
CHAPTER
14

BUFFER YARDS AND RESOURCE PROTECTION

14-1 PURPOSE.

The purpose of this Chapter is to require buffering between non-compatible land uses, provide coordinated streetscapes, protect sight triangles, and to protect, preserve and promote the character and value of surrounding neighborhoods as well as, to promote the public health and safety through the reduction of noise pollution, air pollution, visual pollution, air temperature, and artificial light glare by providing for the installation and maintenance of buffer areas and landscaping in accordance with the standards and requirements set forth below.

14-2 APPLICABILITY.

No structure on land which abuts a right-of-way or boundary between two Land Use Classes as defined in Table 14A shall be developed, or redeveloped, unless a buffer yard, if required as indicated in Table 14B, is established in accordance with the requirements of this Chapter.

- a. Redevelopment Exception. Redevelopment that is approved in accordance with the provisions of Section 1-7 shall be exempt from the requirements of this Chapter.

14-3 TYPES OF BUFFER YARDS.

The following types of buffer yards shall be required, as applicable, in accordance with the provisions of this Chapter or other related chapter.

14-3.1 Boundary Buffer.

The purpose of the boundary buffer is to separate adjacent non-compatible land uses and screen and soften the detrimental impacts of such non-compatible uses upon one another and upon the surrounding neighborhood. The boundary buffer, which is a linear area adjacent to the side and/or rear property line, may vary in width depending on site conditions and on the level of screening required for line of sight, noise suppression or other nuisance related purpose.

14-3.2 Streetscape Buffer.

A streetscape buffer is located in a linear area adjacent to the front property line extending from side lot-line to side lot-line. The purpose of the streetscape buffer is to shield or enhance views into the parking lot, establish coordination among diverse buildings, setbacks and uses, to define the street and access points, to retain the quality of the environment by providing appropriate vertical mass in keeping with dimensions of horizontal voids, and to diminish the presence of wires/poles.

14-4 PLAN REVIEW.

For any buffer required by this Chapter, a plan shall be submitted with the application for Zoning Certificate to the Administrative Official to review for compliance with these regulations and any other applicable regulations. The plan shall show:

- a. the topography of the site;
- b. the location of driveway entrances;
- c. provisions for vehicular and pedestrian circulation;
- d. the location of sidewalks on or adjacent to the property;
- e. the location of utilities, barriers, shelters, and signs;

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- f. the location of landscaped areas and the types, quantity, sizes and location of vegetation to be planted in the areas of existing vegetation and existing and proposed topography and
 - g. any other relevant information requested by the Administrative Official.

14-5 MODIFICATIONS AND WAIVERS.

In the event that the unusual topography or elevation of a development site, the size of the parcel to be developed, the extent of expansion or redevelopment of the site or parking area is deemed to be insignificant, or the presence of existing buffers on adjacent developed property would make strict adherence to the requirements of this Chapter serve no meaningful purpose or would make it physically impossible to install and maintain the required buffer, the Zoning Commission or the Board of Zoning Appeals (per Section 14-5.1) may, upon proper application by the property owner, and upon making findings of fact, modify and/or waive the requirements of this Chapter provided the existing or resulting boundary features of the development site comply with the spirit and intent of this Chapter, Chapter 12, Section 12-6 and other related chapters.

14-5.1 Authority

The authority to approve landscape modifications resides with the Commission or Board that approves each specific type of zoning request.

14-6 GENERAL STANDARDS FOR BUFFER YARDS.

14-6.1 Responsibility for Installation of Buffer.

The boundary buffer area shall be provided by the person in charge of or in control of developing the property whether as owner, lessee, tenant, occupant or otherwise (hereinafter referred to as "Owner").

14-6.2 Location.

Boundary buffers shall be located along the rear and side boundaries of a lot or parcel. On sloped areas the boundary buffer should be located to maximize its screening effectiveness. Streetscape buffers shall be located along the public right-of-way and may be required along private street easements.

14-6.3 Structures within Required Buffer.

No structure shall be permitted within a required buffer other than a wall, fence or berm, or a driveway in the front yard connecting a parking area on the lot to the street or to a parking area on an abutting lot. A driveway in the side yard that connects a paving area on the lot to the street shall not encroach into the boundary buffer area.

14-6.4 Adjacent Parcels Owned by Same Owner.

When both parcels are owned and being developed by the same owner, the buffer may be placed on either adjoining parcel or astride the boundary.

14-6.5 Adjacent Parcels Owned by Different Owners.

When adjoining parcels have different owners the buffer shall be placed on the parcel being developed. However, a buffer that meets the requirement of both parcels may be placed astride the boundary if a written agreement, signed by both owners, is filed with the Administrative Official, is recorded in the real property records of the County and runs with the property.

14-6.6 Existing Fence, Wall, Berm or Landscaping on Adjacent Parcel.

When the adjoining parcel has an existing fence, wall, berm, or landscaping within ten feet (10') of a developing parcel boundary that fulfills the buffer requirements of the developing parcel, the existing landscape material on the adjacent lot may be used towards the requirement for the boundary buffer required for that boundary edge only. All credits for existing landscape material must be in accordance

with Section 15-6, and other related chapters. Any additional landscape material necessary to meet the boundary buffer requirements shall be added.

14-6.7 Existing Development on Both Sides.

Where development already exists on both sides of a property line, a buffer shall be established as a condition of any new development. The property owner shall provide the maximum buffer possible under the standards of this Chapter given the location of existing buildings and driveways. If the width available for the buffer is less than fifty percent (50%) of the minimum required buffer width, then a solid fence or wall meeting the standards of Chapter 15, Section 15-2, shall be located at the side of the buffer facing the proposed development.

14-7 BOUNDARY BUFFER.

To determine the type of boundary buffer required between two adjacent parcels, the following procedure and standards shall be utilized:

14-7.1 Procedure.

- a. Identify the Land Use Class of the Developing Parcel. Refer to Table 14A to determine the Land Use Class of the proposed use and intensity.
- b. Identify the Land Use Class of each Adjoining Parcel. Refer to Table 14A to determine the Land Use Class of the adjoining use and intensity.
- c. Determine the Boundary Buffer Requirement for each Edge of the Developing Parcel. Refer to Table 14B and determine if the Boundary Buffer Requirement will be Buffer A, Buffer B or none. Figures 14A and 14B indicate Landscape Material Requirements for Boundary Buffers A and B, respectively.
- d. Determine Width of Buffer. For each Boundary Buffer (A or B), alternative widths may be utilized. The width of each buffer defines the Landscape Material Requirements. For each width range, options for Landscape Material Requirements are given as minimum number of plants required per one hundred (100) linear feet.
- e. Determine Length of Buffer. Measure the length of the property boundary requiring the buffer and subtract any length covered completely by a clear sight triangle under Section 14 -9.
- f. Determine Landscape Material Requirements. Divide the length of the Required Boundary Buffer (the result of 14-7.1(e) above) by one hundred (100). Multiply the result by the number of plants for the required boundary buffer shown in Figures 14A or 14B for the selected width. Any fractional number of plants (shrubs and trees) should be calculated to the next highest whole number.
- g. Location and Placement of Landscape Material Requirements. All landscape material requirements shall remain within the designated area and shall otherwise meet the standards of the Boundary Buffer. Although landscape material requirements typically are located within each 100 foot increment, their placement may vary in order to screen objectionable views.
- h. Change of use or Expansion. Any change of use for a commercial property involving the expansion of the building, change in parking requirements, or change in intensity of use shall require the installation of a streetscape buffer and residential landscape buffer.

FIGURE 14A: ALTERNATIVES FOR BOUNDARY BUFFER A

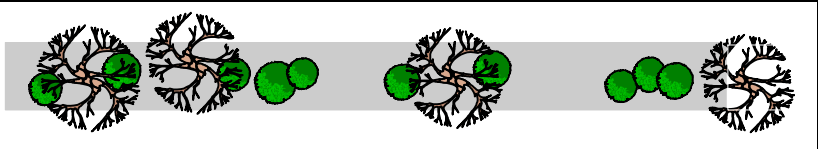
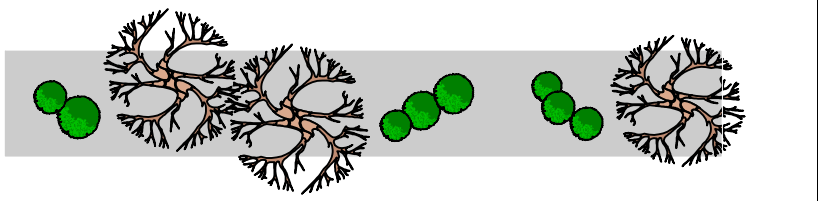

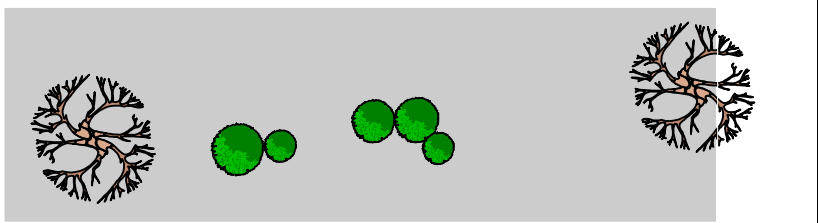
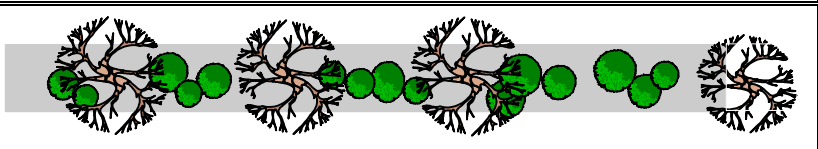
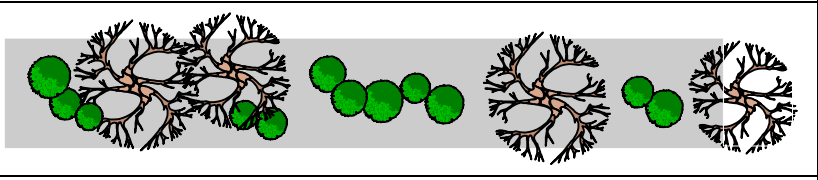
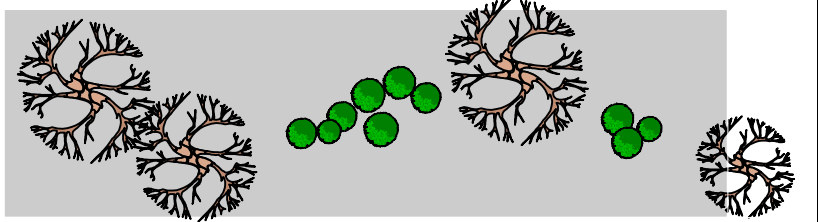
Minimum Width of buffer	100 Linear Feet	Landscape Material Requirements	
		Canopy Trees	Shrubs
10 ft.		3.3	10
15 ft.		2.8	8
20 ft.		2.3	6.5
25 ft.		1.9	5

FIGURE 14B: ALTERNATIVES FOR BOUNDARY BUFFER B

Minimum Width of buffer	100 Linear Feet	Landscape Material Requirements	
		Canopy Trees	Shrubs
10 ft.		3.3	15
15 ft.		3.3	12.5
25 ft.		3.3	10

Notes:

1. 1.5 understory trees or 1 evergreen tree may be substituted for 1 canopy tree for up to 50% of the required canopy trees.
2. A fence, wall, or berm 6 ft. to 8 ft. in height may be used and can substitute for shrub requirements

TABLE 14A
CLASSIFICATION OF LAND USES

LAND USE	LAND USE INTENSITY ¹ (See note below if intensity of adjoining parcel is unknown)		LAND USE
RESIDENTIAL			
Single/Two Family Detached and Detached in PUD's	Maximum 5.8 DU/A	LOW	I
Multi-Family	Maximum 9.7 DU/A	MOD	II
	GREATER THAN 9.7 DU/A	HIGH	II
COMMERCIAL			
Office	Maximum .60 ISR	LOW	II
	Maximum .75 ISR	MOD	III
	GREATER THAN .75 ISR	HIGH	IV
Retail Business (Sales and Service)	Maximum .60 ISR	LOW	II
	Maximum .75 ISR	MOD	III
Retail Bar, Restaurant Dance/Concert Club	GREATER THAN .75 ISR	HIGH	IV
	Maximum .60 ISR	LOW	III
	Maximum .75 ISR	MOD	III
	GREATER THAN .75 ISR	HIGH	IV
INSTITUTIONAL; PUBLIC SERVICE; AND RECREATION, CULTURE & ENTERTAINMENT			
	Maximum .60 ISR	LOW	II
	Maximum .75 ISR	MOD	III
	GREATER THAN .75 ISR	HIGH	IV
AGRICULTURAL			
Rural		LOW	I
Suburban		LOW	I

NOTES:

ISR = IMPERVIOUS SURFACE RATIO

DU/A = DWELLING UNITS PER ACRE

¹The land use class of a developed adjoining parcel shall be classified as low intensity if the impervious surface (ISR) is not known.

The land use class of a vacant adjoining parcel shall be classified as low intensity for the use typically permitted in the existing zone district.

TABLE 14B
MINIMUM BUFFER YARDS FOR ADJOINING LAND USE *

LAND USE CLASS OF DEVELOPMENT PARCEL	I	II	III	IV	Adjoining R.O.W.
I	---	---	---	---	C**
II	A	---	---	---	C
III	B + 10 ft.	B	---	---	C
IV	B + 20 ft.	B + 15 ft.	B + 10 ft.	---	C

NOTES:

Each 20 foot increment required in Land Use Class IV can be substituted by an additional contiguous "B" Buffer strip.

Each 10 feet increment required in Land Use Class IV and Land Use Class V can be substituted by an additional contiguous "A" Buffer strip.

When the land use of an adjoining parcel is a nonconforming use, the boundary buffer width should be based on the land use intensity of the existing use or the underlying zoning, whichever is more restrictive.

* Greater boundary buffers may be required in approvals of Conditional Uses and PUD's when necessary to protect adjacent land uses.

** Only required in Land Use Class I if parking area for 5 or more vehicles is within 50 feet of the R.O.W.

Buffer Yards:

A = Boundary buffer requirements in Figure 14A

B = Boundary buffer requirements in Figure 14B

C = Streetscape buffer requirements in Figure 14C

14-7.2 Overlap.

When any portion of the parcel is subject to more than one set of landscape requirements as set forth in this Chapter, Chapter 12, and other related chapters, the most stringent requirement will control. The most stringent requirements shall be defined as those which require the highest fence, wall or screen or, if no fence, wall or screen is required, the requirements with the greatest quantity of landscaping.

14-7.3 Credit.

Existing vegetation, fences, walls or berms on a parcel may be counted toward the requirements for any class of buffer provided that it meets the standards established in Chapter 15, Section 15-6, and Credit for Existing Landscape Materials.

14-8 STREETScape BUFFER.

All parcels with Land Use Classes II through IV, as defined in Table 14A, with frontage on a public road and all parking areas in Class I for five (5) or more vehicles (in all Land Use Classes) within 50 feet of the right-of-way shall provide a streetscape buffer along the property line abutting the right-of-way of the public road when developed or redeveloped.

14-8.1 General Standards.

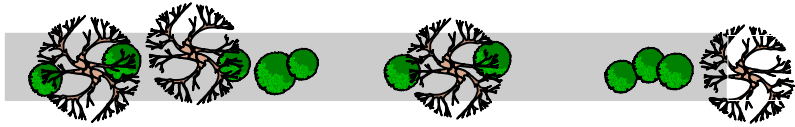
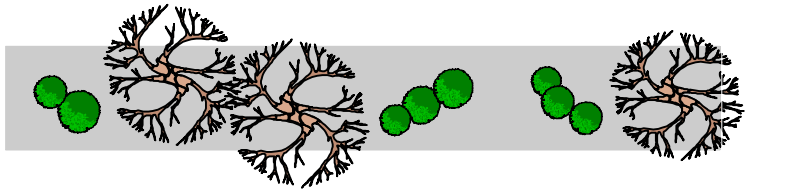
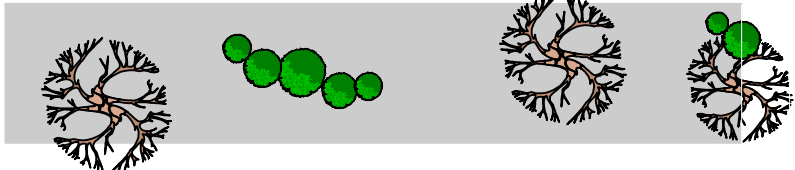
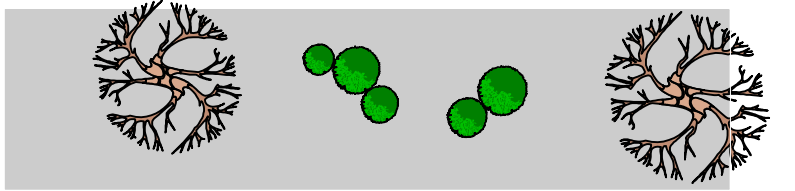
- a. Location and Depth. The streetscape buffer shall have a depth of ten feet (10') or greater, shall be located adjacent to the right-of-way and shall extend along the entire road frontage.
- b. Parking Prohibited. No parking or pavement shall be allowed in the streetscape buffer except for intersecting drives or required walkways.
- c. Specifications. Landscape Material shall be required in accordance with Figure 14C and Chapter 15, General Landscape Material Standards.
- d. Sight Triangle. When in a sight triangle, all Landscape Material shall meet the standards set forth in Section 14-9.

14-8.2 Determination of Streetscape Buffer Requirements.

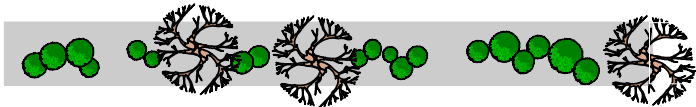
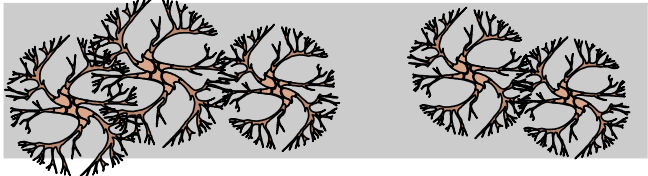
To determine the required landscape materials the following procedure shall be followed:

- a. Determine Width of Buffer. Although the width of the buffer is typically measured parallel to the property line, design variations are allowed. The width of each streetscape buffer defines the landscape material requirements and, for each width range, options for landscape material requirements are given as minimum number of plants required per one hundred (100) linear feet.
- b. Determine Length of Buffer. Measure the length along the street right-of-way which requires the buffer and subtract any length covered by a clear sight triangle under Section 14-9.
- c. Determine Landscape Material Requirements. Divide the length of the required boundary buffer (the result of 14-8.2 (b) above) by one hundred (100). Multiply the result by the number of plants for the required boundary buffer shown in Figure 14C for the selected width and type of use. Any fractional number of plants (shrubs and trees) should be calculated to the next highest whole number.
- d. Location and Placement of Landscape Material Requirements. All landscape material requirements shall remain within the streetscape buffer area or in the vehicular use area where such area abuts the streetscape strip and shall otherwise meet the standards of the streetscape buffer. Although landscape material requirements typically are located within each 100 foot increment, their placement may vary in order to screen objectionable views.

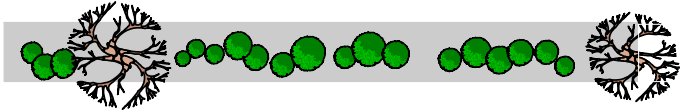
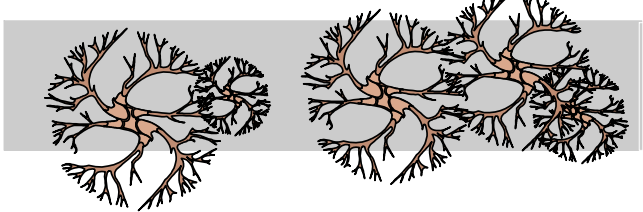
**FIGURE 14C: STREETScape BUFFERS
ALTERNATIVES FOR COMMERCIAL STREETScape BUFFERS**

Minimum width of buffer	100 Linear Feet	Landscape Material Requirements	
		Canopy Trees	Shrubs
10 ft.		3.3	10
15 ft.		2.8	8
20 ft.		2.3	6.5
25 ft.		1.9	5

ALTERNATIVES FOR OFFICE STREETScape BUFFERS

Minimum width of buffer	100 Linear Feet	Landscape Material Requirements	
		Canopy Trees	Shrubs
OPTION 1 10 ft.		2.5	20
OPTION 2 20 ft. Average (range 10 to 30 ft.)		5 (or existing woodland area)	

ALTERNATIVES FOR RESIDENTIAL STREETSCAPE BUFFERS

Maximum width of buffer	100 Linear Feet	Landscape Material Requirements	
		Canopy Trees	Shrubs
OPTION 1 10 ft.		1.5	20
OPTION 2 20 ft. Average (range 10 to 30 ft.)		2.5 (or existing woodland area)	

Notes:

1. Berms shall be a minimum 3 ft. height.
2. A fence or wall, in compliance with Section 10-7.1, may be used and substituted for 50% of the shrub requirements.
3. All landscape material required for the buffer shall be confined to within the required landscape strip.
4. One canopy tree may substitute for 3 shrubs up to 50% of the shrub requirements.

14-9 CLEAR SIGHT DISTANCE AT STREET AND ACCESS DRIVE INTERSECTIONS

14-9.1 Purpose.

To insure that landscape materials do not constitute a driving hazard, a "clear sight triangle" will be observed at all street and access drive intersections.

14-9.2 Definition.

A clear sight triangle is the triangular area formed by a diagonal line connecting two points located on intersecting lines of a right-of-way, easement of access, or pavement edge of an access drive, each point being 20 feet from the intersecting lines. See Figure 14D.

14-9.3 Design.

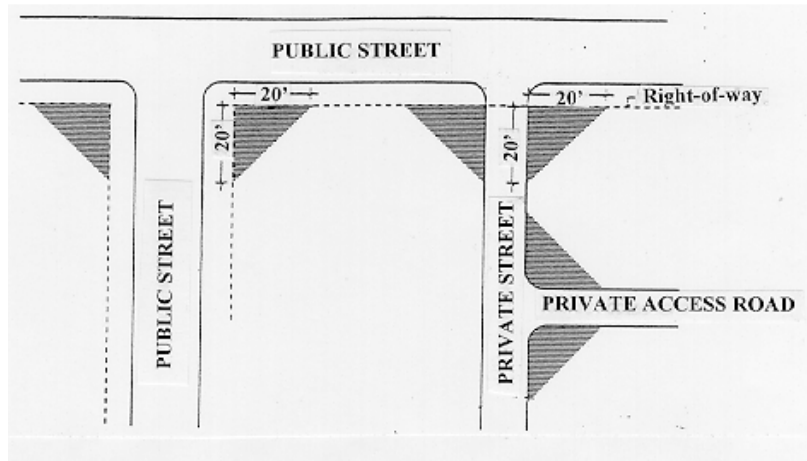
The entire area of the clear sight triangle should be designed as illustrated in Figure 14D to provide the driver of the vehicle entering the intersection with an unobstructed view to all points nine (9) feet above the roadway along the centerline. The recommended distance depends upon the design speed of the higher-order street and therefore is greater for arterial streets than for collectors.

14-9.4 Restrictions within Clear Sight Triangles.

- a. Within the sight triangle no landscape material with a mature height greater than twelve inches (12") shall be permitted with the exception of trees which conform to the following standards. Trees shall be permitted within the sight triangles as long as, except during early growth stages, only the tree trunk (no limbs, leaves, etc.) is visible between the ground and nine (9) feet above the ground, or otherwise does not present a traffic visibility hazard. Restrictions shall not apply to the following:
 1. Existing natural grades which, by reason of natural topography, rise twelve (12) or more inches above the level of the center of the adjacent intersection;

2. Fire hydrants, public utility poles, street markers, governmental signs, and traffic control devices.
- b. The restrictions contained in this Section 14-9.4 shall also apply to any areas outside the clear sight distance triangle that fall within the sight distance requirements of the County Engineer.

**FIGURE 14D
CLEAR SIGHT TRIANGLE**



14-10 WOODLAND PRESERVATION.

To be eligible for landscape requirement credits the following criteria must be met:

14-10.1 Quantity of Woodland.

The minimum amount of woodland preserved shall be one-eighth of an acre (5,445 sq.ft.). The woodland canopy shall be contiguous and fifty percent (50%) of the canopy shall be from trees that have a 10" DBH or greater.

14-10.2 Location.

Any woodland area eligible for credit must be located within one hundred feet (100') of the principal building or an impervious surface that directly serves the principal use on the site and physically located within a required buffer area.

14-10.3 Credit.

If the above conditions are met, credit may be granted as follows:

- a. Landscape Reduction Bonus. The landscape requirements, specified in this and other related chapters, that are applicable to the site may be reduced or eliminated upon the determination by the Administrative Official that the Woodland Preservation area amenities fully compensate for the reduced or eliminated landscape requirements. The existing landscape materials shall be verified as Woodland Preservation Credit through the submission of a landscape plan including a Landscape Architect seal or an affidavit signed by the owner, applicant, architect, engineer or surveyor.
- b. Parking Reduction Bonus. The Zoning Commission may approve a reduction of up to ten percent (10%) of the required number of parking spaces if adequate parking will remain on the subject site and if land area for required number of spaces remains available for future development on the subject site.
- c. Intensity Reduction Bonus. The Zoning Commission may approve an increase in the intensity (maximum ISR) up to ten percent (10%) of the district limits for any use permissible as a PUD.

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