

Article V: Buffer Yards; Landscaping; Screening

Division 40 Buffer Yards/Landscaping Requirements

Section 40.01 General:

- A. Buffer yards are a combination of land and physical barriers such as fencing, plant material, and earthen berms that separate various land uses and street rights-of-way. Their purpose is to create a better quality of living and aesthetics for the community by encouraging the preservation of existing vegetation and stabilize the environment's ecological balance, to establish proper separation between land uses, to provide flexibility in developing appropriate separation between land uses, and to help reduce the negative impact of glare, noise, odors, overcrowding, traffic, lack of privacy, and visual blight when incompatible land uses adjoin one another.
- B. To determine the buffer yard required by this Article, the following steps should be taken:
 - 1. Identify the classification of the proposed land use and any adjacent land use listed in Section 40.03, Buffer Yard Use Classification List.
 - 2. Use Section 40.04, Buffer Yard Chart, to determine the appropriate letter designation for each abutting yard.
 - 3. Match the letter designation obtained from Section 40.04, Buffer Yard Chart, with the letter designation of Subsection B, Buffer Yard Illustrations, to determine the required buffer yard.

Section 40.02 Buffer Yards-Site Plan Required, Approval, Timing of Permits

- A. Prior to issuance of a zoning compliance permit, an applicant must propose and receive approval for a buffer yard plan in accordance with this Article. The applicant must submit a site plan drawn to scale showing the buffer yard areas and the plants that will be installed. The name and number of each type of plant to be used will be listed.
- B. Zoning compliance permits must be issued only after a site plan, including a detailed buffer yard plan, has been approved by the Zoning Administrator.
- C. In order for a final certificate of occupancy to be issued, all vegetation, fencing, and berms required by this Division shall be in place.

Section 40.03 Buffer Yard Use Classification List

- A. Below are the classifications or groups of land uses that will be utilized in conjunction with Section 40.04, Buffer Yard Chart, to determine the required buffer yards.
 - 1. Classification I: Single family dwellings, individual manufactured/mobile homes, family care homes, golf courses, nature areas, wildlife sanctuaries, and their accessory uses, including recreation.
 - 2. Classification II:

- a. Multifamily dwellings, dormitories, manufactured/mobile home parks, fraternities and sororities, rooming/boarding houses and their accessory uses, including recreation.
 - b. Limited impact recreational uses, including, but not limited to: playgrounds, jogging trails, bicycle areas, boat launch ramps, picnic areas, swimming pools, and tennis courts.
3. Classification III:
- a. Institutional uses, including, but not limited to: day or youth camps, cemeteries, churches, day care centers, group care homes, libraries, museums, nursing homes, public or private schools, retirement homes, social or fraternal organizations, and hospitals.
 - b. Governmental buildings or uses, including but not limited to: offices, fire stations, police stations, garages, public utilities, and public services uses. Specifically excluded are sanitary landfills, wastewater treatment facilities, extraction activities, and animal services.
 - c. Commercial and service uses, including, but not limited to: retail sales operations, laundry/dry cleaners, any retail or service operations not open between the hours of 11pm and 6am, restaurants (conventional, not fast food), service or business stores (catering, bakery, duplicating, photography, shoe repair, tailoring, travel agency, etc.), taxi companies, shopping centers, funeral homes, and principal use parking lots.
 - d. Offices, including drive-thru facilities.
 - e. Utility uses, including, but not limited to: telephone facilities, cable television companies, and radio and television facilities, telecommunication towers.
 - f. Medium impact commercial recreation uses, including, but not limited to: fairgrounds, miniature golf, golf driving ranges not operated in conjunction with a golf course, stables, indoor recreation areas such as skating rinks, tennis, swimming, handball and racquetball, athletic clubs, exercise and dance studios, and indoor theaters.
 - g. Plant nurseries or greenhouses that are not part of a farm.
4. Classification IV:
- a. High impact recreational uses, including, but not limited to: auditorium, coliseum or stadium, theaters, athletic fields and sports arena.
 - b. Road service uses, including, but not limited to: gasoline sales, convenience stores, fast food restaurants, major and minor repair facilities, boat rental/sales or service, vehicle rental/sales or service.
 - c. Veterinary offices, animal boarding for medical attention only.
 - d. Agricultural support uses including, but not limited to: farm equipment rental/sales and service and farm supply (feed, grain, and fertilizer).
 - e. Light industrial uses, including, but not limited to: sewing operations, wood products, laboratories, warehouses, wholesaling businesses and storage, publishing plants and printing plants, mini warehouses, contractor's office with equipment storage yards, ice wood sales, lumberyards, building materials sales

and storage, trade shops (including cabinet, metal, carpentry, planning, plumbing, upholstery, and paneling),

5. Classification V:

- a. Heavy industrial uses, including, but not limited to , grain elevators, resource recovery activities.

Section 40.04 Land Use Classifications and Buffer Yard Specifications

This section shows the buffer yard requirements based on an adjacent Land Use Classifications or groups (Subsection A), which specifies the type of buffer yard required for in that situation. Then Subsection B, Buffer Yard Specifications, states what the specifications of each type of buffer yard will be.

A. Buffer Yard Chart

The following chart shows what type of buffer yards are required based on which Land Use Class the proposed use is located in and the Land Use Class of the adjacent lot or parcel. The types of buffer yards required are designated with the letters A,B,C,D,E, or F, which are further defined by their respective specifications in Subsection B below. The notes for this chart tend to further explain what the requirements are for certain Land Use Classification situations.

Proposed Land Use Class	Adjacent Permitted Land Use Classification					Adjacent Vacant or Zone with Non-Conforming Use		Other
	I	II	III	IV	V	Public/Private Residential	Non-Residential	Streets
II	C - note 1	B - note 1	B - note 1	B - note 1	B - note 1	C - note 1	B - note 1	A - notes 1,3,4
III	D - note 2	D - note 2	B - note 2	B - note 2	B - note 2	D - note 2	B - note 2	A - notes 1,3,4
IV	E - note 2	E - note 2	B - note 2	B - note 2	B - note 2	E - note 2	B - note 2	A - notes 1,3,4
V	F - note 2	F - note 2	B - note 2	B - note 2	B - note 2	F - note 2	B - note 2	A - notes 1,3,4

NOTES:

1. Building setbacks shall be in accordance with applicable regulations for the zoning district and use.
2. Unless otherwise provided, setbacks shall be determined in the following manner:
 - a. Structures thirty-five (35) feet in height and under – in accordance with prescribed buffer yards.
 - b. Structures over thirty-five (35) feet in height – in accordance with prescribed buffer yards or by using the following formula, whichever is greater: $D=6+2(S)+L/10$ where

D is the minimum setback distance, S is the number of stories and L is the length of the wall. Where the length of the wall is setback eight (8) feet or more, the length (L) of each segment or plane is measured separately in determining the required yard depth. (See story definition)

- c. Setbacks for parking, storage, dumpsters, etc. shall be in accordance with prescribed buffer yards.
- 3. Buffer yards for adjacent streets may only be encroached upon for driveway access and signage.
- 4. The vegetation of this Section shall not apply to public alleys and private service easements that provide secondary access; however, structures must observe the buffer yard setback.

B. Buffer Yard Specifications:

Buffer yard specifications in the charts below indicate the specifications of each type of buffer yard, which is determined and required based on the Land Use Classifications of adjacent land uses shown in Subsection A, Buffer Yard Chart. Buffer Yard requirements are stated in terms of the width in feet of the buffer yard and the number of plant units required per each one hundred (100) linear feet of buffer yard.

Buffer Yard A		
Lot Size	Buffer yard width required	Number of Plant Units per 100 Linear Feet of Buffer Yard
Less than 25,000 sq. ft.	4	12 Shrubs
25,000 sq.ft. to 175,000 sq. ft	6	20 Shrubs
over 175,000 sq. ft.	10	25 Shrubs
1. One (1) small tree may be substituted for four (4) shrubs. If more than eight (8) feet is available, then one (1) large tree may be substituted for 4 shrubs.		
2. Plant material may be reduced by fifty percent (50%) when a berm at least two (2) feet in height is provided.		
3. Shrubs used to satisfy the requirements of this buffer yard are not limited to those listed in Section 40.08		

Buffer Yard B		
Lot Size	Buffer Yard Width Required	Number of Plant Units Per 100 Linear Feet of Buffer Yard
Less than 25,000 sq. ft.	4	3 Small Trees and 3 Evergreen Shrubs
25,000 sq. ft. to 175,000sq.ft.	6	3 Small Trees and 3 Evergreen Shrubs
Over 175,000 sq.ft.	10	3 Small Trees and 3 Evergreen Shrubs
If more than eight (8) feet is available, then large trees may be substituted for small trees		

Buffer Yard C		
Lot Size	Buffer Yard Width Required	Number of Plant Units Per 100 Linear Feet of Buffer Yard
All sizes	10	3 Small Trees and 16 Evergreen Shrubs
1. When a fence is used, the buffer yard width may be reduced to 8 feet and vegetation may be reduced to 2 large trees		

Buffer Yard D		
Lot Size	Buffer Yard Width Required	Number of Plant Units Per 100 Linear Feet of Buffer Yard
All sizes	20	3 large trees (minimum 100% Evergreen) 5 small trees, 16 Evergreen shrubs
1. Buffer yard vegetation may be reduced by 50% if a fence or earth berm is provided		
2. Buffer yard width may be reduced 50% if a fence is provided		

Buffer Yard E		
Lot Size	Buffer Yard Width Required	Number of Plant Units Per 100 Linear Feet of Buffer Yard
All sizes	30	5 large trees (minimum 70% Evergreen) 7 small trees and 26 Evergreen shrubs
1. Buffer Yard vegetation may be reduced by 50% if a fence or earth berm is provided		
2. Buffer yard width may be reduced 50% if a fence is provided		

Buffer Yard F		
Lot Size	Buffer Yard Width Required	Number of Plant Units Per 100 Linear Feet of Buffer Yard
All sizes	50	6 large trees, 9 small trees, 45 Evergreen shrubs
1. Buffer yard vegetation may be reduced by 50% if a fence or earth berm is provided		
2. Buffer yard width may be reduced by 50% if a fence is provided		

Section 40.05 Barrier and Vegetation Standards

A. Fences: Within or abutting residential districts, no wall or fence shall exceed four (4) feet in height within a front yard or exceed eight (8) feet in height in the rear and side yard; and in all other non-residential districts, no fence shall exceed eight (8) feet in height. The setback requirements of these regulations shall not prohibit any necessary retaining wall or prohibit any wall or fence. Vision clearance at intersections as defined in Section 15.05 shall be maintained.

Within abutting residential districts, all man-made fences or walls shall have at least a finished side facing out (no adjoining property) and no fence or wall shall contain barbed (except enclosing livestock) or razor wire or any other dangerous features. Must create a complete visual screen. Acceptable materials are masonry, cedar, redwood, and pressure treated lumber resistant to rot. Fence installation should be consistent with acceptable building practices.

B. Berms:

Minimum Height – 5 feet

Maximum Slope – 2 feet horizontal for each 1 foot vertical (2:1)

Minimum Crown Width – 2 feet

C. Minimum Plant Size:

Unless otherwise indicated elsewhere in this Section, all plant material shall meet the following minimum size standards at the time of planting:

<u>Planting Material Type</u>	<u>Minimum Planting Size</u>
Large Tree	
Single-Stem	1 ½ inch caliper
Multi-Stem	6 feet in height
Small Tree	4 feet in height
Evergreen Shrubs	1 foot in height

D. Spacing in Buffer yards C, D, E, and F:

Buffer yards C, D, E, and F are intended to create a complete visual screening year-round. Therefore, proposed and existing vegetation should be spaced to accomplish this purpose. No more than two (2) continuous feet of horizontal plane, as measured and viewed perpendicular from the property line, may be void of vegetation at least six (6) feet in height within ten (10) years of planting.

E. Existing Material:

Any existing plant material that otherwise satisfies the requirements of this Section may be counted toward satisfying all such requirements. For buffer yard C, D, E, and F, one existing large or small tree may be substituted for two shrubs as required by this Division.

F. Seeding:

All buffer yard areas that are not landscaped shall be seeded with lawn grass unless ground cover is already established.

G. Encroachment:

Among other things, buffer yards may not be encroached upon by vehicular areas (except driveways and common access parking lots), buildings, service walkways, exterior storage, dumpsters, or mechanical equipment unless otherwise provided. Encroachment by storm water detention ponds may occur subject to the approval of the town. Any plant materials placed within storm water storage areas shall be of a variety that will survive periodic flooding. Exterior lighting may project three (3) feet into required buffer yards.

H. Recreational Use of Buffer Yard:

A buffer yard may be used for passive recreation. It may contain greenway, pedestrian, bicycle, or equestrian trails, provided that no plant material is eliminated, the total width of the buffer yard is maintained, and all other regulations of the zoning ordinance are met.

In no event, however, shall the following uses be permitted in buffer yards: playgrounds, ball fields, stables, swimming pools, tennis courts, or any other type of active recreational use.

I. Easement:

No vegetative screen or barriers required by this Section shall be placed on property subject to utility or drainage easements without the written consent of the Town and the easement holder.

J. Solar Access:

If the development on the adjoining use is existing, and is designed for solar access, small trees shall be substituted for large trees where large trees would destroy solar access.

K. Overlapping Buffer Yards:

Whenever two (2) or more buffer yard requirements are applicable to the same use or combination of uses, then the more stringent of the buffer yard requirements shall apply.

L. Drainage Ditch:

When a drainage ditch separates property lines, all vegetation and fencing required by this Division shall be provided. However, in no case shall the required vegetation and fencing be located within five (5) feet of the outer edge of the drainage ditch. Placement of vegetation and fencing within easements shall be in accordance with subsection (I) above.

M. Future Thoroughfare:

Required landscaping materials, fencing, and berms shall not encroach within future thoroughfare right-of-way.

N. Shopping Centers, Condominium/Townhouses, and Multi-family Development:
Buffer yards are required only along exterior property lines of the project, however, buffer yards are required along all property lines of outparcels that have direct access onto a public dedicated street.

O. Vegetation Location:

Required vegetation shall be installed within the minimum buffer yard area except as provided herein. Where a drainage ditch or other natural feature prevents the installation of required vegetation within the minimum buffer yard area, such materials shall be installed within an area of equal width to the required buffer yard area. This “area of equal width” shall be located adjacent to and extend from the drainage ditch or other natural features. Building setbacks, parking areas, driveways, and all site improvements may encroach into the “area of equal width”.

Section 40.06 Maintenance of Buffer Yard Areas

- A. The property owner shall be responsible for maintaining all vegetation required by this Division in a healthy condition. Any dead, unhealthy, or missing vegetation shall be replaced upon written notice by the Zoning Administrator. Upon notification, replacement of any dead, unhealthy, or missing vegetation shall be planted in accordance with the provisions of this Division. Replacement shall occur at the earliest suitable planting season.
- B. To ensure that landscape materials do not constitute a driving hazard, no fence, wall, or vegetation shall be obstruct vision between a height of two and one-half (2 ½) feet and ten (10) feet above ground level in a triangular area formed by the intersection of the right-of-way of two (2) streets pr a street and a railroad, or a street and a commercial driveway, and a diagonal line which intersects the right-of-way lines at two (2) points twenty-five (25) feet from the point at which the rights-of-way intersect.
- C. To ensure that fencing (both sides) will be maintained in a safe and aesthetic manner, the following maintenance requirements must be observed for all fencing required by this Division:
 - 1. No fences shall have more than twenty percent (20%) of its surface area covered with disfigured, cracked, or missing materials, or peeling paint for a period of more than thirty (30) consecutive days.
 - 2. No fences shall be allowed to remain with bent or broken supports or be allowed to stand more than fifteen (15) degrees away from the perpendicular for a period of more than thirty (30) consecutive days.

Section 40.07 Non-Conforming Buffer Yards

- A. Existing development that does not comply with the buffer yard requirements contained in this Division shall meet the provisions of this Section.
- B. When an applicant files the necessary forms for a zoning permit, building permit, certificate of occupancy, or business license, one of the following two situations shall apply:
 - 1. Buffer yard regulations are not applicable. This provision applies when:
 - a. There is a change of land use where the new land use is of the same or lower classification, as found in Section 40.03, as the previous land use
 - b. Expansions are proposed that singularly or collectively are five percent (5%) or less of the existing floor area, existing improved parking areas, or other impervious areas of the existing use at the time the ordinance becomes applicable.
 - 2. A portion of the prescribed buffer yard will be required in accordance with subsection (b) below when:
 - a. There is a change of land use where the land use is of higher classification as found in Section 40.03, as the previous land use.
 - b. Proposed expansions are singularly or collectively more than five percent (5%) of the existing floor area, existing improved parking areas, or other existing impervious area. The provisions of this Section shall in no way be deemed to require the removal of existing structures, buildings, improved parking areas, mechanical equipment, or lighting, provided however, all other encroachments, including but not limited to concrete islands and the like, shall be removed. Such areas shall be planted in accordance with the applicable provision of the buffer yard regulations.
- C. When a portion of the prescribed buffer yard is required based on Subsection B – 2 above, the following shall suffice for compliance with this section:
 - 1. For purpose of this subsection when there is less than eight (8) feet of buffer yard width available, small trees may be substituted for large trees.
 - 2. Where seventy-five percent (75%) or more of the required buffer yard width is available, all physical barriers and plant materials shall be installed.
 - 3. Where less than seventy-five percent (75%) of the required buffer yard width is available, all physical barriers and a percentage of plant material equal to that of the land areas available shall be installed.
 - 4. Where less than one (1) foot of buffer yard width is available, ground cover may be substituted for the required vegetation.

Section 40.08 List of Acceptable Vegetation

For detailed planting information or individual species, refer to: *Landscape Plants of the Southeast* by R. Gordon Halfacre and Anne R. Shawcroft, 5th Edition as a reference.

The following lists indicate planting materials which will meet the screening and shading requirements of this Article. 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 (4) principal criteria: general suitability for the coastal plain section of North Carolina, ease of maintenance, tolerance of city conditions, and availability from area nurseries. When selecting new plantings for a particular site, a developer should first consider the types of plants which are thriving on or near that site. Accordingly, native North Carolina species should often be favored. However, if an introduced species has proven highly effective for screening or shading in this area, it too may be a proper selection.

- a. Small trees for partial screening:
 1. River Birch (*Betula nigra*)
 2. American Hornbeam (*Carpinus carolinia*)
 3. Eastern Redbud (*Cercis Canadensis*)
 4. Flowering Dogwood (*Cornus florida*)
 5. Russian Olive (*Elaeagnus angustifolia*)
 6. Mountain Silverbell (*Halesia monticola*)
 7. American Holly (*Ilex opaca*)
 8. Crape Myrtle (*Lagerstroemia indica*)
 9. Sourwood (*Oxyndrum arboreum*)
 10. Carolina Cherry-Laurel (*Prunus caroliniana*)
 11. Callery Pear (*Pryus calleryana*)
 12. Foster Holly (*Ilex attenuate*)
 13. Nellie R. Stevens Holly (*Ilex "Nellie R. Stevens"*)
 14. Devilwood (*Osmanthus americanus*)
- b. Large trees for evergreen screening:
 1. Deodar Cedar (*Cedrus deodara*)
 2. Southern Magnolia (*Magnolia grandiflora*)
 3. Canadian Hemlock (*Tsuga Canadensis*)
 4. Leyland Cypress (*Cupressocyparis leylandii*)
 5. White Pine (*Pinus strobus*)
- c. Large trees for shading:
 1. Sugar Maple (*Acer saccharum*)
 2. Red Maple (*Acer rubrum*)
 3. Ginko (Male) (*Ginko Biloba*)
 4. Honeylocust (Thornless) (*Gleditsia triacanthos*)
 5. Sweet Gum (Seedless) (*Liquidamber styraciflua*)
 6. London Plane-Tree (*Platanus acerifolia*)
 7. Eastern Red Oak (*Quercus rubra*)
 8. Willow Oak (*Quercus phellos*)

9. Scarlet Oak (*Quercus coccinea*)
 10. Laurel Oak (*Quercus laurifolia*)
 11. Littleleaf Linden (*Tilia cordata*)
 12. Bald Cypress (*Taxodium distichum*)
 13. Japanese Zelkova (*Zelcova serrata*)
- d. Small shrubs for evergreen screening:
1. Glossy Abelia (*Abelia grandiflora*)
 2. Warty Barberry (*Barberis verruculosa*)
 3. Wintergreen Barberry (*Berberis julianae*)
 4. Dwarf Horned Holly (*Ilex cornuta 'rotunda'*)
 5. Littleleaf Japanese Holly (*Ilex crenata 'microphylla'*)
 6. Convexa Japanese Holly (*Ilex crenata 'convexa'*)
 7. India Hawthorn (*Raphiolepis indica*)
 8. Azaleas and Rhododendrons (Full-Shade) (*Rhododendron species*)
 9. Dwarf Buford Holly (*Ilex cornuta 'Bufordii Nana'*)
 10. Helliery Holly (*Ilex crenata 'Helliery'*)
 11. Dwarf Nandina (*Nandina domestica*)
 12. Narrow-leaved English Laurel (*Prunus laurocerasus anquastifolia*)
 13. Schipka Laurel (*Prunus laurocerasus 'Schipkaensis'*)
 14. Zabel Laurel (*Prunus laurocrasus 'Zabeliana'*)
 15. Dwarf Yaupon Holly (*Ilex vomitoria 'Nana'*)
- e. Large shrubs for evergreen screening:
1. Thorny Elaeagnus (*Elaeagnus pungens*)
 2. Burford Holly (*Ilex cornuta 'Burfordii'*)
 3. Yaupon Holly (*Ilex vomitoria*)
 4. Laurel or Sweet Bay Magnolia (*Laurel nobilis*)
 5. Japanese Privet (*Ligustrum japonicum*)
 6. Fortune Tea Olive (*Osmanthus fortune*)
 7. Red Photinia (*Photinia glabra*)
 8. Laurestinus Viburnum (*Viburnum tinus*)
 9. Hedge Bamboo (*Bambusa glaucescens*)
 10. Wax Myrtle (*Myrica cerifera*)
 11. Cleyera (*Cleyera japonica*)
 12. Longstock Holly (*Ilex pendunculosa*)
 13. Variegated Chinese Privet (*Liqustrum sinese 'Variegatum'*)
- f. Assorted shrubs for broken screens:
1. Japanese Barberry (*Berberis thunbergia*)
 2. Fringetree (*Chionanthus virginicus*)
 3. Border Forsythia (*Forsythia intermedia*)
 4. Vernal Witch-Hazel (*Hamamelis vernalis*)
 5. Common Witch-Hazel (*Hamamelis virginiana*)
 6. Pfitzer Juniper (*Juniperus chinensis*)
 7. Drooping Leucothoe (*Leucothoe fontanesiana*)

8. Winter Honeysuckle (*Lonicera, fragrantissima*)
9. Star Magnolia (*Magnolia stellata*)
10. Northern Bayberry (*Myrica pennsylvanica*)
11. Judd Viburnum (*Viburnum juddii*)
12. Doublefile Viburnum (*Viburnum plicatum*)