform to the plant quality standards of the most recent edition of the American Standard for Nursery Stock (ANSI Z60.1), published by the American Association of Nurserymen. Trees with co-dominant stems shall not count toward meeting the requirements of this Article.

12.1.10 MAINTENANCE:

- A. Failure to maintain landscaped areas as required shall be considered a violation of this Article. The property owner shall be responsible for the

routine maintenance of all required plant material. Maintenance activities include but are not limited to watering, pruning, mulching, mowing, weeding, and fertilizing. All landscaped areas must present a healthy, neat and orderly appearance and shall be kept free from refuse and weeds. Trees or shrubs that are dead, diseased, or otherwise deemed by the City Forester to be in an unsafe condition shall be removed by the property owner and replaced with new plantings provided that the new plantings are in compliance with this Article.

- B. Walls and fences used as screening structures shall be repaired or replaced so that they remain in a structurally sound condition.
- C. Shrubs used to create a parking lot screen shall not be pruned to a height less than three (3) feet. Shrubs used in buffer yards shall not be pruned to a height less than five (5) feet.
- D. Tree topping of any required tree is prohibited and may, at the determination of the City Forester, negate a tree from being used to satisfy the requirements of this Article.

12.1.11 REMOVAL OF REQUIRED PLANT MATERIAL:

A property owner shall notify and receive approval from the City Forester or designee before any healthy tree or shrub is removed. Notification is not required for the removal of dead or diseased plant material. All plant material must be replaced in accordance with the requirements of Article XII.

12.1.12 MODIFICATIONS:

The City Forester shall have the authority to grant a request for modification of any requirements in this Article upon receipt of a written request, which outlines the rationale for the modification. The City Forester shall review each request and grant a modification only: under unusual circumstances such as extreme topography or geology, which cause an unreasonable hardship; or, when an innovative or alternative approach can be made which still meets the intent and purpose of this Article.

12.1.13 APPEALS:

Any person aggrieved by the administration, interpretation, or enforcement of this Section may appeal to the Board of Zoning Appeals within 30 days of a decision of the City Forester or designee.

12.1.14 VIOLATIONS:

Any violation of the terms of this Article shall be a violation of the zoning ordinance, and shall be subject to the penalties established for violations established in the zoning ordinance.

12.2 - LANDSCAPE YARDS

12.2.1 APPLICABILITY:

Landscape Yards are required in all zones, excluding single-family and two-family detached dwelling units.

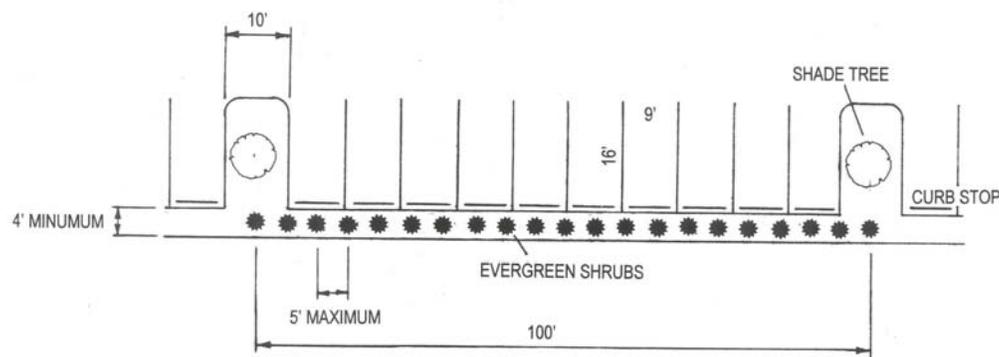
12.2.2 PLANTING REQUIREMENTS:

A landscape yard shall be established along all abutting streets. Minimum width shall be ten (10) feet, excluding those zones where the front yard setback is less than ten (10) feet, in which case landscape yard width shall equal the front yard setback or ten (10) feet, whichever is less. One (1) Type 1 shade tree from the approved list, or two (2) Type 2 shade trees shall be provided per fifty (50) linear feet, or any fraction thereof, of street frontage. Trees may be spaced or grouped at the discretion of the developer in the landscape yard. Required trees shall not be placed in street rights-of-way. When the landscape yard occurs near utility lines, Type 2 shade trees, specified for use near power lines, shall be planted at a rate of one (1) tree for each fifty (50) feet of frontage occurring near utility lines.

12.2.3 EXCEPTION:

When parking spaces in a parking lot abut a street right-of-way, the landscape yard may be replaced by a parking lot screen, which is a minimum of four (4) feet in width with tire stops in the parking lot to prevent vehicles from overhanging the curb and damaging the landscaping. Parking spaces adjacent to the parking lot screen may be reduced by two (2) feet in length. The screen shall include one (1) Type 1 shade tree for every one hundred (100) feet of frontage. The trees may be situated in a landscape island which is connected to the landscape yard and shall have a minimum area of 160 square feet. Parking lot screens shall be provided in one of the following configurations:

- A. A brick or masonry wall which, measured from the edge of the parking lot, is a minimum of three (3) feet in height.
- B. A row of evergreen shrubs spaced a maximum of five (5) feet on center. The entire landscape yard containing shrubs used as a parking lot screen shall be mulched and shall not have a slope exceeding a ratio of 2:1.



- C. Adequate access for pedestrians to enter the development shall be provided in the form of walkways at appropriate intervals.

12.3 - PARKING AREA LANDSCAPING

12.3.1 APPLICABILITY:

Off-street parking areas of ten (10) spaces or more, excluding parking garages, shall be landscaped in all zoning districts.

12.3.2 PLANTING REQUIREMENTS:

Thirty-five (35) square feet of interior landscaped area shall be provided per parking space. One (1) Type 1 shade tree shall be provided per ten (10) parking spaces, or any fraction thereof. A maximum of thirty (30) percent of the required Type 1 shade trees may be replaced by Type 2 shade trees at a ratio of one and one-half (1 1/2) Type 2 trees for each Type 1 tree replaced.

12.3.3 LANDSCAPED AREA REQUIREMENTS:

Parking area landscaping shall be located within the parking area or the area abutting the parking area not extending more than fifteen (15) feet beyond any paved surface including sidewalks. All interior landscaped areas shall be a minimum of three-hundred twenty (320) square feet except that those landscape islands which terminate a single row of parking abutting the building or the edge of the parking lot may be a minimum of one hundred sixty (160) square feet in area. The minimum dimension of any portion of an interior landscaped area shall be nine (9) feet. All measurements for landscape islands shall be made from the back of the curb. A minimum of one (1) required tree shall be located in each landscaped area. All landscaped areas shall be surrounded with a six (6) inch high concrete raised curb. Small curb breaks are encouraged for drainage into or out of a planted area. If asphalt, concrete, or sub-base exists where the landscaped area is to be located, it shall be removed down to uncompacted soil prior to planting.

12.3.4 LOCATION:

No vehicle parking space shall be located more than seventy-five (75) feet from the trunk of one (1) shade tree. A tree, preserved in accordance with Subsection 12.1.5, may be used to satisfy this requirement.

12.3.5 HEAD-ON PARKING:

Where two rows of head-on parking are separated by a landscaped area, not less than nine (9) feet wide, or where parking spaces abut a perimeter landscaped area, said parking spaces may be shortened by two (2) feet from the Parking Design Standards found in this Code.

12.3.6 LANDSCAPE INCENTIVE:

Landscaping provided in excess of that required by this Code shall reduce the required parking in Section 11.2 by the following amount: one (1) parking space may

be eliminated for every Type 1 shade tree provided in excess of the required amount. Reduction of parking shall not exceed ten (10) percent of the total required parking.

12.3.7 MULTI-FAMILY PARKING SCREENING:

A visual screen in the form of a masonry wall, wood fence, or a landscaped area with a minimum width of four (4) feet capable of creating an opaque screen with shrubs spaced a maximum of five (5) feet on center shall be provided for all multi-family residential parking areas to prevent public view from any street right-of-way (excluding alleys) or adjoining residential property.

12.4 - BUFFER YARDS

12.4.1 APPLICABILITY:

Buffer Yards are required where the development of a higher impact use abuts a lower impact use, as classified in Subsections 12.4.4 and 12.4.5. The Board of Zoning Appeals, the Johnson City Regional Planning Commission, or the Johnson City Board of Commissioners may increase Buffer Yard requirements where it has approval authority.

12.4.2 EXCEPTIONS:

Any property with a zoning designation of B-2 or MX is exempt from the requirements of Section 12.4 where it abuts the same zoning district.

12.4.3 IMPACT CLASSIFICATION:

A. No impact (N):

All permitted uses in the following zones are considered to have no impact, unless a specific use is listed elsewhere; A-1, R-1, R-2, R-2A, R-2B, R-2C, and RP-2. The following uses shall be considered to have no impact, regardless of zoning classification; cemeteries, golf courses without night lighting, parks, single-family and two-family residential.

B. Low impact (L):

All permitted uses in the following zones are considered to have a low impact, unless a specific use is listed elsewhere; B-1, MX-1, R-3, R-4, R-5, R-6, RM-3, RM-4, RM-5, RO-1, RO-2, RP-3, RP-4, RP-5, and RTP. RM-3, RM-4, and RM-5, shall comply with Subsection 6.11.2.3. The following uses shall be considered to have a low impact, regardless of zoning classification; churches, day-care centers, community recreational facilities, neighborhood recreational facilities, public buildings, schools, and swim clubs.

C. Medium impact (M):

All permitted uses in the following zones are considered to have a medium impact, unless parking total exceeds four hundred fifty (450) spaces or a specific use is listed elsewhere; B-2, B-3, B-4, B-5, PB, BP, I-1, MS-1, and MX. The following uses shall be considered to have a medium

impact, regardless of zoning classification; gasoline service stations, neighborhood convenience stores and centers, parking garages (without first floor retail or office), and self-storage or mini-warehouses.

D. High impact (H):

All permitted uses in the following zone are considered to have a high impact, unless a specific use is listed elsewhere; I-2. The following uses shall be considered to have a high impact, regardless of zoning classification; junk yards, outdoor storage yards, any property with parking for more than four-hundred fifty (450) cars, and off-site parking areas located in residential zones.

12.4.4 BUFFER TYPE:

Required buffer types are determined according to the following chart:

		Proposed Use Classification			
		N	L	M	H
Adjoining Use Classification	N	none	1	2	3
	L	none	none	1	2
	M	none	none	none	1
	H	none	none	none	none

Example: A new strip shopping center located in a B-4 zone is considered a medium impact use. Directly behind the shopping center is a residential neighborhood zoned R-2, a no impact use. The shopping center is required to provide a type 2 buffer yard.

12.4.5 LOCATION REQUIREMENTS:

A buffer yard shall be provided by the Proposed Use along the rear and side property lines abutting a lesser impact Adjoining Use. Where a development occurs on only a portion of a tract, the City Forester may approve the placement of the buffer yard at the edge of the development or at a location between the property line and the development that maximizes the effectiveness of the buffer yard. Buffer yards shall not exceed a 2:1 slope.

12.4.6 PLANTING REQUIREMENTS:

Buffer plantings shall be spaced so that a uniform screen is provided. All wood fences shall have the finished side facing outward. The following chart describes the planting requirements for every 100 feet, or fraction thereof, of buffer yard:

MINIMUM BUFFER REQUIREMENTS <u>FOR EVERY 100 FEET OF BUFFER YARD</u>		
Buffer Type	Buffer Width (ft.)	Plant Material Options
TYPE 1	15	a) 10 Type 1 Evergreen Trees
	10	b) 6 ft. Wood Fence or Masonry Wall and 6 Type 1 Evergreen Trees
TYPE 2	20	a) 14 Type 1 Evergreen Trees
	15	b) 6 ft. Wood Fence or Masonry Wall and 8 Type 1 Evergreen Trees
TYPE 3	35	a) 18 Type 1 Evergreen Trees
	25	b) 8 ft. Wood Fence or Masonry Wall 12 Type 1 Evergreen Trees
TYPE 4	35	a) 8 ft. Wood Fence or Masonry Wall and 18 Type 1 Evergreen Trees

12.4.7 **BUFFER TREE SUBSTITUTIONS**

Type 2 evergreen trees and evergreen shrubs may be used to substitute a maximum of fifty percent (50%) of the required number of Type 1 evergreen trees. Type 1 evergreen trees shall be substituted at a rate of one (1) Type 1 evergreen tree for every one and a half (1 ½) Type 2 evergreen trees or three (3) evergreen shrubs. Deciduous trees can be used to substitute up to 35% of the total number of required buffer trees. Deciduous trees used to replace Type 1 evergreen trees shall be selected from the Type 1 shade tree list. Deciduous trees used in place of Type 2 evergreen trees shall be selected from the Type 2 shade tree list. A maximum of fifty percent (50%) of the required buffer shrubs may be replaced by deciduous shrubs provided that they meet the mature plant height requirements stated in Section 12.1.8.

12.4.8 **MIXTURE OF BUFFER TREES**

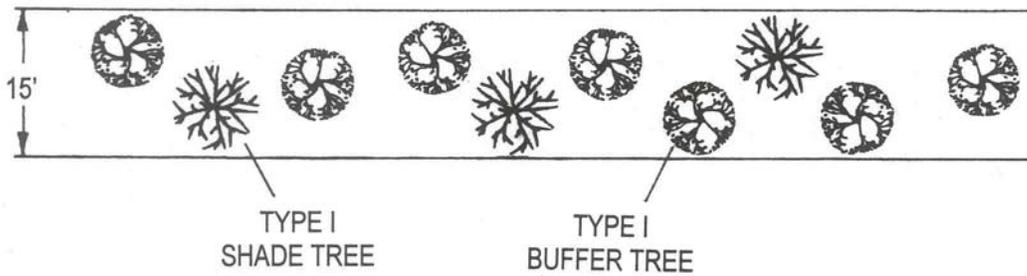
Sites with required buffer trees of ten (10) or more shall provide the following variety of trees:

Number of Required Buffer Trees	Minimum Required Variety of Buffer Trees	Maximum Percent of Any Variety
10-40	2	65%
41-100	3	50%
101+	4	35%

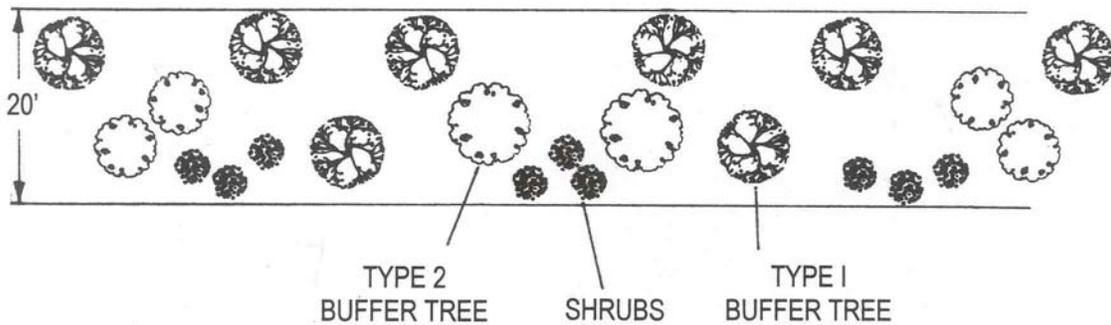
12.4.9 BUFFER YARD DIAGRAMS

A buffer planting plan can be configured in many ways. Plant selection and spacing should be based on each plant's growing habit and site characteristics. The following illustrations are examples of buffer configurations based on the type of buffer required:

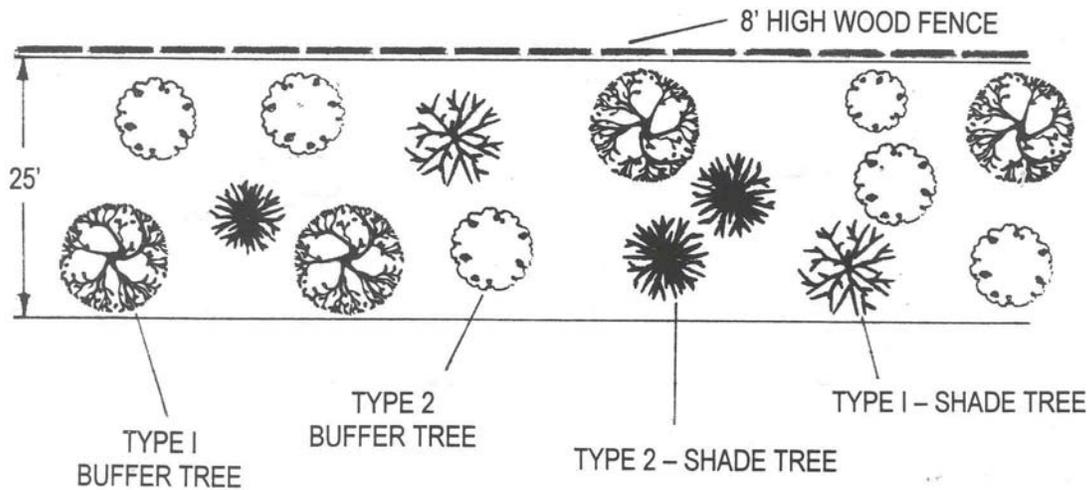
Type I Buffer Example



Type 2 Buffer Example



Type 3 Buffer Example



12.4.10 NATURAL BUFFER:

The City Forester may approve the use of existing vegetation to satisfy the buffer yard requirements. The vegetation shall be in healthy condition and consist of native, non-invasive species. The existing vegetative buffer shall be of substantial depth as to provide a natural screen. The City Forester may require additional plantings to areas of the natural buffer where the screening effect is deficient.

12.5 - PROTECTIVE SCREENING

12.5.1 APPLICABILITY:

Excluding mechanical equipment of individual single-family or two-family detached dwelling units, protective screening shall be provided in all zones.

12.5.2 PRIVATE DEVELOPMENT SCREENING REQUIREMENTS:

A protective screen to prevent public view from any street right-of-way (excluding alleys) or adjoining property shall be provided for the following:

A. Dumpsters: If visible from any street right-of-way or residentially zoned property, screening shall be required on three (3) sides by either a seven (7) foot masonry wall or wood fence. Where screening is required, the dumpster shall be oriented so that the enclosure opening is not visible from any street right-of-way and shall be accessible to waste management collection. If this orientation is not possible, then a gate shall be required on the enclosure opening to prevent view from the street right-of-way.

B. All mechanical equipment, which is larger than five (5) feet by five (5) feet by four (4) feet high, shall be screened on three (3) sides by either a masonry wall or wood fence. Said fence or wall shall exceed the height of the mechanical equipment by a minimum of six (6) inches. The maximum height of a required fence or wall shall be 7 feet. The mechanical equipment may also be screened by a minimum of one (1) row of evergreen shrubs as listed in the Screening and Buffer List.

12.5.3 PUBLIC UTILITY FACILITIES SCREENING REQUIREMENTS:

Public utility facilities include any public or private building or structure used for the production, storage, transmission, distribution, and recovery of communications, water, sewage, gas, energy, and other similar utilities.

Utilities which exceed four (4) feet in height, excluding sanitary sewer plants, water treatment facilities, and any utilities located within the public right-of-way shall be screened on three (3) sides by either a masonry wall or wood fence. Said fence or wall shall exceed the height of the mechanical equipment by a minimum of six (6) inches. The mechanical equipment may also be screened by a minimum of one (1) row of evergreen shrubs as listed in the Screening and Buffer List.

12.5.4 MAINTENANCE

All required screening shall be maintained by the property owners.

SCREENING AND BUFFER LIST

(This list is not all-inclusive; other shrubs may be used with approval of the City Forester)

1. NEEDLEPOINT HOLLY (<i>Ilex cornuta</i> 'Needlepoint')	6. COMMON ABELIA (<i>Abelia x grandiflora</i>)
2. SCHIPKA LAUREL (<i>Prunus laurocerasus</i> 'Schipkaensis')	7. HICKS YEWS (<i>Taxus x media</i> 'Hicksii')
3. SEA GREEN JUNIPER (<i>Juniperus chinensis</i> 'Sea Green')	8. RUSSIAN OLIVE (<i>Elaeagnus x ebbingei</i>)
4. LEATHERLEAF VIBURNUM (<i>Viburnum hytidophyllum</i>)	9. DWARF BURFORD HOLLY (<i>Ilex cornuta</i> 'Burfordii Nana')
5. PRAGENSE VIBURNUM (<i>Viburnum x pragensense</i>)	10. WAX LEAF PRIVET (<i>Ligustrum japonicum</i>)

