

DESIGN & CONSTRUCTION STANDARDS

Landscaping • Screening • Buffering

STAFFORD COUNTY, VIRGINIA

DECEMBER, 2005



**Design and Construction Standards for Landscaping, Buffering
and Screening (DCSL)
Stafford County, Virginia**

SECTION 100

DESIGN AND CONSTRUCTION STANDARDS

Part 1

Design Standards

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Section 101.0 General

Section 101.1 Purpose

- (a) This manual, fully named THE DESIGN AND CONSTRUCTION STANDARDS FOR LANDSCAPING, BUFFERING AND SCREENING, STAFFORD COUNTY, VIRGINIA, has been developed and designed to assist the public in knowing the policies and regulations which apply to land development in Stafford County. The provisions contained herein relate primarily to the requirements which apply to the review and approval of site development plans and plats, and construction in accordance with those plans.
- (b) This documents effectuates or supplements requirements of the following:
 - 1. Zoning Ordinance
 - 2. Subdivision Ordinance
 - 3. Standardized Landscape Specifications for the Commonwealth of Virginia
 - 4. Code of the Commonwealth of Virginia
 - 5. Virginia Uniform Statewide Basic Building Code
 - 6. Chesapeake Bay Preservation Area Designation and Management Regulations VR-173-02-01
 - 7. Virginia Department of Transportation Standards and Specification
- (c) The laws and ordinance in Section 101.1(b) shall take precedence in the event of conflict between them and this manual
- (d) This manual is an ordinance and shall have the force and effect of law. In the event any part or provision of this manual is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions of this manual, which shall remain effective.
- (e) The standards and specifications contained herein are the minimum acceptable standards. The director of Planning and/or the director of Code Administration may, in certain circumstances, require higher standards if it

is deemed necessary for the insurance of health, safety, and welfare of the citizens of the County.

Section 101.2 Effective Date:

The original effective date of this document was January 12, 2006 per Ordinance 005-33 adopted by the Board of Supervisors.

The document was last amended per Resolution/Ordinance 006-65 on the 19th day of September, 2006.

Prior amendments to this document: Resolution/Ordinance 006-64, approved on the 19th day of September, 2006. Resolution _____ approved on the ___ day of (month), 200_.

Section 101.3 Amendments:

- (a) When this document is amended by the Planning Commission, such amendments shall take effect from the date of the Planning Commission approval thereof.
- (b) The provisions of this document are adopted as policies of the Board of Supervisors.

Section 101.4 Administration:

- (a) The provisions of this document shall be administered jointly and cooperatively by the Office of Planning, Office of Code Administration and the Public Service Department.
- (b) Generally, the Office of Planning shall be responsible for the formal approval and bonding processes while the Public Service Department shall be responsible for engineering. The Office of Code Administration shall be responsible for the technical and permitting. All review of submissions was in coordination with other review agencies.
- (c) The Office of Code Administration shall be responsible for site inspection and related enforcement of regulations found in the manual

Section 101.5 Waivers and Departures:

- (a) The provisions of this document shall be required unless specifically waived, where applicable, by either the director of Planning or the Planning Commission, according to their respective areas of administration, as cited in this document. Waiver and Departure requests for fees, monetary contributions, escrows, and extensions of plan approval validity shall not be considered.
- (b) In considering and acting upon waivers and departures and in consideration of the public health, safety, and welfare, the County may prescribe appropriate conditions and safeguards to further express the intent of this manual.
- (c) Waivers and Departures shall be part of the official record of the submission

Section 101.6 Fees:

The application fees for review of plats, plans, waivers, departures or other necessary documents, are established by the Board of Supervisors by resolution.

Section 101.7 Appeals of Directors Decision:

The decision of the director of Planning or the director of Code Administration is final. If the director of Planning or the director of Code Administration disapproves any plan submitted pursuant to all processing requirements identified in the section, and the applicant of such plan contends that such disapprovals were not properly based on applicable state and local ordinances and policies, he may appeal to the Board of Supervisors. Such appeal must be filed with the Board of Supervisors within ten (10) days of the written disapproval of the director of Planning or the director of Code Administration.

Section 101.8 Criminal Penalties - Emergency Orders:

Refer to Article XVII, Enforcement, of the Zoning Ordinance

Section 102 Applicability

Buffer areas, basic landscaping, tree cover requirements and screening shall be provided for all major development except for any development within the boundaries of a public airport, where required by the Zoning Ordinance and in accordance with this document.

Ord. No. 006-64, 9-19-06

Section 103. - 109. Reserved

Bufferyards

Section 110.0 Buffer Yards

All major development may be subject to Sections 110.1, 110.2, and 110.3 of this document. Sections 110.1, 110.2 and 110.3 will determine the location, width and plant units for each buffer yard. Paragraphs (a), (b), (c), and (d) are applicable to all buffer yards.

- (a) Plant Units
 - Canopy = 10 p.u.'s each
 - Understory = 7 p.u.'s each
 - Evergreen = 7 p.u.'s each
 - Shrubs = 1 p.u. each
- (b) No more than fifteen (15) percent of the total plant units may be shrubs.
- (c) If a 5 foot berm, 8 foot solid wall or noise abatement wall is located within the buffer yard, plant units and buffer yard width shall be reduced by 50%. The berm or wall shall be located nearest to the freeway/interstate.
- (d) If a 3 foot berm or 3 foot solid wall that's similar to the material of the primary building is located within the buffer yard, the width of the buffer yard shall be reduced by 25%.
- (e) For Section 110.3, Transitional Buffers. If a six (6) foot tall privacy/opaque fence is located within the buffer yard, plant units and buffer yard width shall be reduced by 50%. The fence should be located nearest to the abutting property.

Section 110.1 Street Buffers along Freeways/Interstates

Buffer requirements for all development adjacent to roads designated by VDOT as a freeway/interstate. Access to this road is strongly restricted

- a. A buffer yard as required shall be provided along the entire frontage along the road designated as a freeway/interstate.

- b. A noise impact study shall be conducted and submitted with the application to Stafford County and VDOT for all residential development adjacent to a freeway/interstate to determine if noise abatement walls shall be required. VDOT State Noise Abatement Policy, effective January 1, 1997 as amended, shall be applicable. The U.S. Code of Federal Regulations part 772(23 CFR 772) will be the guiding document for the analysis and abatement of highway traffic noise.
 - c. If a noise abatement wall is required, it shall be the responsibility of the developer/development to coordinate the location, design, construction and maintenance of the wall with VDOT officials. This includes providing funds that VDOT may not receive as a result of the funding programs described in the U.S. Code of Federal Regulations part 772 (23 CFR 772).
 - d. The wall shall be shown on the approved preliminary plan with a note stating at what phase the wall will be constructed. The plan shall show any construction easements that may be required to construct the wall.
 - e. If the noise abatement wall is required and is not eligible for funding per the U.S. Code of Federal Regulations part 772 (23 CFR 772) then alternative means to best satisfy the results of the study must be approved via a Departure from Design Standards.
- (1) **Residential development adjacent to Freeways/Interstates**
- a. The buffer yard width is 100'with 325 Plant units per every 100 linear feet.
- (2) **Non-residential development adjacent to Freeways/Interstates**
- a. The buffer yard width is 60 feet with 132 Plant units per every 100 linear feet.

Section 110.2 Street Buffering along arterial and major collector streets.

Buffer requirements for any development along these streets designated by VDOT as arterial and major collector streets in which direct vehicular access from development is limited.

(1) Major Residential subdivisions adjacent to an arterial and major collector street.

(a) The buffer yard width is 15 feet with 21 Plant units per every 100 linear feet.

(b) Per Section 22-153 of the Subdivision Ordinance, the buffer yard shall be an open space parcel, except A-1 and A-2 zoning districts. This open space parcel will be under the ownership of the homeowners association for that subdivision and used exclusively for the purpose of providing the required buffer yard.

(c) Plantings shall not be located in an area that may cause an obstruction of view along the street or within the area determined to be the line of sight for any intersection.

(2) Non-residential development adjacent to an arterial and major collector street.

(a) Buffer yard width is 25 feet with 75 Plant units per every 100 linear feet.

(b) Planting shall not be located in an area that may cause an obstruction of view along the street or within the area determined to be the line of sight for any intersection.

Section 110.3 Transitional Buffers

A transitional buffer may be required if the use of an adjacent property is different than the proposed development. See Table 1 to determine if a transitional buffer will be required. The

transitional buffer shall be required along the entire length of the property line abutting the use that impacts the development.

If a specific use is not listed, the Zoning Administrator shall determine the category in which the unlisted use will be within.

- (a) Per Section 22-153 of the Subdivision Ordinance, the transitional buffer on residential zoned properties, except A-1 and A-2, shall be an open space parcel. The open space parcel shall be owned and maintained by an HOA for the subdivision.
- (b) If the developing property with a residential use is adjacent to a vacant residential or agriculture zoned property or property proposed to be a residential use according to an approved General Development Plan (GDP) then the developing property does not have to provide a transitional buffer.
- (c) If the developing property with a non-residential use is adjacent to vacant property that is residential or agriculture zone or property proposed to be a residential use according to an approved GDP, then the developing property needs to provide 100% of the required buffer for the highest intense residential use on Table 2 permitted on the adjacent property.
- (d) If the developing property with a residential use is adjacent to a vacant property that is non-residential zone or proposed to be a non-residential use according to an approved GDP, then the developing property needs to provide 100% of the required buffer for the highest intense use permitted on the adjacent property zoning district.
- (e) If the developing property with a non-residential use is adjacent to a vacant property that is a non-residential zone or property proposed to be a non-residential use according to an approved GDP or Conditional Use Permit (CUP), then the developing property does not have to provide a transitional buffer.

- (f) If a portion of the required transitional buffer has been established on the adjacent parcel, either as a transitional buffer or other regulations, then the developing property will only have to provide the remaining balance, including plant units that have not been provided.
- (g) Development of property zoned PD-2 (Planned development-2) is exempt from complying with Table 1.0, Transitional Buffer matrix.

Table 1.0 Transitional Buffer

TB-A - 20' wide with 65 plant units per every 100 lineal feet

TB-B - 35' wide with 115 plant units per every 100 lineal feet

TB-C - 50' wide with 162 plant units per every 100 lineal feet

TABLE 2 TRANSITIONAL BUFFERS MATRIX

| PROPOSED USE | ADJACENT USE | | | | | | | | | | | |
|---|--------------|---|---|---|---|----|---|---|---|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6* | 7 | 8 | 9 | 10 | 11 | 12 |
| <i>Residential Uses</i> | | | | | | | | | | | | |
| 1. ACTIVE AGRICULTURE | | A | A | B | B | B | B | C | C | C | C | C |
| 2. SINGLE FAMILY DETACHED | A | | A | B | B | B | B | C | C | C | C | C |
| 3. SF Attached/Multifamily | A | A | | A | B | B | B | B | C | C | C | C |
| 4. DESIGNATED HISTORIC SITES - includes bed & breakfast | B | B | A | | A | B | B | B | C | C | C | C |
| <i>Public / Quasi Public</i> | | | | | | | | | | | | |
| 5. Active Recreation Facilities. Include outdoor recreational enterprises & community center | B | B | B | A | | A | A | B | B | B | C | C |
| 6. PUBLIC FACILITIES - treatment plants, fire/rescue stations, railroads* | B | B | B | B | A | | A | B | B | B | C | C |
| 7. INSTITUTIONAL- Schools, places of worship, day care facilities. | B | B | B | B | A | A | | A | B | B | B | C |
| <i>Non-Residential Uses</i> | | | | | | | | | | | | |
| 8. CARE FACILITIES - Retirement housing, nursing/convalescent homes, assisted care, hospitals, emergency fac., Animal Hospital, veterinarian office, kennels | C | C | B | B | B | B | A | | A | B | B | C |
| COMMERCIAL/OFFICE/RETAIL - includes hotels, motels, banks,restaurants, drive thru's, theaters, club/lodge/fraternal organizations, indoor recreational enterprises, contractors business without outside storage, funeral homes | C | C | C | C | B | B | B | A | | A | B | C |
| 10. AUTO SALES, REPAIR & SERVICE - includes vehicle fuel sales (gas station), Car Wash (not truck wash) & vehicle rentals | C | C | C | C | B | B | B | B | A | | A | B |
| 11. LIGHT INDUSTRIAL/MANU - includes mini-storage, wholesale business, contractor business with outside storage, printing/publishing/engraving, research facilities | C | C | C | C | C | C | B | B | B | A | | A |
| 12. HEAVY INDUSTRIAL - Manufacturing, processing- includes Auto Salvage, Junk & Graveyards, recycling, truck/freight terminal, truck wash | C | C | C | C | C | C | C | C | C | B | A | |
| *Excludes correction facilities | | | | | | | | | | | | |
| Ord. No. O06-64, 9-19-06 | | | | | | | | | | | | |

Section 111. - 119. Reserved

Landscaping

Section 120.0 Landscaping

All development may be subject to Sections 120.1, 120.2, and 120.3 of this document. The sections will determine the location, width and plant units for each planting area to provide landscaping. Paragraphs (a) and (b) are applicable to all planting areas.

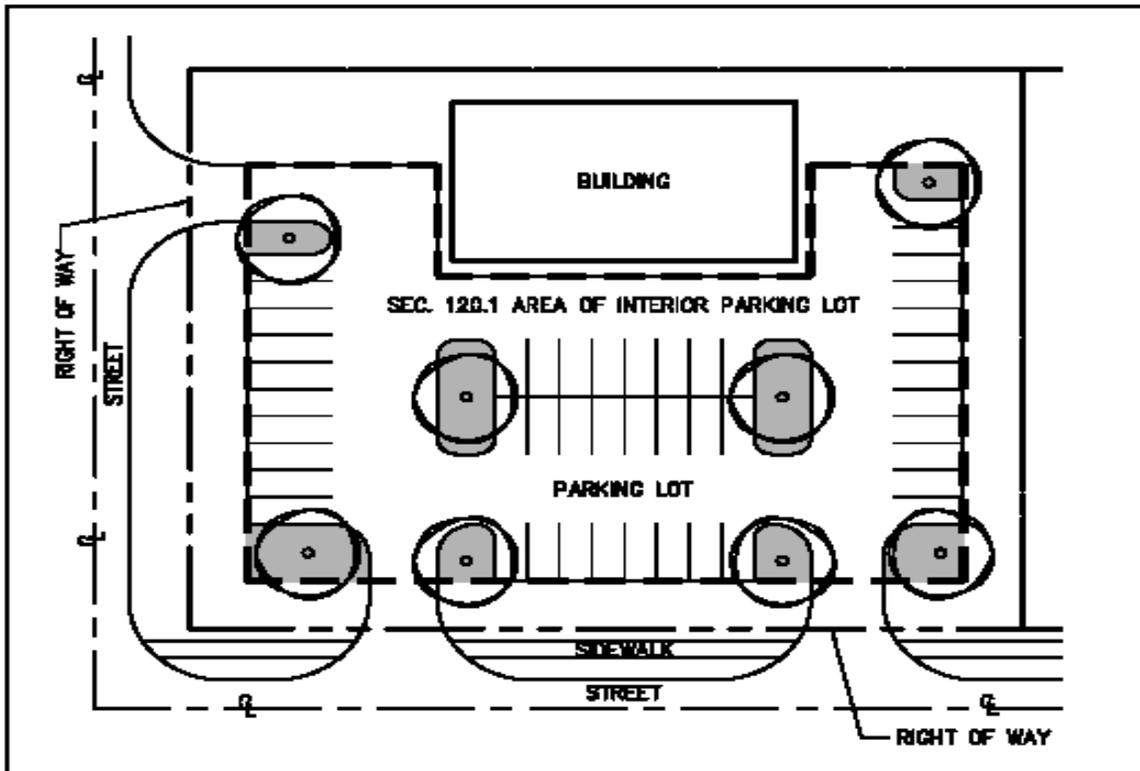
- (a) Plant Units
 - Canopy = 10 p.u.'s each
 - Understory = 7 p.u.'s each
 - Evergreen = 7 p.u.'s each
 - Shrubs = 1 p.u. each
- (b) When the planting area abuts a street or property line, it shall be provided within twenty-five (25) feet from the street or property line

Section 120.1 Parking Lots, Interior

- (a) All parking lots consisting of more than 24 parking spaces shall provide landscaping within the boundaries of the parking lot.
- (b) The Limits of the Interior Parking Lot Planting Area will include all parking spaces, drive isles and planting areas. It will not include any area associated with loading spaces unless the loading spaces are within the parking area and not along the perimeter of the parking area.
- (c) Thirty (30) square feet of planting area for every parking space provided shall be required within the Limits of the Interior Parking Lot Planting Area.
- (d) 12 Plant Units for every 300 square feet of Planting Area
- (e) Parking spaces located within a building or structure (parking garage) shall not be subject to the requirements of paragraphs (3) and (4).

- (f) Low Impact Development (LID). When all or a portion of the Planting Area within the parking area is used for LID the following steps will be used to determine the landscaping requirements for the planting area that is not utilizing LID.
- (1) Determine the required square footage of Planting area per Section 120.1(c).
 - (2) Determine the square footage of planting area utilizing LID.
 - (3) Subtract Paragraph (2) from (1).
 - (4) Provide the balance square footage of planting area required and provide landscaping in accordance with 120.1(d) above for the remaining balance only.
 - (5) All planting areas utilizing LID is exempt from 120.1(d) above.
 - (6) None of the landscaping provided in LID areas count towards the plant unit requirements for paragraph (4) above.

Example for Area of Interior parking Lot

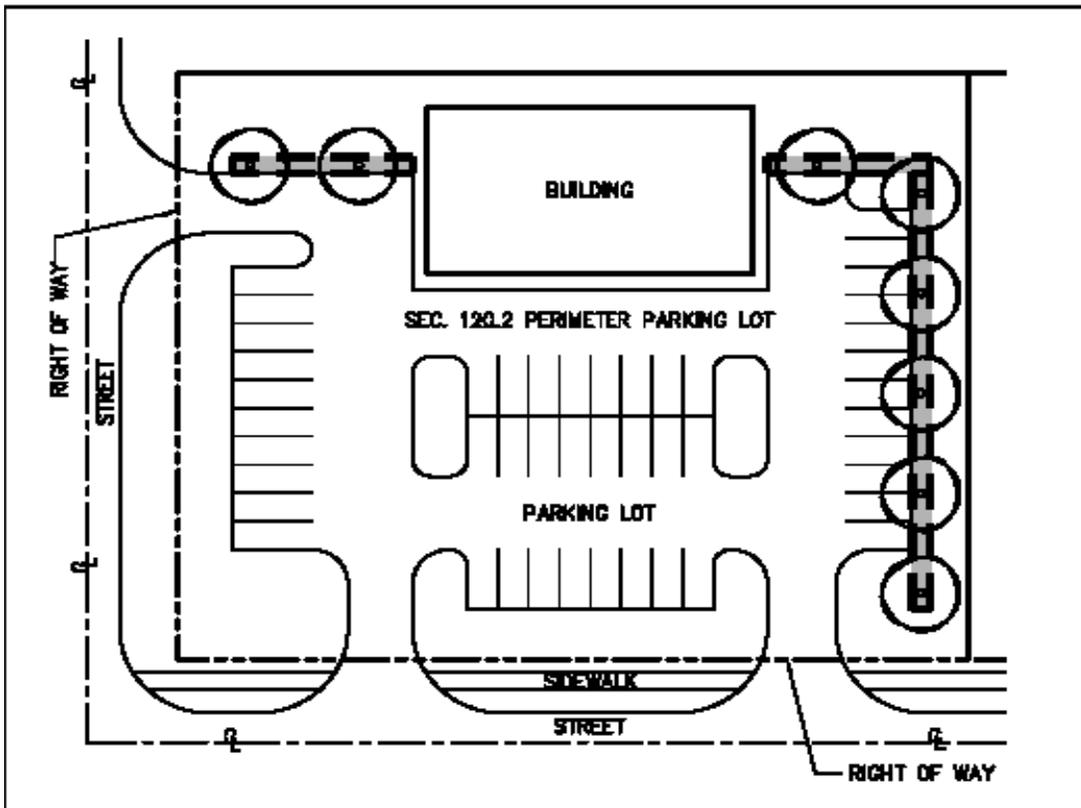


Section 120.2 Parking Lot, Perimeter

A planting area shall be provided along the perimeter of a parking lot that abuts a property line.

- (a) If the planting area between the parking lot and the property line is subject to Section 110.3, Transitional Buffers of this document, then this section is exempt.
- (b) The planting area shall be 5 feet wide with 35 Plant Units per every 100 net linear feet of the perimeter of the parking lot.
- (b) If any portion of the planting area is utilizing LID, that portion is exempt from this requirement.

Example of Area of Parking Lot Perimeter

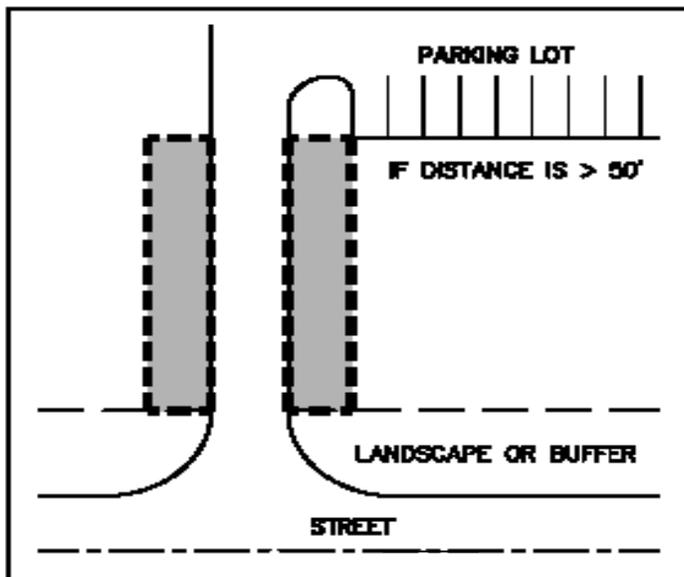


Section 120.3 Parking Lot, Vehicle Access Drive

A planting area shall be provide on both sides of an vehicular access drive, that is not a public street, between a required landscape or buffer yard and the parking lot if the distance of the vehicular access drive exceeds fifty (50) feet.

- (c) If the planting area between the vehicle access drive and the property line is subject to Section 110.3, Transitional Buffers of this document, then this section is exempt.
- (b) The planting area shall be 5 feet wide with 35 Plant Units per every 100 net linear feet of vehicle access drive.
- (c) If any portion of the planting area is utilizing LID, that portion is exempt from this requirement.

Example for Vehicle Access Drive Landscape Area



Section 120.4 Landscaping, Street Trees

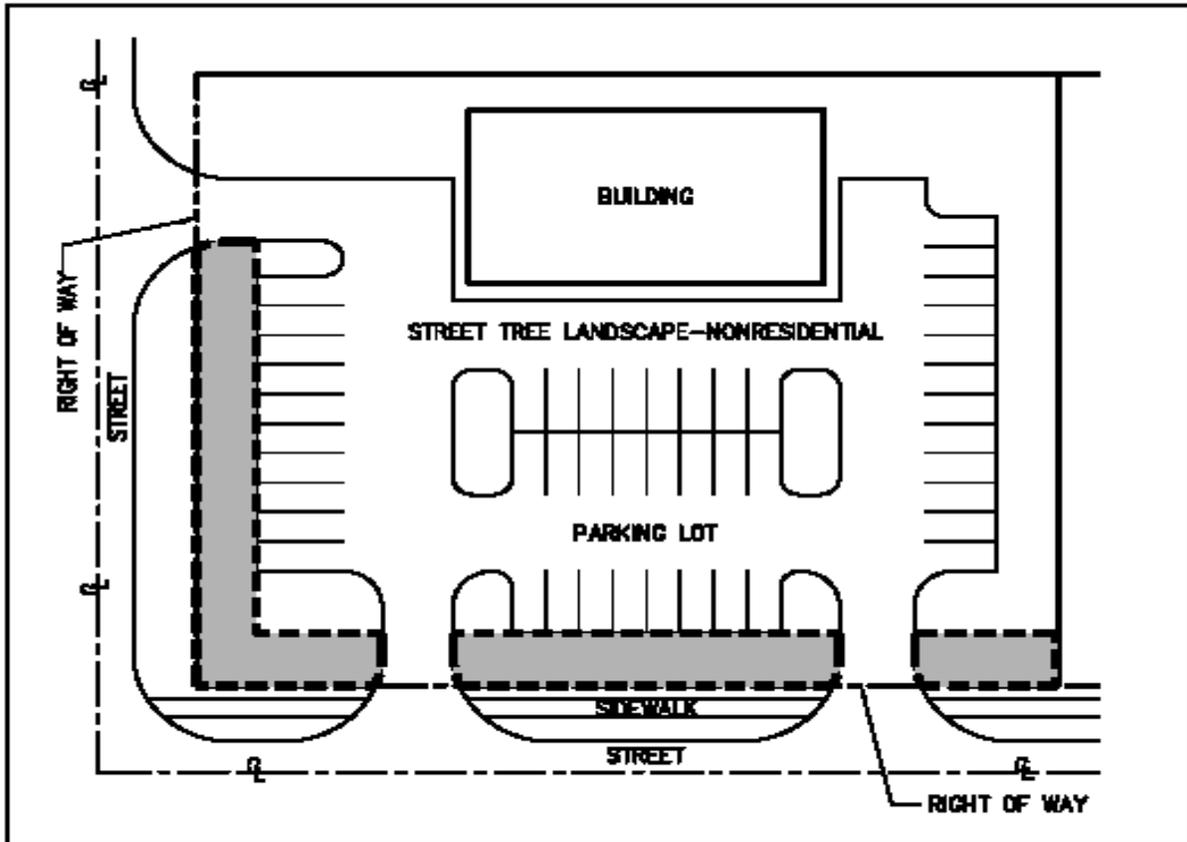
(1) Residential

- (a) A planting area shall be provided along the frontage for all streets abutting lots of a major subdivision that is not subject to the requirements of Sections 110.1 and 110.2 of this document.
- (b) The planting area shall be 10 feet wide with 10 plant units for every 100 net linear feet of street frontage. Shrubs can not be used towards the plant unit totals.
- (c) The trees shall be spaced a maximum of 100 feet apart and there shall be at least one (1) tree for every lot. The trees shall not be located within the right-of-way.

(2) Non-residential

- (a) A planting area shall be provided along the frontage for all streets abutting a non-residential development that is not subject to the requirements of Sections 110.1 and 110.2 of this document.
- (b) The distance of street frontage shall not include any area used for vehicular access.
- (c) The landscape requirements shall not be provided within a utility easement if the utility easement is not perpendicular to the street. The landscape requirements shall be provided outside of the easement.
- (d) The planting area shall be 10 feet wide with 50 Plant Units per every 100 net linear feet of street frontage.

Example of Street Trees Landscaping



Section 121. - 129. Reserved

Screening

Section 130. Screening

The uses listed in Section 28-88 of the Zoning Ordinance shall be screened from any public street or adjacent properties by one (1) means of screening described below.

If the use to be screened is not the primary business or use on the property and is leased from the property owner then the provisions being provided to screen the use shall be within the lease area and under the responsibility of the lessee not the property owner.

- (1) Evergreen screen, 15 foot wide strip providing 2 staggered rows of evergreen trees at least 6 feet tall when planted and separated a minimum of 8 feet.
- (2) 8' high solid wall
- (3) 8' high board-on-board/sight-tight fence
- (4) 5' high berm with 20 evergreen trees and 50 shrubs for every 100 lineal feet of street frontage.

Section 131. - 139. Reserved

Credits

Substitution

**Alternative
Compliance**

**Departure from
Design Standards**

Section 140. Credits

A development may establish credit for existing vegetation provided the area being protected is equal to or greater than the required buffer and the amount of plant units is equal to or greater than the amount required.

- (a) Existing vegetation is of sufficient size and density to meet the intent of the document. The applicant shall include with the construction and or site plan a plant inventory delineating all trees four (4) inches dbh and greater, specify the scientific and common names of species, and the tree save area must provide an acceptable cover of tree stand.
- (b) Plant Units for trees to be saved:
 - (1) 4" - 6" DBH = 10 Plant Units
 - (2) 7" -12" DBH = 15 Plant Units
 - (3) 13" - 17" DBH = 20 Plant Units
 - (4) 18" - 24" DBH = 25 Plant Units
 - (5) 25" DBH + = 30 Plant Units
- (c) Trees must be structurally sound, healthy, without disease or insect infestation.
- (d) The dripline shall be surveyed and the limits of clearing shall be established ten (10) feet beyond the surveyed dripline to reduce the impacts generated from installation of silt fences and diversion dikes and equipment.
- (e) Buildings shall be located no closer than fifteen (15) feet from the dripline unless waived by the agent.
- (f) Tree protection areas shall be established prior to clearing. The tree protection area shall be established with orange mesh fencing and clearing shall not exceed that shown on the plan. Any encroachment shall be deemed a violation of the credit approval and the owner/developer will be required to replant the area and resubmit a plan to the county showing the required planting for the buffer. A letter of request along with a restoration plan must be submitted to the agent for approval. The agent may deem that the site meet the

requirements of this manual as a penalty of the encroachment.

- (g) All tree protection devices shall remain in place until the project is completed, inspected and approved by the agent.
- (h) When a portion of a buffer yard shown on the plan does not contain a significant stand of vegetation for preservation and does not meet the required plant units for the area, all attempts must be made to save the existing trees. The applicant must show on the plan the existing trees to be saved and the proposed trees needed to comply with the required plant units. If the buffer yard location has existing trees and they are to be removed then the applicant must submit a letter of request to remove the existing trees with an attached mitigation plan to the agent addressing deficiencies found in protecting the existing trees.
- (i) The planting area and plant unit requirements for Section 120.1, Parking Lot, Interior, of this document shall be reduced by fifty (50) percent if the applicant retains existing vegetation along the perimeter of the parking lot provided the area being saved doubles the amount of plant units and planting areas required for the interior landscape area. If the same tree saved area is subject to other sections of this document, it must also meet the plant unit and width requirements of that section in order to be used towards the reduction of plant units and planting areas for Section 120.1. If additional trees are required in the tree save area to comply with other sections of this document then it can not be used to reduce the amount of plant units and planting areas for Section 120.1, Interior parking lot requirements.

Section 141. Substitution

The agent may grant the approval of substitution of plants within a buffer or planting area provided the plants unit requirements remain equal to or greater than the amount required for that

buffer or planting area. This does not permit the width of the required buffer or planting area to be reduced.

If the request for substitution is made after an application has been approved, then the applicant must submit the request in writing to the agent. The approved response from the agent shall be attached to the approved plan. The request must specify the trees being substituted and provide the reason for the substitution. The request must demonstrate how the substitution meets or exceeds the plant unit requirements for the buffer yard or planting area in which the substitution is being requested.

Section 142. Alternative Compliance

The agent may grant a request for an alternative compliance to reduce the width requirements of a buffer or planting area or minimum square footage of planting area requirements of a section or sections of this document, provided that the plant units are equal to or greater than the requirements of that section or sections.

The request shall demonstrate other provisions have been made to facilitate the reduction in the required width or square footage for planting areas.

The Alternative Compliance is granted for the section or sections of this document in conjunction with a subdivision, construction or site plan application.

The request for an alternative compliance shall be submitted to the agent in writing. The letter shall explain the justification for the alternatives being sought and demonstrate how the plan will provide an equal or exceed the minimum amount of plant units required for the buffer or planting area.

The agent shall provide a letter granting the alternative compliance. The original request and the response letter from the agent shall be attached to the plans in which the alternative compliance was granted for.

The alternative compliance is granted for a specific section or sections of this document as part of a specific plan and can not be used in conjunction with any other sections of this document for the same property or another property.

If the application expires then the granting of any alternative compliance associated with the plan shall expire also.

Section 143. Departure from Design Standards

If relief from the amount of plant units requirements for a section or sections of this document is needed, a request for a departure from design standards is required. If a request for alternative compliance was not approved, then a departure to reduce the width requirements for buffer yards and planting areas or the minimum square footage requirements for planting areas may be submitted. The departure from design standards shall be approved by the Planning Commission except as described in paragraph (f) below.

- (a) The application shall be made on forms approved by the agent and shall include any required fee and required analysis of the request. The application for Departure from Design Standards along with the fee associated with the application must be submitted to the Planning Department.
- (b) The applicant must show hardship for the Departure and show any techniques being provided to accommodate the initial requirements.
- (c) If the departure is a result of a denied request for alternative compliance, then the request for the alternative compliance and the response letter from the agent shall be submitted with the application.
- (d) Except for provisions of paragraph (f) below, the decision of the application shall be after a public hearing by the Planning Commission is held.
- (e) An appeal of the decision of the Planning Commission shall be submitted to the Board of Supervisors.
- (f) If a departure is requested for Section 110.3, Transitional Buffer and the adjacent property is of the same zoning district, then the agent may approve a departure provided a notarized letter of consent is obtained from the owner of the adjacent property and submitted with the request for the departure. If the agent decides not to make a decision on the

departure, the request shall be submitted to the Planning Commission as stated in paragraph (d) above for a decision.

Part 2

Construction Standards

Section 150. Purpose

The purpose of this document is to set forth provisions and regulations for construction standards of landscaping, buffering and screening within Stafford County upon new and/or existing development that requires such action.

Section 151. Installation and Maintenance Criteria

(A) All required landscaping shall be installed and maintained in a sound, workmanship-like manner and according to accepted, good planting practices and procedures with the quality of plant materials as described in the most recent edition of the *Standardized Landscape Specifications for the Commonwealth of Virginia* published by the Virginia Nursery and Landscape Association (VNLA), available for reference in the Stafford County Department of Planning & Community Development, unless or in addition to requirements set forth within this document.

1. Except for single-family detached residential uses, a performance bond shall be posted to ensure replacement of plant material based on the guidelines found in the *Standardized Landscape Specifications for the Commonwealth of Virginia - Part 1-1.06*.
2. Except under certain circumstances that must be approved by the Stafford County Department of Planning & Community Development Director or his/her designee, reductions of any landscape performance bonds will not be granted.

Section 152. Plant Type, Size and Characteristics

(A) All required landscaping shall be of the types and minimum sizes set forth in this Section. (See Table 3 for a complete list of approved Stafford County plant species)

1. Canopy trees shall have a minimum caliper of three (3) inches and shall be a minimum of twelve (12) feet in height above the highest root at the time of planting.
 - a. When more than ten (10) canopy trees are required for a development. Two (2) or more species shall be selected within Table 3 to reduce the potential for infection of trees.

2. Evergreen trees shall have a minimum caliper of two (2) inches and shall be a minimum of six (6) feet in height above the highest root at the time of planting.
3. Understory trees shall be a minimum of six (6) feet in height above the highest root at the time of planting
 - a. When more then ten (10) understory trees are required for a development. Two (2) or more species shall be selected within Table 3 to reduce the potential for infection of trees.
4. Shrubs shall be a minimum of two and one-half (2½) feet in height above the highest root at the time of planting and nursery grown in a minimum five-(5) gallon container.
 - a. When more then ten (10) shrubs are required for a development. Two (2) or more species shall be selected within Table 3 to reduce the potential for infection of shrubs.

Section 153. Sample Planting Schedules

Landscape plans should include all applicable schedules selected from those shown below to document required and proposed quantities for all items required by this document.

Sample Schedule for Section 110.1 & 110.2

Street Buffers along Freeway/Interstate & Arterial/ Major Collector Streets

1. Residential or non-residential: (circle one)
2. Buffer yard width: _____ feet
3. Linear feet of buffer yard along Interstate or Arterial/Major Coll Street: _____ feet
4. Plant unit required: _____
5. Existing plant units getting credit per Section 140: _____
6. Plant units required in buffer yard: _____

7. Number of canopy trees provided: _____ x 10 p.u. = _____ p.u.
Number of understory trees provided: _____ x 7 p.u. = _____ p.u.
Number of evergreen trees provided: _____ x 7 p.u. = _____ p.u.
Number of shrubs provided: _____ x 1 p.u. = _____ p.u.

8. Total number of plant units provided in buffer yard: _____

Sample Schedule for Section 110.3

Transitional Buffer

(Separate Schedule needed for each type of Transitional Buffer required)

1. Proposed Use per Table 2; Number ____ . Use _____
2. Adjacent property which requires buffer; N, S, E or W: (circle one)
3. Adjacent property use per Table 2: Number ____, Use _____
4. Transitional Buffer required per Table 2; A, B or C: (circle one)
5. Buffer yard width: _____ feet
6. Linear feet of buffer yard required along property line: _____ feet
7. Plant units required: _____
8. Existing plant units getting credit per Section 140: _____
9. Plant units required in buffer yard: _____

10. Number of canopy trees provided: _____ x 10 p.u. = ____ p.u.
 Number of understory trees provided: _____ x 7 p.u. = ____ p.u.
 Number of evergreen trees provided: _____ x 7 p.u. = ____ p.u.
 Number of shrubs provided: _____ x 1 p.u. = ____ p.u.

11. Total number of plant units provided in buffer yard: _____

Sample Schedule for Section 120.1

Parking Lot, Interior

1. Number of parking spaces: ____ x 30 = _____ planting area
2. Amount of planting area utilizing LID: _____
3. Amount of planting area requiring landscaping: _____
4. Total plant unit required (#3 / 300 x 12): _____

5. Number of canopy trees provided: _____ x 10 p.u. = ____ p.u.
 Number of understory trees provided: _____ x 7 p.u. = ____ p.u.
 Number of evergreen trees provided: _____ x 7 p.u. = ____ p.u.
 Number of shrubs provided: _____ x 1 p.u. = ____ p.u.

6. Total number of plant units provided in planting area: _____

Sample Schedule for Section 120.2

Parking Lot, Perimeter

1. Linear feet of parking lot perimeter adjacent to property line(s): _____ feet
2. Net linear feet per Section 200, Definitions: _____ feet
3. Total plant units required (#2/100 x 35): _____
4. Number of canopy trees provided: _____ x 10 p.u. = _____ p.u.
 Number of understory trees provided: _____ x 7 p.u. = _____ p.u.
 Number of evergreen trees provided: _____ x 7 p.u. = _____ p.u.
 Number of shrubs provided: _____ x 1 p.u. = _____ p.u.
5. Total number of plant units provided in planting area: _____

Sample Schedule for Section 120.3

Parking Lot, Vehicle Access Drive

1. Linear feet of the vehicle access drive to the parking lot : _____ feet
2. Net linear feet per Section 200, Definitions: _____ feet
3. Total plant units required (#2/100 x 35): _____
4. Number of canopy trees provided: _____ x 10 p.u. = _____ p.u.
 Number of understory trees provided: _____ x 7 p.u. = _____ p.u.
 Number of evergreen trees provided: _____ x 7 p.u. = _____ p.u.
 Number of shrubs provided: _____ x 1 p.u. = _____ p.u.
5. Total number of plant units provided in planting area: _____

Sample Schedule for Section 120.4

Landscaping, Street trees - RESIDENTIAL

1. Linear feet of street frontage: _____ feet
2. Net linear feet per Section 200, Definitions: _____ feet
3. Total plant units required (#2/100 x 10): _____

4. Number of canopy trees provided: _____ x 10 p.u. = _____ p.u.
Number of understory trees provided: _____ x 7 p.u. = _____ p.u.
Number of evergreen trees provided: _____ x 7 p.u. = _____ p.u.

5. Total number of plant units provided in planting area: _____

Sample Schedule for Section 120.4

Landscaping, Street trees – NON-RESIDENTIAL

1. Linear feet of street frontage: _____ feet
2. Net linear feet per Section 200, Definitions: _____ feet
3. Total plant units required (#2/100 x 50): _____

4. Number of canopy trees provided: _____ x 10 p.u. = _____ p.u.
Number of understory trees provided: _____ x 7 p.u. = _____ p.u.
Number of evergreen trees provided: _____ x 7 p.u. = _____ p.u.
Number of shrubs provided: _____ x 1 p.u. = _____ p.u.

5. Total number of plant units provided in planting area: _____

Sample Schedule for Section 140.

Credits

1. Buffer yard receiving credit: _____
2. Total plant units required for buffer yard: _____ p.u.s

3. Number of trees between 4" & 6" DBH _____ x 10 = _____ p.u.
4. Number of trees between 7" & 12" DBH _____ x 15 = _____ p.u.
5. Number of trees between 13" & 17" DBH _____ x 20 = _____ p.u.
6. Number of trees between 18" & 24" DBH _____ x 25 = _____ p.u.
7. Number of trees 25" DBH or greater _____ x 30 = _____ p.u.

Total plant units receiving credits = _____ p.u

Table 3.0 List of Permitted Trees and Shrubs

| Scientific Name | Common Name | Type | 10-Year Spread |
|---|------------------------|------------|----------------|
| <i>Acer rubrum</i> | Red Maple | Canopy | 12'-15' |
| <i>Acer saccharum</i> | Sugar Maple | Canopy | 12'-15' |
| <i>Betula nigra</i> | River Birch | Canopy | 13'-16' |
| <i>Celtis occidentalis</i> | Common Hackberry | Canopy | 13'-16' |
| <i>Fagus grandifolia</i> | American Beech | Canopy | 10'-12' |
| <i>Fagus sylvatica</i> | European Beech | Canopy | 10'-12' |
| <i>Fraxinus pennsylvanica</i> | Green Ash | Canopy | 10'-12' |
| <i>Gleditsia triacanthos inermis</i> | Thornless Honey Locust | Canopy | 13'-16' |
| <i>Liquidambar styraciflua</i> | Sweetgum | Canopy | 12'-15' |
| <i>Liriodendron tulipifera</i> | Tulip Tree | Canopy | 12'-15' |
| <i>Platanus occidentalis</i> | Sycamore | Canopy | 16'-18' |
| <i>Quercus alba</i> | White Oak | Canopy | 10'-12' |
| <i>Quercus coccinea</i> | Scarlet Oak | Canopy | 10'-12' |
| <i>Quercus michauxii</i> | Swamp Chestnut Oak | Canopy | 10'-12' |
| <i>Quercus palustris</i> | Pin Oak | Canopy | 12'-15' |
| <i>Quercus phellos</i> | Willow Oak | Canopy | 10'-12' |
| <i>Quercus rubra</i> | Northern Red Oak | Canopy | 12'-15' |
| <i>Quercus velutina</i> | Black Oak | Canopy | 10'-12' |
| <i>Quercus virginiana</i> | Live Oak | Canopy | 10'-12' |
| <i>Tilia cordata</i> | Littleleaf Linden | Canopy | 10'-12' |
| <i>Cedrus deodara</i> | Deodar Cedar | Evergreen | 8'-10' |
| <i>Cunninghamia lanceolata</i> | China Fir | Evergreen | 8'-10' |
| <i>Cupressocyparis leylandi</i> | Leyland Cypress | Evergreen | 8'-10' |
| <i>Ilex aquifolium</i> | English Holly | Evergreen | 4'-6' |
| <i>Ilex opaca</i> | American Holly | Evergreen | 5'-7' |
| <i>Ilex vomitoria</i> | Yaupon Holly | Evergreen | 5'-7' |
| <i>Ilex x attenuata 'Fosteri'</i> | Foster's Holly | Evergreen | 6'-8' |
| <i>Ilex x 'Nellie R. Stevens'</i> | Nelly R. Stevens Holly | Evergreen | 7'-9' |
| <i>Juniperus virginiana</i> | Eastern Red Cedar | Evergreen | 3'-5' |
| <i>Pinus nigra</i> | Austrian Pine | Evergreen | 8'-10' |
| <i>Pinus strobus</i> | White Pine | Evergreen | 10'-12' |
| <i>Pinus thunbergiana</i> | Japanese Black Pine | Evergreen | 8'-10' |
| <i>Pinus virginiana</i> | Virginia Pine | Evergreen | 10'-12' |
| <i>Thuja occidentalis 'pyramidalis'</i> | Pyramidal Arborvitae | Evergreen | 3'-5' |
| <i>Thuja orientalis</i> | Oriental Arborvitae | Evergreen | 3'-5' |
| <i>Acer buergeranum</i> | Trident Maple | Understory | 8'-10' |
| <i>Acer palmatum</i> | Japanese Maple | Understory | 8'-10' |
| <i>Amelanchier arborea</i> | Downy Serviceberry | Understory | 10'-12' |
| <i>Cercis canadensis</i> | Redbud | Understory | 10'-12' |
| <i>Chionanthus virginicus</i> | White Fringe Tree | Understory | 8'-10' |
| <i>Cornus florida</i> | Flowering Dogwood | Understory | 8'-10' |
| <i>Cornus kousa</i> | Kousa Dogwood | Understory | 10'-12' |
| <i>Cornus mas</i> | Cornelian Cherry | Understory | 6'-8' |
| <i>Cotinus coggygria</i> | Smoke Tree | Understory | 8'-10' |

| | | | |
|-----------------------------------|----------------------|------------|---------|
| <i>Crataegus phaenopyrum</i> | Winter King Hawthorn | Understory | 8'-10' |
| <i>Franklinia altamaha</i> | Franklin Tree | Understory | 8'-10' |
| <i>Koelreuteria paniculata</i> | Golden Rain Tree | Understory | 8'-10' |
| <i>Lagerstroemia indica</i> | Common Crapemyrtle | Understory | 6'-8' |
| <i>Magnolia stellata</i> | Star Magnolia | Understory | 5'-7' |
| <i>Magnolia virginiana</i> | Sweetbay Magnolia | Understory | 8'-10' |
| <i>Magnolia x soulangiana</i> | Saucer Magnolia | Understory | 8'-10' |
| <i>Prunus cerasifera</i> | Cherry Plum | Understory | 8'-10' |
| <i>Prunus serrulata</i> | Kwanzan Flowering | | |
| 'Kwanzan' | Cherry | Understory | 8'-10' |
| <i>Salix matsudana 'Tortuosa'</i> | Corkscrew Willow | Understory | 10'-12' |
| <i>Sassafras albidum</i> | Common Sassafras | Understory | 8'-10' |
| <i>Abelia grandiflora</i> | Glossy Abelia | Shrub | |
| <i>Aucuba japonica</i> | Japanese Aucuba | Shrub | |
| <i>Berberis julianae</i> | Wintergreen Bayberry | Shrub | |
| <i>Berberis thunbergii</i> | Japanese Bayberry | Shrub | |
| <i>Buddleia davidii</i> | Butterfly Bush | Shrub | |
| <i>Buxus sempervirens</i> | American Boxwood | Shrub | |
| <i>Buxus microphylla</i> | | | |
| <i>japonica</i> | Japanese Boxwood | Shrub | |
| <i>Calycanthus floridus</i> | Carolina Allspice | Shrub | |
| <i>Camellia japonica</i> | Japanese Camellia | Shrub | |
| <i>Camellia sasanqua</i> | Sasanqua Camellia | Shrub | |
| <i>Chaenomeles speciosa</i> | Flowering Quince | Shrub | |
| | Summersweet | | |
| <i>Clethra alnifolia</i> | Clethra | Shrub | |
| <i>Daphne odora</i> | Winter Daphne | Shrub | |
| <i>Deutzia gracilis</i> | Slender Deutzia | Shrub | |
| <i>Euonymus alatus</i> | Burning Bush | Shrub | |
| <i>Exochorda racemosa</i> | Pearl Bush | Shrub | |
| <i>Forsythia intermedia</i> | Spring Forsythia | Shrub | |
| <i>Hammamelis mollis</i> | Chinese Witch Hazel | Shrub | |
| <i>Hammamelis vernalis</i> | Vernal Witch Hazel | Shrub | |
| <i>Hydrangea macrophylla</i> | Bigleaf Hydrangea | Shrub | |
| <i>Hydrangea quercifolia</i> | Oakleaf Hydrangea | Shrub | |
| <i>Ilex cornuta 'Burfordi'</i> | Burford Holly | Shrub | |
| <i>Ilex verticulata</i> | Winter Berry | Shrub | |
| <i>Juniperus chinensis</i> | | | |
| <i>pfitzeriana</i> | Pfitzer Juniper | Shrub | |
| <i>Juniperus chinensis</i> | Robusta Green | | |
| 'Robusta Green' | Juniper | Shrub | |
| <i>Juniperus horizontalis</i> | | | |
| 'Plumosa' | Andorra Juniper | Shrub | |
| <i>Ligustrum japonicum</i> | Wax Ligustrum | Shrub | |
| <i>Ligustrum vicary</i> | Vicary Golden Privet | Shrub | |
| <i>Mahonia aquifolium</i> | Oregon Grape Holly | Shrub | |
| <i>Mahonia bealia</i> | Leather Leaf Mahonia | Shrub | |
| <i>Nandina domestica</i> | Nandina | Shrub | |
| <i>Piers japonica</i> | Japanese Piers | Shrub | |
| <i>Pinus mugo</i> | Mugo Pine | Shrub | |
| <i>Potentilla fruticosa</i> | Bush Conquefoil | Shrub | |
| <i>Punica granatum</i> | Pomegranate | Shrub | |
| <i>Pyracantha coccinea</i> | Pyracantha | Shrub | |

| | | |
|---------------------------------------|----------------------|-------|
| <i>Raphiolepis umbellata</i> | India Hawthorn | Shrub |
| <i>Rhododendron calendulaceum</i> | Flame Azalea | Shrub |
| <i>Spirea prunifolia</i> | Bridal Wreath Spirea | Shrub |
| <i>Spirea thunbergi</i> | Thunberg Spirea | Shrub |
| <i>Syringa persica</i> | Persian Lilac | Shrub |
| <i>Viburnum carlesi</i> | Fragrant Viburnum | Shrub |
| | European Highbush | |
| <i>Viburnum opulus</i> | Cranberry | Shrub |
| <i>Viburnum rhytidophyllum</i> | Leatherleaf Viburnum | Shrub |
| <i>Viburnum tomentosum</i> | Doublefile Viburnum | Shrub |

**Design and Construction Standards for Landscaping, Buffering
and Screening (DCSL)
Stafford County, Virginia**

SECTION 200

DEFINITIONS

Section 200. Definitions.

Buffer yard - A yard improved with landscaping and screening materials required between different intensities or between adjoining land uses for the purpose of decreasing the potential impact of different uses. The buffer yard is intended to recreate or preserve native woodlands. The buffer yard is also intended to remain free of buildings, or parking areas. The minimum buffer width is generally a uniform width across the entire length of the common property line between lots on which uses are located that require a buffer yard.

Caliper - the diameter measurement of the trunk of trees, taken six (6) inches above ground level up to and including four (4) inch caliper size, and twelve inches above ground level for caliper size in excess of four (4) inches.

Canopy - a type of tree that, under normal growth conditions, will compose the top layer or canopy of vegetation and generally reach a mature height at or above forty (40) feet. A tree that, at the time of planting, is at least twelve (12) feet tall above the highest root, has a minimum caliper of three (3) inches diameter at breast height (DBH), and is one of the species listed in this chapter for canopy trees.

DBH (Diameter at Breast Height) - The level of the tree in which the diameter is measured to determine the caliper.

Evergreen - a type of tree that, under normal growth conditions, will grow to maturity beneath canopy trees and generally reach a mature height between ten (10) and forty (40) feet. Evergreen trees produce vegetation year-round and can assist with more efficient screening techniques.

Landscaping - The introduction or selective retention of flourishing trees and shrubs carefully selected and arranged to perform a design purpose or environmental function, such as controlling visual direction, providing definition to architecture, modifying climate, filtering air pollution,

and controlling runoff and erosion. Trees and shrubs shall be the primary plant materials to apply to the development of the required landscaping and street planting. Street planting may include berms and low walls in conjunctions with trees and shrubs.

Privacy/Opaque Fence - A fence at least six (6) feet in height and does not allow the passage of radiant energy or light for all portions of the fence. Maintenance of the fence shall be in compliance with Section 28-89 of the Zoning Ordinance. Cloth, plastic or other fence covers attached to or inserted within a chain link fence shall not be permitted.

Net linear feet - The amount of linear footage along a street or property line that requires a planting area, not including any area used for vehicular access or LID or any area being saved under the requirements of Section 140, Credits, of this document. It may include sidewalks and utility easements that cross perpendicular through the landscape strip.

Planting area - Area of the property designated to provide the required planting of this document. It shall not include sidewalks and utility easements parallel to the street or property line for which the planting area is adjacent to.

Plant Units (p.u.)- A specific value assigned to each type of tree or shrub to determine the required amount of buffering or landscaping to be provided or credited within a designated area.

Screening - The method by which a view from one site to an adjacent site is shielded, concealed or hidden. Screening techniques may include, but not limited to: Fences, walls, hedges, berms or other features.

Shrubs - A type of plant with relatively low height, consisting of several stems rather than a main trunk. A plant that, at the time of planting, is at least three (3) feet tall as measured from the highest root, and is one of the species listed in this chapter for shrubs.

Understory - A type of tree that, under normal growth conditions, will grow to maturity beneath canopy trees and generally reach a mature height between ten (10) and forty (40) feet. A tree that, at the time of planting, is at least five (5) feet tall above the highest root and is one of the species listed in this chapter for understory trees.

Notes