Prince George's County, Maryland

Landscape Manual Update

Public Review Draft

July 2016

CLARION

Prepared by
Design Collective

In Association with
White & Smith
Spikowski Planning Associates
GB Place Making
Nelson/Nygaard
Mosaic Urban Partners
Justice & Sustainability Assoc.
The Planning and Design Center

Prince George's County Landscape Manual

TABLE OF CONTENTS

INTRODUCTION

SECTION 1: GENERAL INFORMATION AND PROCEDURES

1.1 APPLICABILITY 12

1.2 APPROVAL PROCESSES 15

1.3 ALTERNATIVE COMPLIANCE 16

1.4 PLANT SUBSTITUTIONS 17

1.5 CERTIFICATION OF INSTALLATION OF PLANT MATERIALS 19

1.6 MAINTENANCE AND ENFORCEMENT 19

1.7 CERTIFICATE OF LANDSCAPE MAINTENANCE 20

SECTION 2: PLAN PREPARATION

2.1 PREPARATION OF LANDSCAPE PLANS 24

2.2 SUBMITTAL REQUIREMENTS 24

SECTION 3: LANDSCAPE ELEMENTS AND DESIGN CRITERIA

3.1 DESIGN ELEMENTS 30

3.2 DESIGN CRITERIA: FUNCTIONAL AND AESTHETIC VALUES OF PLANTS 30

3.3 LANDSCAPE FUNCTION 31

3.4 LANDSCAPE ELEMENTS 32

3.5 OTHER LANDSCAPE DESIGN CONSIDERATIONS 35

SECTION 4: LANDSCAPE STANDARDS

4.1 RESIDENTIAL REQUIREMENTS 44

4.2 REQUIREMENTS FOR LANDSCAPE STRIPS ALONG STREETS 57

4.3 PARKING LOT REQUIREMENTS 68

4.4 SCREENING REQUIREMENTS 82

4.5 STORMWATER MANAGEMENT FACILITIES 87

4.6 BUFFERING DEVELOPMENT FROM STREETS 90

4.7 BUFFERING INCOMPATIBLE USES 99

4.8 BUILDING FRONTAGE LANDSCAPE REQUIREMENTS 113

4.9 SUSTAINABLE LANDSCAPING REQUIREMENTS 126

4.10 STREET TREES (FOR PRIVATE STREETS) 130

4.11 REQUIREMENTS FOR NONRESIDENTIAL AND MIXED-USE DEVELOPMENT 136

GLOSSARY OF TERMS

142

APPENDICES

APPENDIX 1: ALTERNATIVE COMPLIANCE SUBMITTAL CHECKLIST 146

APPENDIX 2: PLANT SUBSTITUTION REQUEST FORM 148

APPENDIX 3: APPENDIX 3: PLANT LISTS 149

APPENDIX 4: LANDSCAPE SPECIFICATIONS AND PLANTING DETAILS 156

INTRODUCTION

Introduction

HISTORY

The purpose of the Prince George's County Landscape Manual is to enhance the quality of life of County residents, the appearance of communities, and the overall environmental health of Prince George's County by improving the design, sustainability, and quality of landscaping. This manual sets forth in one publication all of the regulations for landscaping, buffering, and screening that apply to development in Prince George's County. It establishes minimum mandatory standards, articulates design guidelines, provides options that allow greater creativity and flexibility in design, and establishes a procedure for approval of alternative methods of compliance with the standards.

On October 3, 1989, the Prince George's County Council approved Council Bill CB-1-1989, legislation that removed sections of the Prince George's County Zoning Ordinance ("the Zoning Ordinance") that addressed landscaping, buffering, and screening and consolidated them into the Landscape Manual. CB-1-1989 adopted the Landscape Manual by reference as part of the Zoning Ordinance. The Landscape Manual was first amended by CB-62-1990, and further amended in 1992 by CB-30-1992 and CB-91-1992, in 2008 by CB-29-2008, in 2010 by CB-65-2010, and in 2013 by CB-17-2013.

2010 COMPREHENSIVE UPDATE

The 2010 comprehensive update to the previously adopted Landscape Manual (1990) set a new standard of excellence in the design, sustainability, and quality of landscaping in the County and generates aesthetic, economic, environmental, and health benefits for the County's residents, businesses, and visitors. Goals and benefits from the 2010 update that remain important to the Landscape Manual include:

Aesthetic Benefits

a. Establish a greater sense of continuity within individual developments.

b. Ensure smoother visual transitions from one type of development to another.

c. Enhance the relationship between incompatible land uses, particularly between residential and commercial or industrial uses.

d. Define public and private spaces.

e. Screen unsightly views and provide privacy.

f. Provide visual relief from views of expansive paved areas, such as parking compounds.
g. Protect scenic and historic landscapes and sites.

Environmental and Health Benefits

a. Reduce heat islands, and minimize effects on microclimates.
b. Filter and reduce stormwater runoff.
c. Reduce greenhouse gases and improve air quality.
d. Promote energy conservation.
e. Increase pedestrian activity by creating safer pedestrian-friendly environments.
f. Reduce the negative effects of reflection and glare.
g. Control erosion.
h. Provide wildlife habitat.

Economic Benefits

a. Enhance commercial viability of an area or business.
b. Increase home values.
c. Minimize utility costs.

2017 COMPREHENSIVE UPDATE

The 2017 update maintains most of the existing regulations with the continued goals of creating more attractively landscaped outdoor spaces, providing modern landscaping standards for urban and transit-oriented development, protecting and restoring the environment, promoting the health of Prince Georgians, and promoting economic development within Prince George's County. Regulations requiring a greater sense of continuity within individual developments, creating a smoother visual transition from one development to another, and improved buffers between incompatible land uses that will reduce negative impacts of more-intensive uses on less-intensive, adjacent uses are also maintained, where appropriate. Parking lot design will continue to require more shade, reduced glare and heat build-up, and less promote visual monotony that is created by large expanses of pavement and parked cars.

INTRODUCTION

There are several 2017 Landscape Manual updates that correspond directly to key Plan 2035 Goals. Plan 2035 eliminates the three tiers of development established by the 2002 general plan and calls for higher-quality landscaping for multifamily and commercial developments. Plan 2035 designates Regional Transit Centers and Local Centers to support compact, mixed-use walkable development patterns. Plan 2035 also recommends maintaining (at a minimum) the County's overall 52 percent tree canopy coverage and it identifies enhanced environmental sustainability, improved water quality, decreased runoff, reduced heat island effect, and improved green infrastructure as important goals.

In response to these goals and others, the 2017 Landscape Manual removes previous references to the three tiers of development and provides standards relative to the four major base zoning categories specified in the Zoning Ordinance:

a. Rural and Agricultural zones
b. Residential zones
c. Nonresidential zones
d. Transit-Oriented/Activity Center zones

Regulations and standards in the 2017 Landscape Manual have been modified to address these revisions and the updated Zoning Ordinance also recognizes that development will (and should) still vary depending upon location and context. Plan 2035 emphasizes Regional Transit Districts and Local Centers as the focus for more intense mixed-use and walkable development within the County. These areas are the primary targets for future County growth. The Zoning Ordinance builds on this policy guidance by establishing Transit-Oriented/Activity Center zones to implement the desired development patterns for these Regional Transit Districts and Local Centers.

The Transit-Oriented/Activity Center zones established in the Zoning Ordinance support mixed-use, transit-oriented, and pedestrian-friendly development, that includes a pattern of walkable streets and blocks, integrated open spaces, buildings facing the street with parking in the rear and/or within parking structures, and streets and streetscapes that will be engaging, attractive, and vibrant. As a result, the Landscape Manual has been updated to include standards that specifically address the unique landscape features and arrangements needed to support the urbanized character of the Transit-Oriented/Activity Center zones.

The 2017 Landscape Manual increases shade tree and planting unit requirements, where practical, to support the County's 52 percent tree canopy goal, and adds requirements, rather than options, for shrubs and understory plantings to address broad environmental, green infrastructure, and sustainability goals. Provisions for more contemporary planting design approaches to stormwater management and site sustainability are included to encourage healthy landscapes with stronger ecosystem functions.

This updated Landscape Manual adds specific multifamily requirements to the Residential section, creates an entirely new section for Nonresidential landscape requirements, and adds specific requirements for the new Transit-Oriented/Activity Center zones to ensure attractive and high-quality designed landscapes, streetscapes, and public spaces. A new subsection, Section 4.8: Building Frontage Zone, has been added to include nuanced planting requirements along a building's front and within the streetscape, for all buildings within the Transit-Oriented/Activity Center Zone, as well as for multifamily, nonresidential, and mixed-use buildings that may occur in other zones. Together with Section 4.10 Street Trees (For Private Streets) and more nuanced residential and nonresidential planting requirements, the Manual describes high quality landscape recommendations to support walkable urbanism.

Revisions to this manual reduces the required buffers within the Transit-Oriented/Activity Center Zones, to encourage connected, compact, and walkable urbanism. As such, the previous Section 4.8: Landscape Requirements in a Regional Urban Community has been removed in its entirety, as this section is no longer applicable. Other key Landscape Manual updates are summarized within each subsection of Section 4: Landscape Standards.

CONTENTS:

Section 1, General Information and Procedures includes information on the applicability of standards, approval procedures, and the process for requesting approval of proposals for alternative compliance and plant substitutions.

Section 2, Plan Preparation, sets forth requirements for the preparation and content of all landscape plans.

Section 3, Landscape Elements and Design Criteria, outlines the general design considerations that will serve as the basis for evaluation of all landscape

INTRODUCTION

plans in Prince George's County, including conformance to Plan 2035 and the goals of the Landscape Manual, the importance of preserving existing trees, and the application of sustainable landscaping techniques, landscaping for energy conservation, and Crime Prevention Through Environmental Design (CPTED) principles.

Section 4, Landscape Standards, contains the standards for on-site residential plantings, landscape strips along streets, parking lot landscaping, screening, stormwater management facilities, buffering development from streets, buffering incompatible uses, standards for building frontage zones, sustainable landscaping requirements, street trees along private streets, and requirements for nonresidential development. Section 4 has been updated to include separate sections to address the desire for higher-quality landscaping for multifamily and nonresidential development. Section 4 will apply to all development areas within the County, including Transit-Oriented/Activity Center zones.

Section 5, Glossary of Terms, is a glossary of the terms used in the manual followed by the appendices, which contain recommended plant materials, planting details and specifications, and sample forms and checklists.

ADDITIONAL REQUIREMENTS

In addition to the requirements of the manual, some development activities in Prince George's County are subject to the requirements of the Woodland Conservation and Wildlife Habitat Ordinance. The Woodland Conservation and Wildlife Habitat Ordinance requires the preservation and/or planting of woodlands. The manual encourages the retention of existing trees to fulfill landscaping requirements. Protected woodland conservation areas shown on a Type II Tree Conservation Plan may also be credited toward fulfillment of standards contained within the updated manual.

Any land located in the Chesapeake Bay critical area within Prince George's County is subject to the requirements of this manual and the applicable provisions of the Conservation Manual for the Chesapeake Bay Critical Area, as may be amended from time to time. The Conservation Manual explains the review process necessary for developing or improving property located in the Chesapeake Bay critical area.

The Department of Parks and Recreation of The Maryland-National Capital Park and Planning Commission ("M-NCPPC") has established guidelines

for the provision of landscaping on parkland and in private recreational areas. Those guidelines are set forth in the Parks and Recreation Facilities Guidelines, as may be amended from time to time.

TREE CANOPY ORDINANCE

The Prince George's County Tree Canopy Ordinance, Subtitle 25 Division 3, requires the preservation, maintenance, enhancement, and restoration of tree canopy coverage on developed and developing sites for the benefit of County residents and future generations. All activities that are subject to this Division shall provide the tree canopy percentages listed in Table 1. Tree canopy coverage requirements are based on the gross tract area. The requirements of this Division shall be demonstrated on an appropriate plan prepared in conformance with Part D of the Environmental Technical Manual or prepared in conformance with Section 2, Plan Preparation of this Landscape Manual.

Questions about interpretation or use of the updated manual should be directed to the Planning Department.

SECTION 1: GENERAL INFORMATION AND PROCEDURES

SECTION 1: GENERAL INFORMATION AND PROCEDURES

SECTION CONTENTS

» 1.1 Applicability

» 1.2 Approval Processes

» 1.3 Alternative Compliance

» 1.4 Plant Substitutions

» 1.5 Certification of Installation of Plant Materials

» 1.6 Maintenance and Enforcement

» 1.7 Certificate of Landscape Maintenance

1.1 Applicability

a. All public, private, and institutional development shall comply with the standard in this manual, except as provided below, and as specifically exempt elsewhere in this manual and in Section 27-<> of the Zoning Ordinance.

b. Existing conditions on developed sites not in conformance with the requirements of this manual that were otherwise lawful on the date this manual becomes effective, and not the subject of any building or grading permit, may continue as a matter of right.

c. Development within the Planned Development (PD) zones as established by the Zoning Ordinance should consider the regulations of this manual for the corresponding base zone as the baseline landscaping regulations for development within the PD zone. PD Basic Plan applications may propose alternative landscaping regulations pursuant to Section 27-<> of the Zoning Ordinance.

d. Except as stated in the exemptions cited in Sections 1.1(d) to 1.1(n), all building and grading permits shall be in compliance with this manual. Any application not in compliance with the requirements must apply for and obtain approval of an Alternative Compliance application pursuant to Section 1.3, Alternative Compliance, and/or apply for and obtain approval of an adjustment pursuant to Section 27-<> of the Zoning Ordinance.

e. Building permits for interior or exterior rehabilitation (including, but not limited to, façade restoration, canopies, and mechanical equipment) of an existing building that do not involve a change of use from a lower- to a higher-intensity use category or from a residential use to a nonresidential use, do not involve an increase in impervious surface, and do not involve an increase in the gross floor area (GFA) of the building are exempt from the requirements of Sections 4.1, 4.2, 4.3, 4.6, 4.7, 4.8, 4.9, 4.10, and 4.11.

f. In addition to permits exempt as stated in 1.1(e), the following are exempt from the requirements of Section 4.1, Residential Requirements and Section 4.11 Commercial Requirements for Nonresidential Development:
   1. Building, grading, and/or use and occupancy permits pertaining to any existing single-family home.
   2. Building permits that involve an increase in the GFA of a multifamily building(s) when they result in a total cumulative increase of not more than ten percent (10%) of the GFA of an existing building(s) on a single lot or multiple contiguous lots as of January 1, 1990, or five thousand (5,000) square feet, whichever is less.

g. Building and grading permits are subject to Section 4.2, Requirements for Landscape Strips Along Streets, except as stated in 1.1(e) and except for the following exemptions:
   1. Building permits that involve an increase in the GFA of a multifamily and commercial building(s) are exempt from the requirements of Section 4.2 when they result in a total cumulative increase of not more than ten percent (10%) of the GFA of an existing building(s) on a single lot or multiple contiguous lots as of January 1, 1990, or five thousand (5,000) square feet, whichever is less.
   2. Building and grading permits for properties with frontage on a special roadway are exempt from Section 4.2 and are subject to Section 4.6, Buffering Development from Streets.
   3. Permits for properties that abut a master plan right-of-way that has not been dedicated or is not required to be dedicated pursuant to an approved preliminary plan of subdivision. Refer to Section 4.3 for permits that result in a limit of disturbance as shown on any site plan.

h. In addition to permits exempt as stated in 1.1(d), the following are exempt from the requirements of Section 4.3, Parking Lot Requirements:
   1. Permits for any building, building renovation, or building expansion that does not result in a net increase of impervious area for parking or loading spaces. Reference Section 4.3 for permits that result in a limit of disturbance as shown on any site plan.
   2. Structured parking garages are exempt from Section 4.3.
   3. Permits that involve an existing and/or proposed parking lot less than

seven thousand (7,000) square feet.

4. Restriping of an existing parking compound whether or not it results in an increase in the number of parking spaces when no new impervious area is created.
5. Building and grading permits for shopping centers or office parks are exempt from Section 4.3(c)(1), Parking Lot Perimeter Landscape Strip Requirements, where access drive aisles are located such that it is impractical to conform to this section.

i. All building and grading permits are subject to Section 4.6, Buffering Development from Streets, except as stated in 1.1(d) and except for the following:

1. Permits pertaining to an existing single-family home.
2. Permits for properties that contain an environmental setting of a historic site that abuts a special roadway.
3. Permits for properties that abut a master plan right-of-way that has not been dedicated or is not required to be dedicated pursuant to an approved preliminary plan of subdivision.

j. All building, grading, and use and occupancy permits are subject to Section 4.7, Buffering Incompatible Uses, except as stated in 1.1(d) and except for those that meet all three of the following criteria and are, therefore, exempt:

1. Building permits that involve a total cumulative increase in GFA of not more than ten percent (10%) of the GFA of an existing building(s) on a single lot as of January 1, 1990, or five thousand (5,000) square feet, whichever is less.
2. No part of any new structure, including any paved surface intended for parking, loading, or access thereto but excluding a wall or fence, extends closer to an adjacent property in a less-intense use category than would normally be allowed by the provisions of Section 4.7.
3. Use and occupancy permits that do not involve a change of use from a residential to a nonresidential use.

k. All building, grading, and/or use and occupancy permits associated with the development of privately owned and maintained streets are subject to Section 4.10, Street Trees Along Streets (For Private Streets), except as stated in 1.1(d) and except for the following:

1. Access easement authorized pursuant to Section 24-<> serving four (4) or fewer lots; or
2. Alleys as defined by Subtitle 27 or Subtitle 24.

l. The temporary uses listed in Section 27-<> of the Zoning Ordinance are exempt from the provisions of this manual and shall only be required to provide landscaping or buffering when required pursuant to the approval provisions for the specific temporary use.

m. If planting is required by other provisions of the County Code, any zoning map amendment, special exception, subdivision plat, or site plan that differs from the standards set forth in this manual, such planting shall be required in addition to the minimum amounts specified here.

1.2 Approval Processes

a. A landscape plan is a required element of all site plans (Zoning Ordinance, Section 27-<>) and shall be approved in accordance with the provisions in the Zoning Ordinance for approval of those plans.

b. Landscape plans are required in conjunction with site plans that must be submitted with each application for a building permit. Landscape plans of this type shall be approved in accordance with the provisions of Section <>, of the Zoning Ordinance for approval of building permits.

c. An approved landscape plan shall be amended in accordance with the provisions of the Zoning Ordinance requirements for amendment of the plans or permits under which the landscape plan was originally approved, except when the plan was approved in conjunction with a Special Exception.

d. Plant material, in addition to that which is shown on an approved landscape plan filed in conjunction with a building, grading, or use and occupancy permit, may be installed without requiring a revision to such plan, provided that such plant material complies with the items and specifications set forth in Appendix 3, Plant Lists, and Appendix 4, Landscape Specifications and Planting Details, and that the additional plant material is a noninvasive species.

1.3 Alternative Compliance

a. The standards contained in this manual are intended to encourage development that is economically viable and environmentally sound. The standards are not intended to be arbitrary or to inhibit creative solutions. Project conditions may justify approval of alternative methods of compliance with the standards. Conditions may arise where normal compliance is impractical or impossible or where maximum achievement of the purposes can only be obtained through alternative compliance through the adjustments process specified in Section 27-<> of the Zoning Ordinance. Requests for alternative compliance may be approved for any application to which the requirements apply when one or more of the following conditions are present:

   1. Topography, soil, vegetation, or other site conditions are such that full compliance with the requirements is impossible or impractical; improved environmental quality would result from the alternative compliance.
   2. Space limitations, unusually shaped lots, prevailing practices in the surrounding neighborhood, in-fill sites, and improvements and redevelopment in older communities.
   3. Change of use on an existing site increases the buffer required by Section 4.7, Buffering Incompatible Uses, more than it is feasible to provide.
   4. Safety considerations make alternative compliance necessary.
   5. An alternative compliance proposal is equal or better than normal compliance in its ability to fulfill the design criteria in Section 3, Landscape Elements and Design Criteria.

b. A proposed alternative compliance measure must be equally effective as normal compliance in terms of quality, durability, hardiness, and ability to fulfill the design criteria in Section 3.

c. Alternative compliance shall be limited to the specific project under consideration and shall not establish precedents for approval in other cases.

d. A request for alternative compliance shall be submitted to the Planning Director at the time the application is submitted. In the case of those applications for which no public hearing is required, the decision of the

Planning Director will be final, unless the applicant appeals the decision to the Planning Board. In the case of those plans for which a Planning Board or other public hearing is required:

1. The request for alternative compliance will be accepted at the time of acceptance of the companion case, unless the need for alternative compliance is not determined until after its acceptance; in which case, the request for alternative compliance shall be submitted as soon as possible but no less than thirty-five (35) days prior to the scheduled hearing date for the companion case.
2. The Planning Director will forward a recommendation to the proper hearing authority, as soon as possible, prior to the hearing.

e. Requests for alternative compliance shall be accompanied by sufficient written, graphic, and/or photographic explanation and justification to enable appropriate evaluation and decision (see Appendix 1, Alternative Compliance Submittal Checklist).

f. Where compliance with this manual is not possible and there is no feasible proposal for alternative compliance that is, in the judgment of the Planning Director, equally effective as normal compliance, then the applicant may seek relief by applying for an adjustment in accordance with the provisions of Section 27-<> of the Zoning Ordinance.

1.4 Plant Substitutions

a. An approved landscape plan in need of minor revisions to the specified plant materials due to seasonal planting problems, lack of plant availability, or other reasons to be demonstrated by the applicant may be revised in accordance with the Plant Substitution process as described in Section 1.4(b), if the requested revisions meet the following criteria:

1. No reduction in the quantities of overall plant materials or native plant materials.
2. No significant change in size or location of plant materials.
3. New plant materials fall within the same general functional category of plants (shade trees, ornamental trees, evergreens, etc.) and have the same general design characteristics (mature height, spread, etc.) as the plant materials being replaced.

SECTION 1: GENERAL INFORMATION AND PROCEDURES

The proposed new plant materials are considered appropriate with respect to elements necessary for good survival and continued growth.

4. The proposed new plant materials are considered appropriate with respect to elements necessary for good survival and continued growth.

b. A letter shall be submitted to the Planning Department requesting a minor revision for plant substitution. The letter shall include a list of the quantities, types, native status, and sizes of the original plants and the proposed substitution(s), the location of the substitute plants on the plan, reference to any approved permit or site plan numbers, and the name and telephone number of a contact person (see Appendix 2, Plant Substitution Request Form).

1. A representative of the Planning Department will notify the applicant in a timely manner whether or not the proposed plant materials have been found to meet the criteria listed in Section 1.4(a)(1)-(4). Such notification will take place within five (5) working days. If the substitutions are approved, the applicant will be informed of any additional actions or information required to finalize and document the plant substitution(s).
2. If the plant requested substitution(s) is not approved, a representative of the Planning Department will supply the applicant with specific recommendations for changes that will make the plant substitution(s) approvable.
3. If the requested revisions to the landscape plan do not fulfill the four criteria listed in 1.4(a), they may not be approved in accordance with this Plant Substitution process. In that case, the Planning Department will inform the applicant of procedures necessary to formally revise the plan.

1.5 Certification of Installation of Plant Materials

a. Within thirty (30) days of the installation of plant materials, a landscape architect registered in the State of Maryland shall submit written certification to the Department of Permitting, Inspections, and Enforcement stating that healthy plant material was properly installed in accordance with the locations, quantities, minimum sizes, and species indicated on the approved landscaped plan.

1.6 Maintenance and Enforcement

a. All required landscaping, buffering, and screening shall be maintained in a healthy condition and in accordance with the approved landscape plan. Failure to maintain or to replace dead, diseased, or removed material as shown on an approved landscape plan shall constitute a zoning violation and shall be subject to the penalty provisions set forth in Subtitle 28, Division 1, of the County Code. The replacement of dead or diseased plant material with a different plant species than that specified on the approved landscape plan is allowed only if done in accordance with Section 1.4, Plant Substitutions.

b. The removal and replacement of healthy plant material approved in accordance with the requirements is strictly prohibited, except plants under federal quarantine restrictions or unless such landscaping poses a threat to the health, safety, and/or welfare of the public. In cases where landscaping poses a threat to the health, safety, and/or welfare of the public, as determined by the Planning Director, removal and/or replacement of the healthy plant material is allowed only if done in accordance with the requirements of the approval of the original plan.

SECTION 1: GENERAL INFORMATION AND PROCEDURES

1.7 Certificate of Landscape Maintenance

a. Building and grading permits for sites that were previously subject to the Prince George's County Landscape Manual or any subsequent amendments and which are subject to any provision of Section 4.1 through 4.11 shall include a valid Certificate of Landscape Maintenance to demonstrate compliance with Section 1.6(a).

b. A landscape architect registered in the State of Maryland shall certify that the site has been inspected and that landscaping has been maintained and is in compliance with the previously approved landscape plan in terms of quantity, location, species, and minimum size of plant materials.

c. A Certificate of Landscape Maintenance is valid for two (2) years from date of signature by the registered landscape architect. A copy of the Certificate of Landscape Maintenance shall be included on the landscape plan and shall include the date of inspection, the signature and seal of the landscape architect, and the permit number associated with the originally approved landscape plan.

THIS PAGE IS INTENTIONALLY LEFT BLANK

SECTION 2:
PLAN PREPARATION

SECTION 2: PLAN PREPARATION

SECTION CONTENTS

» 2.1 Preparation of Landscape Plans

» 2.2 Submittal Requirements

2.1 Preparation of Landscape Plans

a. Landscape plans for development in all zones (except for subdivisions in residential zones containing fewer than four (4) single-family lots or other minor plans of development as determined by the Planning Director) shall be prepared and sealed by a landscape architect registered in the State of Maryland.

2.2 Submittal Requirements

The submission package for a landscape plan shall include planting and site information. The landscape plan may be submitted on a separate sheet or superimposed on a single sheet with the site plan in cases where the site plan includes a single sheet. All symbols and site features on the landscape plan shall be legible. The plan shall be prepared at the same scale as the associated site plan unless otherwise authorized by the Planning Director. The landscape plan must include the following information:

a. Planting Elements

1. Location, general type and quality of existing vegetation, specimen trees, and areas of second growth; if a Forest Stand Delineation has been conducted on the site in connection with any previous stage of development, the level of detail concerning existing vegetation shown on the landscape plan shall be equal to that in the Forest Stand Delineation.
2. Existing vegetation to be saved (indicated and noted accurately by size and species).
3. Methods and details for protection of existing vegetation during construction.
4. Locations and labels of all proposed plants, using standard landscape architectural graphic conventions portraying plant spreads at twenty-five (25) to thirty (30) feet for shade trees, ten (10) feet for evergreen trees , and fifteen (15) to twenty (20) feet for ornamental trees. Space trees appropriately for accurate size as opposed to symbol size.
5. Plant list or schedule including botanical and common names, quantities, spacing, native status, and size at time of planting of all proposed plants.
6. Location and description of other landscape improvements, such as earth berms, walls, fences, screens, sculptures, fountains, street furniture, lights, and courts or paved areas.

7. Planting installation details as necessary to ensure conformance with the standards in Appendix 4, Landscape Specifications and Planting Details.
8. Schedules or lists showing required and proposed quantities for items called for by this manual (see Section 4, Landscape Standards, for examples).
9. Specifications for soil mixture in which plant materials are proposed to be cultivated and/or amendments proposed to existing on-site soils in planting areas.

b. Site Elements

1. North arrow and scale.
2. Property lines.
3. Zoning and use of the subject property and all abutting properties, location of buildings on abutting properties within fifty (50) feet of a property line, and notes indicating the existence of all buildings on abutting properties within two hundred (200) feet of a property line.
4. Name, location, existing right-of-way width, ultimate right-of-way width, and all existing and proposed improvements within all of the abutting streets.
5. Features, such as existing two (2) foot contour topography, ponds, lakes, and streams.
6. Delineation of regulated environmental features, such as one hundred (100) year floodplains, non-tidal wetlands, regulated streams, wetlands, and associated buffers.
7. Existing and proposed stormwater management facilities.
8. Required bufferyards, including building setbacks and width of landscape yards from all lot lines.
9. Location, height, dimensions, and use of all existing and proposed buildings and other structures and improvements (including parking lots, sidewalks, paved or unpaved trails, and other hard surface areas, fences and walls, and recreational equipment).
10. Proposed grading in two (2) foot contours with any slope steeper than three-to-one (3:1) labeled.
11. Location of existing and proposed utilities, including water, storm

drain, sanitary sewer pipes, overhead and underground wires, utility poles and boxes, and signs.

12. Location of existing and proposed easements, including, but not limited to, access easements and utility easements.
13. Location, size, and description of all elements required to be screened by Section 4.4, Screening Requirements.

c. Sample Planting Schedules

1. Landscape plans should include all applicable schedules from Section 4, Landscape Standards, to document compliance with all standards established by this manual.

THIS PAGE IS INTENTIONALLY LEFT BLANK

SECTION 3: LANDSCAPE ELEMENTS AND DESIGN CRITERIA

SECTION 3: LANDSCAPE ELEMENTS AND DESIGN CRITERIA

SECTION CONTENTS

» 3.1 Design Elements

» 3.2 Design Criteria: Functional and Aesthetic Values of Plants

» 3.3 Landscape Functions

» 3.4 Landscape Elements

» 3.5 Other Landscape Design Considerations

In a well-designed landscape plan, plants are carefully selected and arranged to perform an environmental and design function, not used to fill space. Designing such a plan is a complex process that requires taking into account the growth preferences and habits of plants while maintaining a clear understanding of the design problem to be solved with planting. The following information is intended to provide guidance in this process.

3.1 Design Elements

The aesthetic qualities of plants, including form, size, texture, color, flowering habits, autumn foliage, bark and crown characteristics, and type of fruit, should be taken into account when selecting plants to create a pleasing appearance. Some general principles of composition that apply to planting design are axis, symmetry, hierarchy, emphasis, balance, repetition, rhythm, and scale.

3.2 Design Criteria: Functional and Aesthetic Values of Plants

In an effective planting design, there should be a dominant material, color, or texture to provide unity to the composition. Accent planting can then be used to create contrast. Masses of a predominant species with a few individual accent plants will usually produce the most satisfying visual effects.

3.3 Landscape Function

a. Visual Control—Plants may be used to:
   1. Reduce negative effects of reflection and glare from paving or structures and direct light from the sun, headlights, street lights, parking lot lights, floodlights, signage, etc.
   2. Create privacy.
   3. Screen unsightly views.
   4. Provide visual relief from paved areas.
   5. Direct views.
b. Architectural Definition- Plants may be used to:
   1. Define public and private spaces.
   2. Define pedestrian and vehicular circulation.
   3. Create pedestrian-friendly environments.
   4. Promote compatibility between land uses by mitigating the visual, noise, and lighting impacts of adjoining developments.
   5. Create physical barriers.
c. Environmental Sustainability- Plants may be used to:
   1. Reduce heat island, and minimize effects on microclimates by providing shading and increasing evapotranspiration by intercepting reflected solar radiation from some surfaces.
   2. Modify windflow (block harsh winter wind, amplify summer breeze, and direct snowdrift).
   3. Filter pollution from stormwater and reduce stormwater temperature, rate, and volume of flow.
   4. Absorb carbon dioxide.
   5. Improve water quality.
   6. Modify precipitation, temperature, humidity, and moisture retention.
d. Community Health and Wellness—Plants may be used to:
   1. Promote pedestrian activity by enhancing pedestrian environments and safety.

2. Provide cleaner air by filtering air pollution.
3. Provide opportunities for edible healthy foods.

e. Economic Benefits—Plants may be used to:

1. Enhance commercial viability by improving aesthetic appeal and expressing vitality to potential customers, investors, or residents.
2. Increase home values.
3. Minimize utility costs in the summer by providing cooling through shading and increased evapotranspiration and in the winter by preventing heat loss through reduced wind speed and allowing for passive solar heating.

f. Scenic and Historic Landscapes—Plants may be used to:

1. Protect and/or enhance scenic and historic landscapes.
2. Enhance and preserve scenic viewsheds.
3. Preserve and/or restore historically appropriate landscape plants and features.

g. Erosion Control—Plants may be used to control soil erosion caused by wind or stormwater runoff.

h. Wildlife Habitat—Plants may be used to provide cover and food for birds and other wild animals.

3.4 Landscape Elements

a. Shade Trees

Shade trees have the greatest overall impact on the built environment because of their size, character, and permanence and should be the first element considered when designing planting. Shade trees provide unity, character, and identity for residential neighborhoods and can soften architecture, create a transition between the built and natural environment, and provide a human scale for nonresidential neighborhoods. Shade trees should also be used to:

1. Define major active and passive open spaces and direct both vehicular and pedestrian movement.
2. Define and enhance views.
3. Modify climate.

4. Provide shade in the summer.
5. Reduce the impact of direct and reflected light.
6. Screen and buffer undesirable or incompatible views and activities.

b. Street Trees

Street trees may perform the same functions as shade trees but are differentiated because they have a specific relationship to the street. They define the street scape with overhead or canopy elements (crown) and with vertical elements (trunks), establishing it as a unified space that connects distant and sometimes disparate uses. To perform this function, street trees should be planted close to the curb or edge of pavement so that the canopy at maturity will extend over the street. The importance of street trees, which will eventually become large, is greater for wider streets. Large street trees are the first, and perhaps the only plant material, noticed while traveling down a wide road, and in many of the densest urban areas may be the only trees that are present outside of parks and plazas.

Street trees establish the basic structure or skeleton of an outdoor environment and will have the most significant effect on future travelers along the road.

c. Ornamental Trees

Ornamental trees are generally utilized to provide an understory layer for the overhead canopy of major shade trees. They may also be used architecturally to define minor outdoor spaces, such as entry areas or small pedestrian use areas; provide a transitional or softening element for architecture; provide seasonal color and variety of form; and as an accent or major focus.

d. Evergreen Trees

Evergreen trees are most often utilized as a vertical architectural element, such as a wall or screen to define space and direct views. They may also be used to provide winter interest and variety in color and form as well as an accent and to soften architecture.

e. Shrub and Ground Plane Planting

Shrub and ground plane planting includes low shrubs, grasses, ground covers, and perennials. They should be used to define minor pedestrian spaces, such as entries and sitting areas; direct pedestrian traffic; provide color and variety; and to accent the overall landscape design. In accordance

with sustainable landscaping principles (see Section 3.5(b), Sustainable Landscaping), shrub and ground plane planting may be installed to control erosion, enhance the absorption of stormwater runoff, and reduce lawn maintenance and the need for application of chemical fertilizers.

Plant material should be massed in beds rather than planted as independent units on the lawn, and it should relate to the architecture (e.g., beds of ground cover related to windows and shrub massing at entrances).

f. Screening and Buffering Plantings

Screening is required for a number of unsightly uses (see Section 4.4, Screening Requirements). As such, vegetative screening may consist primarily of evergreen trees and shrubs, but finely branched deciduous trees and shrubs planted in masses or tightly spaced may also be considered. Because of their density and opacity, evergreen trees often create the effect of a large wall. Other screening elements, such as walls, fences, and berms, should be carefully designed to avoid unnecessarily obstructing views, restricting light and air, or creating hazardous blind spots.

Where bufferyard planting is required (see Sections 4.4, Screening Requirements and 4.7, Buffering Incompatible Uses), a combination of evergreens, deciduous plant materials, walls and/or fencing may be used to achieve the desired effect. When a linear screen is required, such as along a property line, the screen planting may be staggered, naturalistically designed, or laid out employing a more formal approach using, for example, a hedge or a formal planting scheme and fencing.

g. The following table provides plant unit equivalences for reference in Sections 4.6 and 4.7:

PLANTING UNIT EQUIVALENCIES	
One (1) shade tree	Ten (10) plant units
One (1) street tree	Ten (10) plant units
One (1) ornamental or evergreen trees	Five (5) plant units
One (1) shrub or five (5) perennials	One (1) plant unit
50 SF groundcover	Ten (10) plant units

3.5 Other Landscape Design Considerations

Other landscape design considerations include, but are not limited to, the existing development pattern of and future vision for the area; use of sustainable landscaping; energy conservation measures; preservation of existing trees in coordination with the requirements of the Woodland Conservation and Wildlife Habitat Ordinance; safety considerations, including CPTED principles; planting in Rural and Agricultural areas and in urban farms and community gardens; and environmental settings for historic sites.

a. Development Patterns in the General Plan

Two important landscape design considerations are 1) the existing development pattern of and 2) the future vision for an area. Prince George's County has a variety of development patterns ranging from urban (typically found inside the Capital Beltway and in the Transit-Oriented/ Activity Center zones) to rural (mainly located in the far southern and eastern areas of the County and in the Rural and Agricultural zones). This manual recognizes the differing landscaping needs of the County's various development patterns and seeks to further the vision and policies of the General Plan for those areas.

Plan 2035 recognizes the distinction between 1) rural and agricultural areas of the County, and 2) established communities and targeted growth areas of the County. Additionally, the General Plan designates a number of Regional Transit Districts and Local Centers that support walkable urbanism and mixed-use, transit-oriented development at varying levels of development intensity depending upon location and context.

Rural and agricultural areas comprise the eastern and southern portions of the County in the Patuxent River, Potomac River, and Mattawoman Creek watersheds. Characterized by fine landscapes, most of the County's remaining farms, extensive woodlands, large public land holdings, numerous streams, and diverse wildlife habitat, these rural areas are the most scenic part of the County. The vision for these areas is to support park and open space land by protecting of woodland and wildlife habitat, encourage recreation and agricultural pursuits, and preserve the rural character and vistas.

SECTION 3: LANDSCAPE ELEMENTS AND DESIGN CRITERIA

All other areas of the County are generally identified as established communities, future water and sewer service areas, and targeted growth areas such as Regional Transit Districts, Local Centers, the Innovation Corridor, and employment areas. These areas of the County are between the District of Columbia and the Capital Beltway, and the middle section of the County largely east of the Capital Beltway which has been, and will continue to be, subject to more suburban expansion. This manual establishes landscape standards and requirements that will enhance existing developments and elevate the quality of landscape for new infill and/or redevelopment in these areas. The manual also contains standards and requirements for the Transit-Oriented/Activity Center zones that will support walkable urbanism, mixed-use, and transit-oriented development.

This manual recognizes this range of development patterns and establishes standards designed to address each area's unique constraints and opportunities and to help implement the visions set forth in Plan 2035.

b. Sustainable Landscaping

Sustainable landscaping works in tandem with nature to create healthy and viable environments. By implementing environmentally-sensitive design techniques, low-impact development methods, and incorporating noninvasive native plants, sustainable landscaping reduces soil erosion, air and water pollution, creates and maintains wildlife habitat, and fosters healthy living conditions.

Key sustainable landscaping techniques include, but are not limited to:

1. Adopting a broader vision for landscaping, taking into consideration the natural context.
2. Minimizing the use of supplemental watering, and adopting more efficient watering techniques, when necessary, such as drip and spot irrigation.
3. Using plants native to the area or plants that have adapted to the area's growing conditions, soil, and climate as these species typically requires less maintenance and support local wildlife.
4. Using buffer plantings to create wind screens, wildlife habitats, and for the protection of less hardy plants.
5. Diversifying planting types to reduce the use of chemical fertilizers and pesticides.

6. Minimizing bare soil and stabilizing slopes by planting ground covers.
7. Implementing sustainable mowing practices and reducing lawn waste.
8. Reducing the amount of impervious surface used in landscaped areas through the use of alternative hard surfaces with permeable joints, such as stepping stones, permeable paver walkways, cobblestones, and decks.
9. Mixing species in a massed planting that encourages natural predators and provides nectar sources throughout the year.
10. Providing opportunities for edible landscaping to enhance community access to healthy foods.

c. Landscaping for Energy Conservation

When preparing a landscape plan, consideration should be given to the proper selection and placement of tree species near buildings to minimize building heating and cooling requirements. When located appropriately, trees of adequate size, quality, canopy, and form can decrease energy consumption in buildings in the summer by reducing heat absorption and in the winter by allowing for passive solar heating and providing protection from the wind. Maximum cooling savings will result when deciduous trees are planted to shade the southern and/or western wall and windows of buildings. To shade the roof or wall of a single one-family residential structure, for example, trees that will mature to a medium-to-large size should be planted within thirty (30) feet of the structure and a minimum of ten (10) feet off of the building facade. Smaller trees and shrubs can also be planted closer to the house and used to shade walls and window areas.

d. Preservation of Existing Trees

The importance of saving existing individual trees and groves of trees in developing areas cannot be overstated. Existing trees, regardless of size, should be preserved whenever possible. Particular efforts should be made to retain healthy trees or vegetation that have special character due to size, age, habit, or historical importance or that have special value as screening or buffering elements.

If possible, trees selected for preservation should be identified prior to site design. Roadways should be sited where they would cause the least damage to valuable stands, and original topography should be followed as closely as possible to minimize grading within the critical root zone of trees to be retained.

SECTION 3: LANDSCAPE ELEMENTS AND DESIGN CRITERIA

Many factors must be weighed in the decision to preserve trees and vegetation, including existing and proposed grading conditions, age, condition, type of trees, percentage of critical root zone that can remain undisturbed, and location of site improvements and utility connections.

In general, the critical root zone is a circle delineated around each tree with a radius equal to one (1) foot per inch of diameter at breast height (dbh) of the tree. If seventy percent (70%) or more of the critical root zone area can remain undisturbed and at original grades, depending upon the species and condition, a tree can be retained without special management. If disturbance of between fifty and sixty-nine percent (50% and 69%) of the critical root zone is proposed, depending on species and condition, a careful evaluation of the tree by a licensed arborist and a registered landscape architect in the State of Maryland and a retention management plan should be prepared to evaluate whether the tree can be successfully retained. Disturbance of more than fifty percent (50%) of the critical root zone is detrimental to the retention of a tree, except under very unusual circumstances.

Credit may be given for existing shade trees preserved when they are in a location and of a nature and diameter at breast height (dbh) if they contribute to the objectives and are in accordance with the design guidelines of the standards to which they are being credited.

e. Coordination with the Woodland and Wildlife Habitat Conservation Ordinance

In addition to the requirements of the Landscape Manual, many development activities in Prince George's County are subject to the requirements of the Woodland and Wildlife Habitat Conservation Ordinance, which was enacted in September 2010.

This manual encourages the retention of existing trees and woodland to fulfill landscaping requirements. Individual trees within areas that are protected woodland under the woodland conservation credit shown on a Type II Tree Conservation Plan may be credited toward the fulfillment requirements if they meet the diameter at breast height size and quantity requirements of the standards to which they are being credited. When a woodland conservation area is proposed to be counted toward the fulfillment of a requirement and a Woodland Conservation requirement, both the landscape plan and the tree conservation plan must demonstrate compliance with the associated requirements.

f. Crime Prevention Through Environmental Design (CPTED)

Landscape design must be sensitive to public safety concerns and the perception of a crime-free environment. CPTED focuses on creating environments that are both safe for residents and visitors and deterrents to potential criminals. Through its design and landscaping principles, CPTED facilitates natural surveillance of the private and public properties, open spaces, and roadways that make up neighborhoods and deters criminals from using these areas for illegal activities.

Whenever possible, CPTED recommends avoiding the use of landscaping and screening elements that create blind spots or hiding places. This can be achieved by ensuring that shade trees have a minimum clear height of eight (8) feet and that all plantings, screenwalls, and fences are carefully selected and sited, especially in proximity to major site accesses and other points of entry. CPTED also underscores the importance of maintaining and keeping landscaped areas free of litter, as a signal that residents and property owners have a vested interest in the area and will not tolerate illegal activities.

g. Residential Design

Planting plans for subdivisions should be comprehensive for a group of lots or an entire project rather than sample model plantings repeated many times over. Generally, trees may be grouped to preserve natural stands (or simulate stands where they may not occur naturally) or located symmetrically. In single-family subdivisions, the relative location of trees should vary from lot to lot. On corner lots, care should be taken to use plant materials to provide privacy for backyards and attractive views from the intersection.

Buffering is encouraged for rear yards that back up to each other and are visible from other rear yards. Screening elements may be located on individual lots or on intervening common open space. It is desirable that screening fences and walls be built with materials compatible with those of the overall subdivision design.

Subdivisions that include common open space should provide landscaping in the open space. Plant material can be used to define space and circulation, provide shade, preserve natural areas for passive recreation and environmental needs, and screen parking lots and other incompatible uses from the residential areas. The quantity of trees allocated to common open space shall not have the effect of eliminating the landscaping devoted to individual lots.

SECTION 3: LANDSCAPE ELEMENTS AND DESIGN CRITERIA

h. Parking Lot Design

Planting islands should be used to define circulation patterns and parking bays. They should also be used to soften large expanses of paving. In general, islands should be distributed throughout the parking lot and should be placed a maximum of every ten (10) spaces apart. In large parking lots, fewer but larger islands may be used to provide greater visual relief and a healthier environment for tree growth but will require an alternative compliance application to be submitted and approved.

Trees in or at the edge of parking lots should be species that branch no lower than twelve (12) feet from the ground at maturity to allow cars and trucks to circulate beneath the canopy without causing damage.

Shrubs in or at the edge of the parking lot should provide a low, two (2) to four (4) foot year-round screen for paving and cars. Shrub varieties should either be evergreen or, if deciduous, have a dense, twiggy growth habit for winter screening and an attractive year round appearance.

Good visibility in the parking lot is important, both for security and traffic safety reasons. Plants or other elements that restrict visibility, such as tall shrubs, low-branching trees, and tall fencing or walls should be avoided. Plant materials at vehicular entrances should be located to maintain safe sight distances.

Plants in parking lots are subject to many adverse conditions and are not likely to receive consistent care. Accordingly, plant varieties that should be selected are ones which are moderate to slow growing, require little maintenance, tolerate such conditions as sun, wind, drought, glare, reflected heat, salt and chemicals, and restricted planting spaces.

i. Environmental Settings of Historic Sites

The environmental setting of an historic site is an essential element of its historic value. The environmental setting is the extent of the property protected as a historic site on which the structure is located, unless the environmental setting has been reduced or enlarged by the action of the Prince George's County Historic Preservation Commission after careful consideration of the historic and natural features and landscape character of the property. Many historic sites in Prince George's County are still rural in character. The integrity of these sites should not be compromised by incompatible adjacent development. Developing properties adjacent

to designated historic sites should minimize adverse visual impact on the historic site and its environmental setting by sensitive siting of built elements, providing buffer areas that preserve existing trees, or landscaping to be as compatible as possible with the environmental setting.

j. Stormwater Management Facilities

The "Stormwater Management Act of 2007" requires the use of ESD (Environmental Site Design), through the incorporation of nonstructural best management practices and other site design techniques, to be implemented to the maximum extent practicable. This landscape manual supports the intent of the Maryland Department of the Environment (MDE) manual and recommends that stormwater management become an integral solution complimentary to the site design. Planting within stormwater management areas such as micro-bioretention planters and similar techniques shall be planted in accordance with the MDE manual and/or DPW&T regulations.

k. Rural and Agricultural Areas, Urban Farms, and Community Gardens

Edible landscaping is becoming an increasing focus of community design efforts. These elements of the landscape manifest in several manners with the most common found in community gardens and urban farms. A community gardens is a shared space where groups of people can grow fruits, vegetables, and other planted species and urban farms take the concept of community gardens to a larger production scale. These landscapes provide community health benefits, alleviate the problem of food deserts, create habitat for pollinators and bird species, and help to increase the biodiversity of planted areas. When planned properly, they can become an integral element of the aesthetic appeal of a site.

SECTION 4:
LANDSCAPE STANDARDS

SECTION CONTENT

» 4.1 RESIDENTIAL REQUIREMENTS
» 4.2 REQUIREMENT FOR LANDSCAPE STRIPS ALONG STREETS
» 4.3 PARKING LOT REQUIREMENTS
» 4.4 SCREENING REQUIREMENTS
» 4.5 STORMWATER MANAGEMENT FACILITIES
» 4.6 BUFFERING DEVELOPMENT FROM STREETS
» 4.7 BUFFERING INCOMPATIBLE USES
» 4.8 BUILDING FRONTAGE LANDSCAPE REQUIREMENTS
» 4.9 SUSTAINABLE LANDSCAPING REQUIREMENTS
» 4.10 STREET TREES (FOR PRIVATE STREETS)
» 4.11 REQUIREMENTS FOR NONRESIDENTIAL DEVELOPMENT

4.1 Residential Requirements

This section of the landscape manual applies to all residential uses in all zones, including residential uses that are part of a mixed-use development. The goal of these planting requirements is to increase the tree canopy of the lots per the general plan and encourage species diversity in the canopy and understory planting requirements. To achieve the requirements for residential lots, proposed plans must achieve the minimum per lot planting requirements for all non-multifamily lots, the common area planting requirements for all non-multifamily lots, and/or the green area requirements for multifamily lots. Reference Section 5, the Glossary of Terms, for these definitions. Additionally, exceptions for the Transit-Oriented/Activity Center zones will be outlined.

a. Purposes and Objectives
    1. Establish a visual relationship between residential structures and their surrounding environments.
    2. Reduce the energy needs of residential structures by planting for energy conservation.
    3. Create privacy by buffering residential structures from incompatible uses, where buffers are appropriate
    4. Reduce the negative effects of reflection and glare from paving, structures, or direct light from the sun, headlights, street lights, etc.
    5. Enhance the aesthetic appearance of residential neighborhoods to increase individual property values.
    6. Enhance the quality of common spaces and streets, especially in multifamily and mixed-use development, to support walkability.

b. Design Guidelines
    1. Planting schemes for subdivisions should be comprehensively designed for an entire project rather than sample model plantings repeated many times over.
    2. On-lot residential plantings should be used to accent corners of intersecting streets and may be used to identify individual streets.
    3. In single-family detached subdivisions, the relative location of trees should vary from lot to lot. On corner lots, care should be taken to use plant materials to provide privacy for backyards and attractive views from the street.
    4. Subdivisions that include common open space should provide landscaping in the open space and around recreational areas.

5. Plant material should be used to define space and circulation, provide shade, enhance natural areas for passive recreation and environmental needs, and screen parking lots and other incompatible uses from the residential areas.
6. The quantity of trees allocated to common open space should not have the effect of eliminating the landscaping devoted to individual lots.
7. Deciduous shade trees should be planted on the south and/or west sides of residential structures to provide shade in the summer months and reduce the amount of energy required to maintain indoor air temperatures. Likewise, since deciduous trees lose their leaves in the fall, they allow for passive solar heating of structures in the winter months (see discussion of Landscaping for Energy Conservation in Section 3).
8. Evergreen trees should be planted on the north and/or west sides of residential dwellings to provide protection from winter winds by reducing wind speed and creating dead air space for insulation around structures, both of which contribute toward maintaining indoor air temperature (see the discussion of landscaping for energy conservation in Section 3).
9. Planting design for multifamily dwellings, including when provided as part of a mixed-use development, should enhance the attractiveness, function, economic value, and character of place. Plantings should reinforce an overall design approach that encourages a more walkable and engaging human-scale environment. Landscaping of common open space that include recreational facilities and/or small greens, squares, and plazas for socialization and gathering should include appropriate landscaping.
10. Landscape materials as determined by Green Area and/or common open space should be used to create attractive plantings along a project's boundary and entry area, entry drives, walkways, internal drives and circulation routes, and areas between building frontages/facades and the street or parking lot edge.

c. Requirements

1. Single-Family Detached

Required Street Trees (only those street trees along the lot line) per Section 4.10 for all single-family detached lots located within a Transit-Oriented/Activity Center zone and all lots less than 9,500 square feet may count towards the required per lot plantings specified in Section 4.1(c)(1)(A-D) below.

All residential development shall comply with the following standards:

A. All single-family detached lots that are forty thousand (40,000) square feet or larger shall be planted as follows:

I. Plant a minimum of five (5) major shade trees and four (4) ornamental or evergreen trees per lot.

II. A minimum of two (2) percent of the total lot area shall be planted with shrubs, perennials, and/or groundcover.

III. At least two (2) of the major shade trees shall be planted on the south and/or west side and within thirty (30) feet, where feasible, of the residential structure to contribute to passive energy conservation. Such trees shall be located a minimum of ten (10) feet away from the building façade.

IV. At least one (1) of the required major shade trees and one (1) of the ornamental trees shall be located in the front yard or, in the case of a corner lot, in the front or side yard facing the street. This shade tree may also count toward fulfillment of the landscaping for passive energy conservation requirement above, if located in accordance with such requirement.

B. All single-family detached lots that are twenty thousand (20,000) square feet or larger but less than forty thousand (40,000) square feet shall be planted as follows:

I. Plant a minimum of four (4) major shade trees and three (3) ornamental or evergreen trees per lot.

II. A minimum of four (4) percent of the total lot area

shall be planted with shrubs, perennials, and/or groundcover.

III. At least one (1) of the major shade trees shall be planted on the south and/or west side and within thirty (30) feet, where feasible, of the residential structure to contribute to passive energy conservation. Such trees shall be located a minimum of ten (10) feet away from the building façade.

IV. At least one (1) of the required major shade trees shall be located in the front yard or, in the case of a corner lot, in the front or side yard facing the street. This shade tree may also count toward fulfillment of the landscaping for passive energy conservation requirement above, if located in accordance with such requirement.

C. All single-family detached lots that are nine thousand, five hundred (9,500) square feet or larger but less than twenty thousand (20,000) square feet shall be planted as follows:

I. Plant a minimum of three (3) major shade trees and two (2) ornamental or evergreen trees per lot.

II. A minimum of six (6) percent of the total lot area shall be planted with shrubs, perennials, and/or groundcover.

III. At least one (1) of the major shade trees shall be planted on the south and/or west side and within thirty (30) feet, where feasible, of the residential structure to contribute to passive energy conservation. Such trees shall be located a minimum of ten (10) feet away from the building façade.

IV. At least one (1) of the required major shade, ornamental, or evergreen trees shall be located in the front yard or, in the case of a corner lot, in the front or side yard facing the street. This shade tree may also count toward fulfillment of the landscaping for passive energy conservation requirement above, if located in accordance with such requirement.

D. All single-family detached lots that are six thousand, five

hundred (6,500) square feet or larger but less than nine thousand, five hundred (9,500) square feet shall be planted as follows:

I. Plant a minimum of two (2) major shade trees and two (2) ornamental or evergreen trees per lot.

II. A minimum of eight (8) percent of the total lot area shall be planted with shrubs, perennials, and/or groundcover.

III. At least one (1) of the major shade trees shall be planted on the south and/or west side and within thirty (30) feet, where feasible, of the residential structure to contribute to passive energy conservation. Such trees shall be located a minimum of ten (10) feet away from the building façade.

E. All single-family detached lots that are smaller than six thousand, five hundred (6,500) square feet shall be planted as follows:

I. Plant a minimum of one (1) major shade tree and two (2) ornamental or evergreen trees per lot.

II. A minimum of eight (8) percent of the total lot area shall be planted with shrubs, perennials, and/or groundcover.

III. At least one (1) of the required major shade, ornamental, or evergreen trees shall be located in the front yard or, in the case of a corner lot, in the front or side yard facing the street.

F. An existing shade tree, except for an invasive species, exceeding two and one-half (2-1/2) inches diameter at breast height (dbh) located on an individual lot within seventy-five (75) feet of a dwelling unit may be counted toward fulfillment of the requirement for a tree on that lot, provided that the size (dbh), genus, condition, and location of each tree to be counted toward the fulfillment of this requirement is shown on the landscape plan. The site and landscape plan must also demonstrate that a minimum of seventy percent (70%) of the critical root zone of such tree will remain undisturbed.

G. When a buffer strip as required by Section 4.6, Buffering Development from Streets, is located on a single-family detached lot, the following shall apply:

I. If less than twenty-five percent (25%) of the area of the lot is occupied by the buffer strip, none of the trees required by Section 4.1 may be located in the buffer strip.

II. If more than twenty-five percent (25%) of the area of the lot is occupied by the buffer strip, one (1) of the shade trees or two (2) of the ornamental or evergreen trees required by Section 4.1, Residential Requirements, may be located in the buffer strip and may also count toward fulfillment of the buffer strip requirement.

2. Townhouses, One-Family Semi-Detached, Two-Family Dwellings, and Three-Family Dwellings Arranged Horizontally

The following standards shall not apply in a Transit-Oriented/ Activity Center zone unless the rear yards are 20 feet deep or greater and contain a minimum of one thousand five hundred (1,500) square feet of pervious area, in which case the planting requirements shall be placed in the rear yard. (Street trees are still required in accordance with Section 4.10).

A. Plant a minimum of one and one half (1-1/2) major shade trees and one (1) ornamental or evergreen tree per dwelling unit located on individual lots and/or common open space to best fulfill the objectives and design guidelines of this section.

B. Front and side building facades facing a street, drive aisle, parking lot, or common open space shall be planted with shrubs, perennials, and/or groundcover along the entire facade.

C. An existing shade tree, except for an invasive species, exceeding two and one-half (2-1/2) inches diameter at breast height (dbh) located in the common area or open space within seventy-five (75) feet of a dwelling unit may be counted toward fulfillment of the requirement for a tree, provided that the size (dbh), genus, condition, and location

of each tree to be counted toward the fulfillment of this requirement is shown on the landscape plan. The site and landscape plan must also demonstrate that a minimum of seventy percent (70%) of the critical root zone of such tree will remain undisturbed.

3. Two-Family Dwellings and Three-Family Dwellings Arranged Vertically

   The following standards shall not apply in a Transit-Oriented/ Activity Center zone unless the rear yards are 20 feet deep or greater and contain a minimum of one thousand five hundred (1,500) square feet of pervious area, in which case the planting requirements shall be placed in the rear yard. (Street trees are still required in accordance with Section 4.10).

   A. Plant a minimum of two (2) major shade trees and one and one-half (1.5) ornamental or evergreen trees per building to best fulfill the objectives and design guidelines of this section.

   B. Front and side building facades facing a street, drive aisle, parking lot, or common open space shall be planted with shrubs, perennials, and/or groundcover along the entire facade.

4. Common Areas

   The following standards apply to all single-family detached housing developments and other non-multifamily lots.

   A. The common areas shall be planted with one (1) major shade tree per one thousand (1,000) square feet of common area, excluding the square feet area of facilities such as a pool, pool deck, clubhouse, patio, covered structures, and similar impervious common area facilities. Up to 25% of the required tree planting may be substituted with a combination of ornamental trees, evergreen trees, minor shade trees, and understory shrubs and perennials, substituted per the plant units equivalencies.

   B. Twenty Five percent (25%) of the gross square feet or acreage of Common Area shall be planted with ornamental trees, evergreen trees, shrubs, perennials, and/or groundcover.

5. Multifamily Dwellings
   A. For multifamily dwellings in all zones, plant a minimum of one (1) major shade tree per every seven-hundred and fifty (750) square feet (or fraction thereof, rounding up) of green area provided.
   B. The following areas shall be excluded when determining the total amount of green area provided: exclusions as defined by the Glossary of Terms, any required parking lot landscape strip adjacent to a public right-of-way, any on-site woodland conservation area, and any required interior parking lot green area. Trees that count toward fulfillment of the parking lot perimeter requirement may be counted toward fulfillment of this requirement. Trees shall be located to best fulfill the objectives and design guidelines of this section.
   C. Up to twenty percent (20%) of the number of required shade trees may be substituted by the use of ornamental or evergreen trees; and/or shrubs and/or perennials, in accordance with the Plant Equivalencies Table.
   D. Twenty Five percent (25%) of the gross square feet or acreage of Common Area shall be planted with ornamental trees, evergreen trees, shrubs, perennials, and/or groundcover.
   E. An existing shade tree, except for invasive species, exceeding two and one-half (2-1/2) inches diameter at breast height (dbh) located anywhere in the green area on the site, except in the floodplain, may be counted on a one-to-one (1:1) basis for up to one hundred percent (100%) of the shade tree requirement on that site, provided that the size (dbh), genus, condition, and location of each tree to be counted toward the fulfillment of this requirement is shown on the landscape plan. The landscape plan must also demonstrate that a minimum of seventy percent (70%) of the critical root zone of such trees will remain undisturbed.

F. Submitted plans must distribute the Green Area planting requirements evenly throughout the Green Area, to help address a desire for understory plantings, species diversity, enhanced green infrastructure, in support of the County's environmental and Tree Canopy Ordinance goals and to ensure the following areas, at a minimum, are planted:

   I. All open space areas, greens, parks, squares, recreation and amenity facilities, and similar gathering spaces;

   II. Property boundary areas not covered by buffers required per Sections 4.6:Buffering Development From Streets and Section 4.7: Buffering Incompatible Uses;

   III. Entry areas not already covered by Section 4.2: Landscape Strips and Section 4.10: Street Trees.;

   IV. Entry drives, internal streets and drives, and vehicular circulation routes not already covered by Section 4.2: Landscape Strips and Section 4.10: Street Trees.; and,

   V. Areas between buildings and parking areas not already covered by Section 4.3: Parking Lots and Section 4.8: Building Frontage Zones.

TABLE 4.1-1

RESIDENTIAL TYPE	MINIMUM NUMBER OF SHADE TREES	MINIMUM NUMBER OF ORNAMENTAL OR EVERGREEN TREES	% OF TOTAL LOT AREA PLANTED WITH SHRUBS, PERENNIALS, AND/OR GROUND-COVER.	NOTES
Single-Family Detached Lots 40,000 sq. ft. or larger	5 per lot	4 per lot	2%	One (1) major Shade Tree per 1000 square feet of Common Area per 4.1.c.4
Single-Family Detached Lots 20,000- 39,999 sq. ft.	4 per lot	3 per lot	4%	One (1) major Shade Tree per 1000 square feet of Common Area per 4.1.c.4
Single-Family Detached Lots 9,500-19,999 sq. ft.	3 per lot	2 per lot	6%	One (1) major Shade Tree per 1000 square feet of Common Area per 4.1.c.4
Single-Family Detached Lots 6,500 -9,500 sq. ft.	2 per lot	2 per lot	8%	One (1) major Shade Tree per 1000 square feet of Common Area per 4.1.c.4 Total number of trees to be located on lots and/or in common open space and street trees may count towards per lot Shade Tree requirements.
Single-Family Detached Lots smaller than 6,500 sq. ft.	1 per lot	2 per lot	8%	One (1) major Shade Tree per 1000 square feet of Common Area per 4.1.c.4 Total number of trees to be located on lots and/or in common open space and street trees may count towards per lot Shade Tree requirements.
Townhouses, One-Family Semi-Detached, Two-Family Dwellings, Three-Family Dwellings Arranged Horizontally	1.5 per dwelling	1 per dwelling		One (1) major Shade Tree per 1000 square feet of Common Area per 4.1.c.4 Total number of trees to be located on lots and/or in common open space and Shade Trees may be exempt per 4.1.c.2 and 4.1.c.3.
Two-Family Dwellings and Three-Family Dwellings Arranged Vertically	2 per building	1.5 per building		One (1) major Shade Tree per 1000 square feet of Common Area per 4.1.c.4 Total number of trees to be located on lots and/or in common open space and Shade Trees may be exempt per 4.1.c.2 and 4.1.c.3.
Multifamily Areas Outside the Rural and Agricultural Zones	1 per 750 sq. ft. or fraction of green area	25% of gross SF shall be planted with ornamental trees, evergreen trees, shrubs, perennials, and/or groundcover		Understory planting per 4.1.c.5.C

SAMPLE SCHEDULE 4.1-1 RESIDENTIAL REQUIREMENTS FOR SINGLE-FAMILY DETACHED LOTS		
Lot size range		Square Feet
Number of lots		Lots
	# of Trees Required	*# of Trees Provided*
PER LOT		
Shade Trees		
Evergreen Trees		
Ornamental Trees		
Existing Shade Trees		
COMMON OPEN SPACE		
Shade Trees		
Evergreen Trees		
Ornamental Trees		
Shrubs, Perennials & Groundcover		
Existing Shade Trees		
SOUTH AND/OR WEST SIDE OF RESIDENTIAL STRUCTURE		
Shade Trees		
Evergreen/Ornamental Trees		
FRONT YARD		
Shade Trees		
Evergreen/Ornamental Trees		

NOTE: SEPARATE SCHEDULES SHALL BE PROVIDED BY APPLICANT FOR EACH LOT TYPE.

SAMPLE SCHEDULE 4.1-2 RESIDENTIAL REQUIREMENTS FOR TOWNHOUSES, ONE-FAMILY SEMI-DETACHED, TWO-FAMILY DWELLINGS, AND THREE-FAMILY DWELLINGS ARRANGED HORIZONTALLY		
Number of Dwelling Units		Units
	# of Trees Required	*# of Trees Provided***
PER DWELLING UNIT		
Shade Trees	1.5	
Evergreen/Ornamental Trees	1	
SITE TOTALS (INCLUDING COMMON AREA)		
Shade Trees		
Evergreen Trees		
Ornamental Trees		
Shrubs, Perennials & Groundcover		
Existing Shade Trees*		
** Min 2.5 inches dbh and located within 75 feet of a dwelling unit* *** On individual lots and/or in common open space*		

SAMPLE SCHEDULE 4.1-3 RESIDENTIAL REQUIREMENTS FOR TWO-FAMILY DWELLINGS AND THREE-FAMILY DWELLINGS ARRANGED VERTICALLY		
Number of Buildings		Buildings
	# of Trees Required	*# of Trees Provided***
PER DWELLING UNIT		
Shade Trees	2	
Evergreen/Ornamental Trees	1.5	
SITE TOTALS (INCLUDING COMMON AREAS)		
Shade Trees		
Evergreen Trees		
Ornamental Trees		
Shrubs, Perennials & Groundcover		
Existing Shade Trees*		
** Min 2.5 inches dbh and located within 75 feet of a dwelling unit* *** On individual lots and/or in common open space*		

SAMPLE SCHEDULE 4.1-4 RESIDENTIAL REQUIREMENTS FOR MULTIFAMILY DWELLINGS	
Green Area provided:	*sq. ft.*
Total number of Shade Trees required:	*(1:750 SF)*
Total number of Planting Units required:	*(Planting Units)*
Number of Shade Trees substituted: _____	*Ornamental/Evergreen* _____
Number of Shade Trees substituted: _____	*Shrubs/Perennials* _____
Understory Plantings @ 25%: _____ *SF of Common Area*	*Ornamental/Evergreen* _____
	Shrubs/Perennials _____
	Groundcover _____ *SF*
Total number of Shade Trees provided:	
Total number of existing shade trees to be saved (min. 2.5" dbh and located within Green Area but outside of flood plain)	
Total number of Ornamental and Evergreen trees provided:	*PU's*
Total number of Shrubs and Perennials provided:	*PU's*
Total number of Planting Units provided:	*PU's*
CHECKLIST OF AREAS PLANTED	
1. Open Space Areas and Facilities	
2. Property Boundary Area (other than buffer requirements)	
3. Entry Areas	
4. Entry Drive and Circulation (other than Landscape Strips and Street Tree requirements)	
5. Areas between and around buildings and parking areas (other than Parking Lot and Building Frontage Zone requirements)	

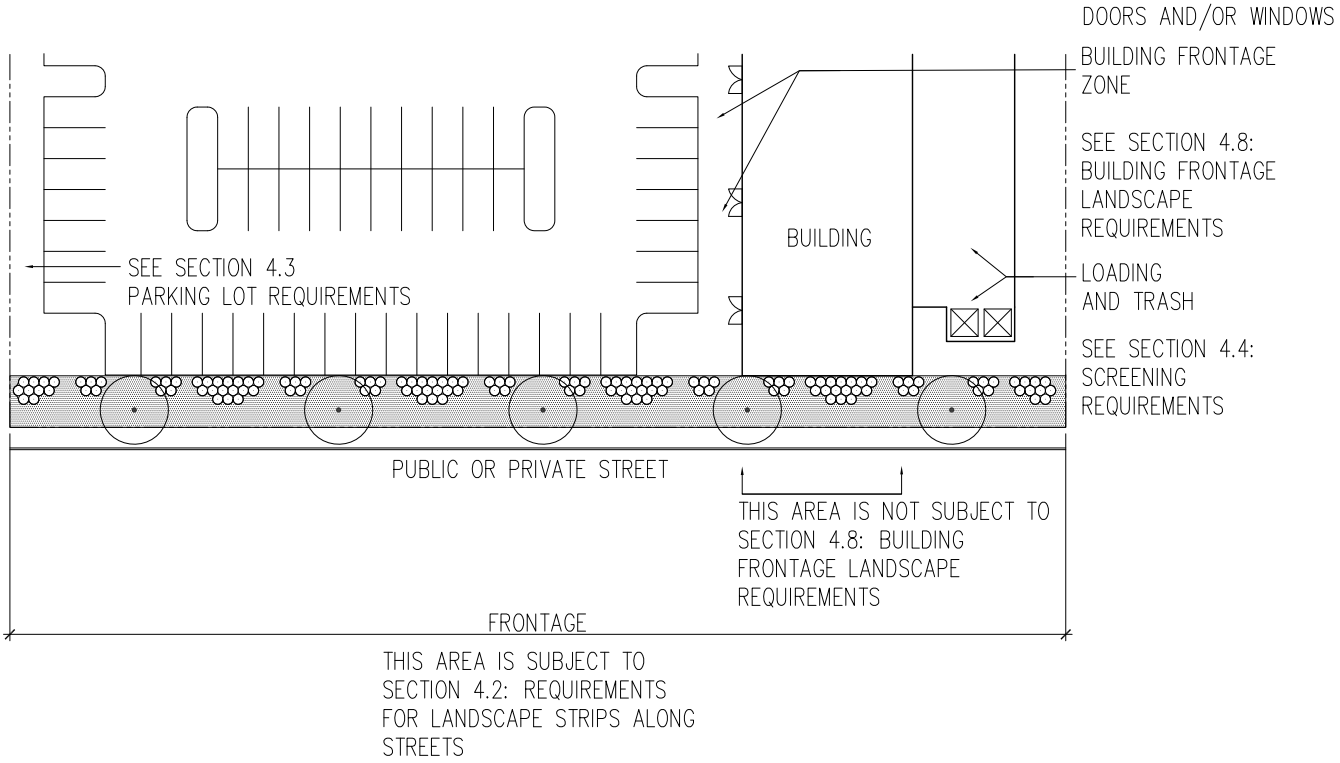
4.2 Requirements for Landscape Strips Along Streets

The Landscape Strip is the area between the building(s) or parking facility and the street right-of-way. For private streets with no right-of-way, the landscape strip is the area between the building(s) or parking facility and the sidewalk. The landscape strip must encompass the entire right-of-way frontage. See Figure 4.2-1.

Landscape strips apply only to nonresidential uses and any parking lot adjacent to and within thirty (30) feet of the back of curb of a street. Landscape strips apply to buildings, where the building façade facing the street is a back, side, or portion of the building with limited or no windows or doors.

For conditions where the façade of the building facing the street is the front, primary public entrance with doors and windows, and the building is within forty (40) feet of the back of curb of a street, and there is no parking or drive aisle between the building and the street, Section 4.8: Building Frontage Zones supersedes this section. Street trees along the street, Section 4.10: Street Trees still applies in all instances.

FIGURE 4.2-1



SECTION 4: LANDSCAPE STANDARDS

a. Purposes and Objectives

1. Promote pedestrian activity by establishing human scale and fostering a safe, pedestrian-friendly streetscape.
2. Clearly delineate the boundaries of streets and parking facilities adjacent to streets.
3. Enhance a business's commercial viability by improving its aesthetic appeal as viewed from the street to potential customers, investors, or passersby.
4. Improve the appearance of parking facilities as viewed from streets.
5. Improve the character of streets to enhance walkability.

b. Design Guidelines

1. Pedestrian sidewalks or trails that cross the landscape strip are permitted in any zone.
2. Trees at the edge of streets should be major shade trees that can be trimmed so that at maturity cars and trucks can circulate beneath the canopy without causing damage. Major shade trees are listed in Appendix 3, Plant Lists.
3. Shrubs in any landscape strip adjacent to a parking lot should provide a low, two (2) to four (4) foot high, year-round screen for paving and cars. Shrub varieties should either be evergreen or, if deciduous, have a dense, twiggy growth habit for winter screening and an attractive year-round appearance.
4. Plants within landscape strips are subject to many adverse conditions and are not likely to receive consistent care. Accordingly, plant varieties that require little maintenance and tolerate such conditions as sun, wind, drought, glare, reflected heat, salt and chemicals should be selected.

c. Requirements

1. For properties with frontage on a Special Roadway, the requirements of Section 4.6(c)(3), Buffering Development from Special Roadways, supersede the requirements of this section.
2. For nonresidential uses in any residential or nonresidential zone where a building's public entrance, primary windows, and/or storefront face onto a street and are within thirty (30) feet of the back of curb of a street, this section does not apply. Section 4.8: Building Frontage Zone supersedes the requirements of this section.

3. Existing, mature, healthy trees that are a minimum of four (4) inches in caliper may be preserved and counted towards this requirement.
4. Except as otherwise exempted by this Section, for all nonresidential uses in any zone and for all parking lots, a landscape strip, as described in Section 4.2(c)(5)-(7), shall be provided on the property abutting all public and private streets. The landscape strip may not include any paved area except pedestrian sidewalks that cross the landscape strip.
5. Landscape Strips for developments that occur in a Transit-Oriented/ Activity Center zone shall only be required:
    A. For parking lots where the parking lots abuts a street and is within thirty (30) feet of the back of curb of the street.
    B. Along freeways and major arterials.
    C. Along streets not designated as current or future Complete Streets (in accordance with the long range transportation plan and DPW&T standards) where the facade of the building along the street is a back or side that has limited or no windows/ doors and/or includes the loading or service area.

    Building frontage zones along streets that are designated as current or future Complete Streets, and/or where a building's front primary facade, front entrance, or any facade that includes multiple doors and/or windows, shall be planted in accordance with Section 4.8: Building Frontage Landscaping Requirements. Section 4.2: Requirements for Landscape Strips Along Streets shall not apply.)
6. Nonresidential, Residential, and Transit-Oriented/Activity Center, Zones:
    A. The following landscape strip treatments may be used singly or in combination, in accordance with the permitted zones:
        I. OPTION 1 - Ten Foot Landscape Strip in Nonresidential, Residential, and Transit-Oriented/Activity Center zones:

        Provide a minimum ten (10) foot wide landscape strip to be planted with a minimum of one (1) shade tree and fifteen (15) shrubs/perennials per thirty (30) linear feet of street frontage, excluding driveway openings

SECTION 4: LANDSCAPE STANDARDS

(See Figure 4.2-2A). Up to one-half (1/2) of the number of required shrubs/perennials may be substituted on a five (5) square feet of groundcover to one (1) shrub basis. If the landscape strip is less than twenty (20) feet in width, the shade trees shall be selected for a small to medium size crown and staggered to avoid crowding the required street trees or, and only if staggering does not avoid crowding, the shade trees may be substituted with ornamental trees on a two (2) to one basis (See Figure 4.2-2B); or

FIGURE 4.2-2A: OPTION 1A

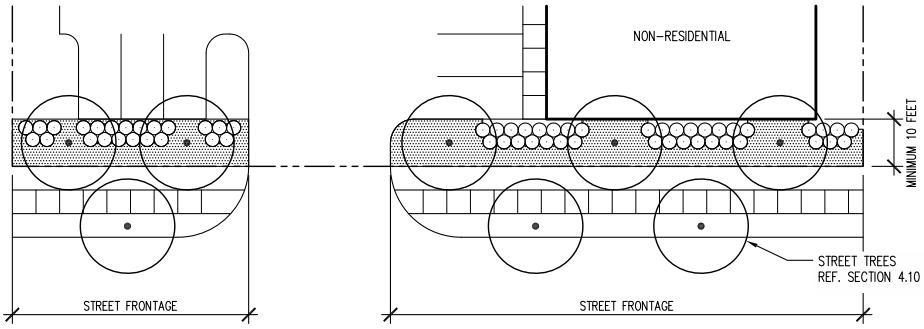
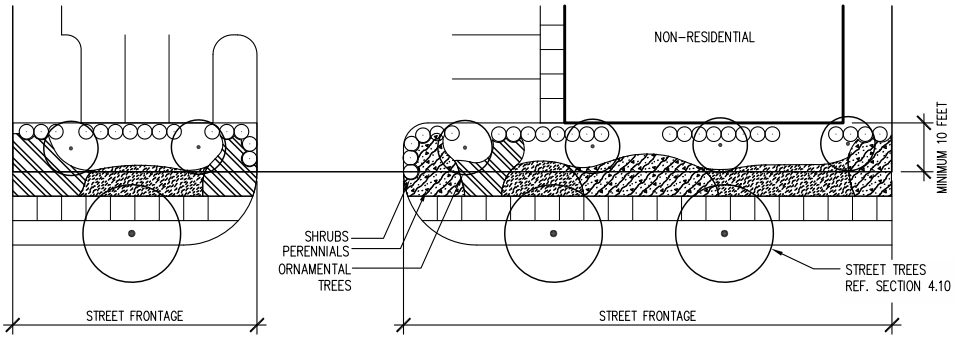


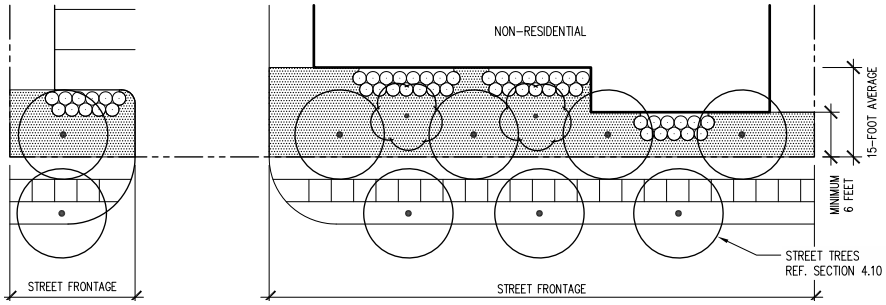
FIGURE 4.2-2B: OPTION 1B



II. OPTION 2 - Six-Foot Minimum and Fifteen-Foot Average Landscape Strip in Nonresidential and Residential Zones:

Provide a landscape strip not less than six (6) feet wide, with an average not less than fifteen (15) feet wide, to be planted with a minimum of one (1) shade tree and twenty (20) shrubs/perennials per thirty (30) feet of street frontage, excluding driveway openings (See Figure 4.2-3). Up to one-half (1/2) of the number of required shrubs/perennials may be substituted on a one (1) ornamental trees to five (5) shrubs basis, or a five hundred (500) square feet of groundcover to one (1) shrub basis; If the landscape strip is less than twenty (20) feet wide, the shade trees shall be selected for a small to medium size crown and staggered to avoid crowding the required street trees or, and only if staggering does not avoid crowding, the shade trees may be substituted with ornamental trees on a two (2) to one basis; or

FIGURE 4.2-3: OPTION 2

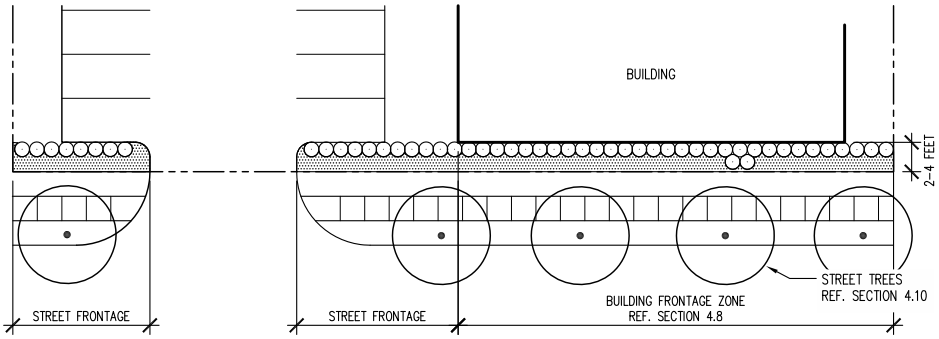


SECTION 4: LANDSCAPE STANDARDS

III. OPTION 3 - Two to Four-Foot Landscape Strip in Transit-Oriented/Activity Center zones:

Provide a landscape strip not less than two (2) feet wide and not more than four (4) feet wide, to be planted in a continuous row with a minimum of ten (10) shrubs/perennials per thirty (30) feet of street frontage, excluding driveway openings (See Figure 4.2-4).

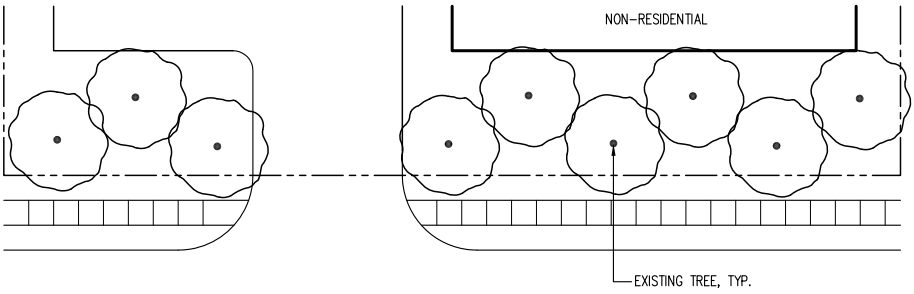
FIGURE 4.2-4: OPTION 3



IV. OPTION 4 - Existing Trees in a 25-foot Landscape Strip:

Provide a minimum twenty-five (25) foot wide strip of noninvasive existing trees. (See Figure 4.2-5); or

FIGURE 4.2-5 OPTION 4



V. OPTION 5 - Masonry Wall - for Parking Lots Within Transit-Oriented/Activity Center, Nonresidential, and Residential Zones:

Provide a minimum six (6) foot wide landscape strip abutting the street sidewalk/ROW adjacent to three (3) to four (4) foot high brick, stone, or finished stamped concrete masonry wall. The wall may be located within the six (6) foot wide landscape strip, however there shall not be less than four (4) feet of planting area between the wall and the right-of-way. (See Figure 4.2-6.a)

In a Transit-Oriented/Activity Center zone, there is no minimum landscape strip width requirement if the wall aligns with the adjacent building frontage. (See Figure 4.2-6.b) Provide planting within the strip at the rate of one (1) shade tree and ten (10) shrubs per thirty (30) linear feet of frontage, excluding driveway openings. If the landscape strip is less than twenty (20) feet wide, the shade trees shall be selected for a small to medium size crown and staggered to avoid crowding the required street trees or, and only if staggering does not avoid crowding, the shade trees may be substituted with ornamental trees on a two (2) to one basis and/or with shrubs/perennials on a ten (10) to one basis.

In the Transit-Oriented/Activity Center zone if the hardscape/sidewalk abuts the wall, no plantings are required; however, if there is a landscape strip, the shrubs/perennials are required and the trees are not. (See Figure 4.2-4.b).

SECTION 4: LANDSCAPE STANDARDS

FIGURE 4.2-6.A: OPTION 5A

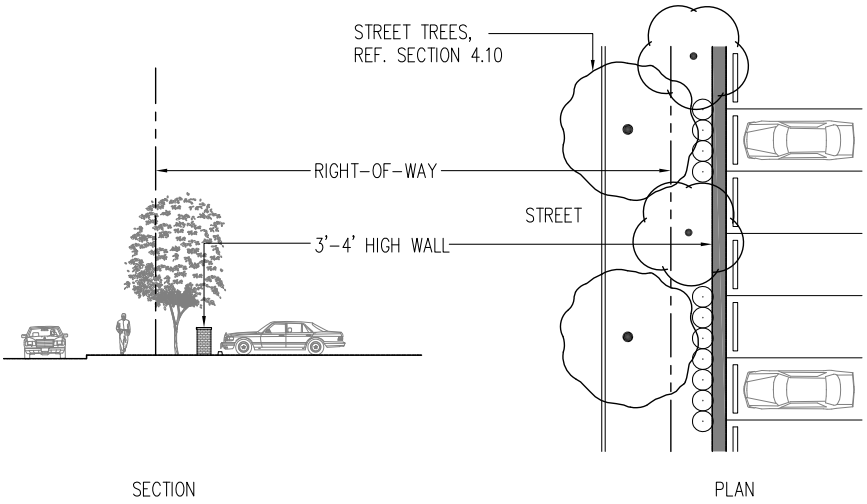
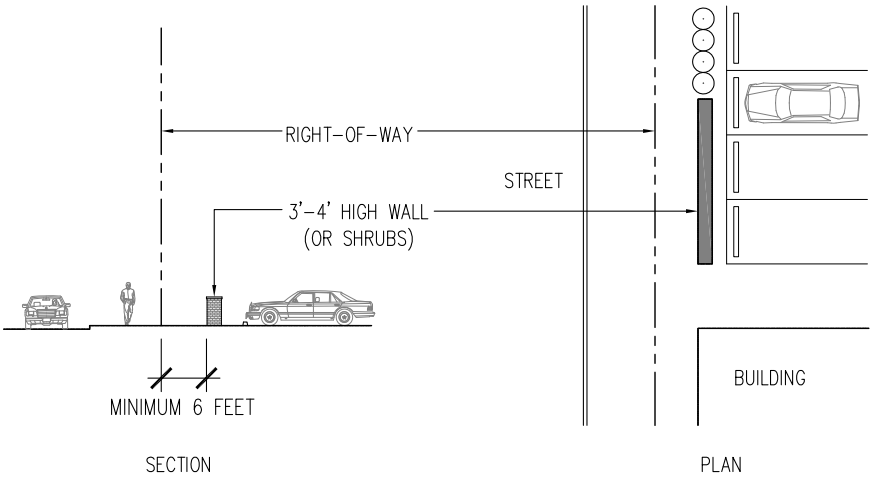


FIGURE 4.2-6.B: OPTION 5B



B. Where the plantings required in 4.2(c)(3)(A)(i) or 4.2(c)(3)(A)(ii) would result in an inappropriate or impractical design due to underground utilities, overhead wires, or other factors, the following shall apply:

   I. Underground Utilities: The landscape strip should be located outside any provided public utility easement. If landscaping is proposed and approved within the public utility easement, the owner shall maintain or replace the plant material as stated in Section 1.6, Maintenance and Enforcement.

II. Overhead Utilities: Two (2) ornamental trees may be substituted for one (1) shade tree.

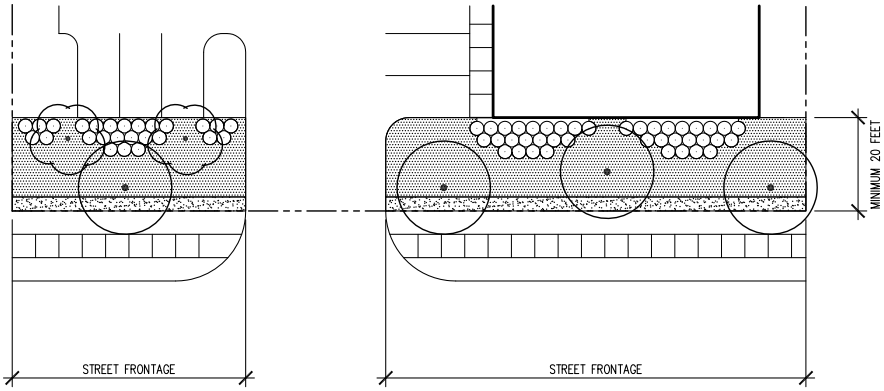
7. Rural and Agricultural Zones

A. The following landscape strip treatments may be used singly or in combination:

I. Option 1 – Twenty-Foot Landscape Strip:

Provide a minimum twenty (20) foot wide landscape strip to be planted with a minimum of one (1) shade tree and twenty(20) shrubs per thirty-five (35) linear feet of frontage, excluding driveway openings (See Figure 4.2-7). If a public utility easement is proposed or exists along the street frontage, then plant materials shall be placed outside the public utility easement. Up to one-fourth (1/4) of the number of required shade trees may be substituted on a two-to-one (2:1) basis with ornamental/evergreen trees. Plantings shall be planted in naturalistic forms.

FIGURE 4.2-7: OPTION 1



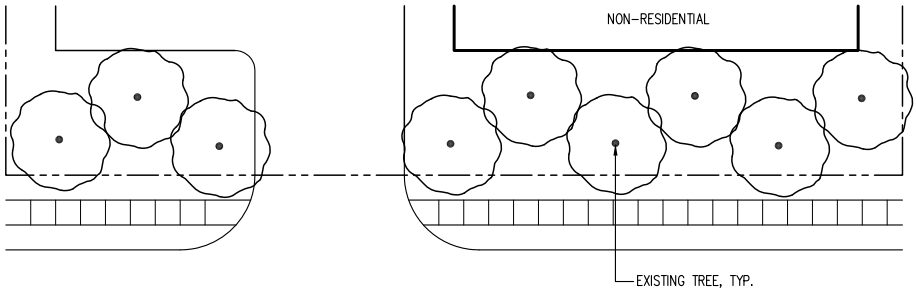
NOTE: THERE WILL NEED TO BE CONTINUED COORDINATION WITH THE UTILITY COMPANIES AND PUBLIC TRANSPORTATION AGENCIES REGARDING THE LOCATION AND REQUIREMENTS FOR PUBLIC UTILITY EASEMENTS.

SECTION 4: LANDSCAPE STANDARDS

II. Option 2- Twenty-Five-Foot Landscape Strip:

Provide a minimum twenty-five (25) foot wide strip of noninvasive existing trees and/or understory plantings.

FIGURE 4.2-8: OPTION 2



d. Demonstrating Compliance

The landscape plan shall include a schedule as provided in Schedule 4.2-1 that demonstrates compliance with the requirements of this section.

SAMPLE SCHEDULE 4.2-1 REQUIREMENTS FOR LANDSCAPE STRIPS ALONG STREETS														
	Non-Residential, Residential, and Transit-Oriented/ Activity Center Zones										Rural and Agricultural Zones			
	OPTION 1 ☐		*OPTION 2* ☐		*OPTION 3* ☐		*OPTION 4* ☐		*OPTION 5* ☐		*OPTION 1* ☐		*OPTION 2* ☐	
Public Utility Easement Located Along Frontage	Y ☐	N ☐	Y ☐	N ☐	Y ☐	N ☐	Y ☐	N ☐	Y ☐	N ☐	Y ☐	N ☐	Y ☐	N ☐
Linear Feet	_____ L.F.		_____ L.F.		_____ L.F.		_____ L.F.		_____ L.F.		_____ L.F.		_____ L.F.	
Requirements	REQ.	PROV.	REQ.	PROV.	REQ.	PROV.	REQ.	PROV.	REQ.	PROV.	REQ.	PROV.	REQ.	PROV.
Shade trees														
Shrubs/ Perennials														
Ornamental trees														
Evergreen trees														
Groundcover (S.F.)														
Masonry wall (L.F.)														
Existing trees														

NOTE: THERE WILL NEED TO BE CONTINUED COORDINATION WITH THE UTILITY COMPANIES AND PUBLIC TRANSPORTATION AGENCIES REGARDING THE LOCATION AND REQUIREMENTS FOR PUBLIC UTILITY EASEMENTS.

SECTION 4: LANDSCAPE STANDARDS

4.3 Parking Lot Requirements

Parking lot planting requirements apply to all zones. Requirements include parking lot perimeters when adjacent to another property and parking lot interiors. Where parking lots abut a public or private street, and are within thirty (30) feet of the back of curb of the street, Section 4.2: Requirements for Landscape Strips Along Streets shall apply.

a. Purposes and Objectives

   1. Enhance the appearance of surface parking facilities as viewed from the street and adjacent compatible uses.
   2. Provide shade and visual relief within parking facilities.
   3. Use green space and trees to delineate vehicular and pedestrian circulation within parking facilities.
   4. Minimize the heat island effect created by large expanses of pavement.
   5. Provide healthy soil volumes to support the growth of trees.

b. Design Guidelines

   1. Planting islands should be used to define circulation patterns, break up rows of parking, and to soften the visual impact of large expanses of pavement.
   2. In general, impervious areas within parking lots should be evenly distributed throughout the parking lot to maximize shading.
   3. Islands should be provided at both ends of parking rows to protect parked cars from moving vehicles and to ensure more even distribution of shade throughout the parking lot.
   4. Trees in or at the edge of parking lots should be major shade trees that can be trimmed so that at maturity cars and trucks may circulate beneath the canopy without causing damage. Major shade trees are listed in Appendix 3, Plant Lists.
   5. Good visibility in the parking lot is important, both for neighborhood security and traffic safety. The use of landscaping elements and plants that restrict visibility, such as tall shrubs, evergreen trees, and low-branching trees, should be avoided.
   6. The use and location of plant materials at vehicular entrances should be placed to maintain safe sight distances.

7. Plants in parking lots are subject to many adverse conditions and are not likely to receive consistent care. Accordingly, principles of sustainability should be considered when selecting plant materials. Specifically, plant material should be moderate-to-slow growing, require little maintenance, and tolerate such conditions as sun, wind, drought, glare, reflected heat, salt and chemicals, and restricted planting spaces.
8. Planting spaces should be large enough to allow for healthy tree growth and should be protected from car overhangs and opening car doors.

c. Requirements

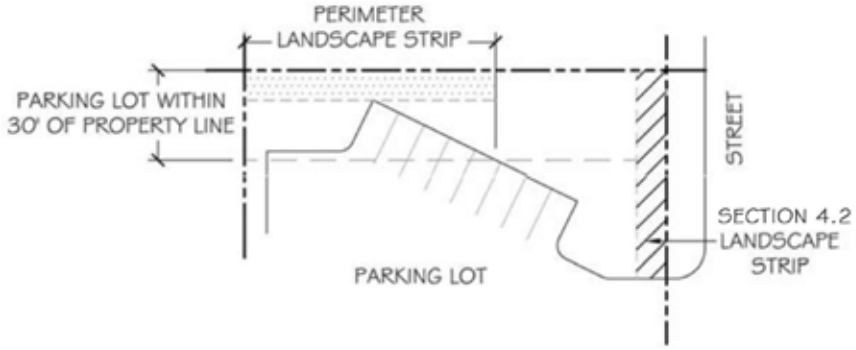
The following requirements apply to all parking lots unless specified otherwise, and except those provided for, and on the same lot with, single-family dwellings.

Perimeter areas of parking lots designated (an with an appropriate easement) for planned and/or future cross access walkways, trails, and vehicular access drives that connect to adjacent properties are not required to be part of the planting area calculations or requirements.

1. Parking Lot Perimeter Landscape Strip Requirements
   A. When the adjacent property is an incompatible use as defined in Section 4.7, Buffering Incompatible Uses, parking lots shall be set back and buffered from adjacent property lines in accordance with those requirements and are not subject to this section. In all other cases, the perimeter of a proposed parking lot adjacent to a property line shall be treated as indicated in Section 4.3(c)(1)(C)-(E).
   B. For the purposes of this section, a parking lot shall be considered adjacent to a property line for that portion of the lot that is within thirty (30) feet of the property line, and no building is located between the lot and the property line (See Figure 4.3-1).

SECTION 4: LANDSCAPE STANDARDS

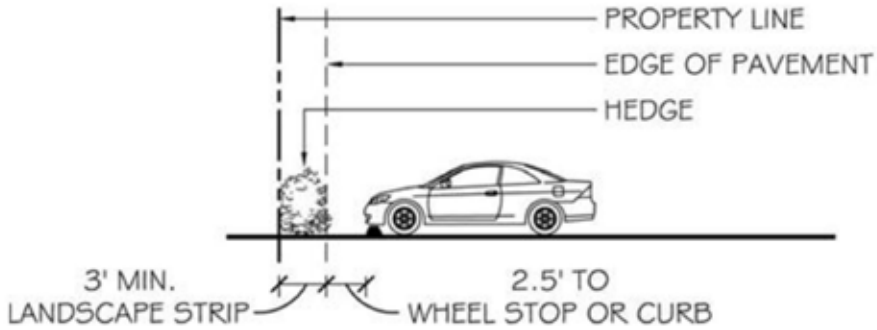
FIGURE 4.3-1: PARKING LOT WITHIN 30 FEET OF A PROPERTY LINE



C. Areas inside the Capital Beltway (inclusive of the corporate boundaries of the City of Greenbelt, City of Glenarden, and the Town of Forest Heights) and Transit-Oriented/Activity Center Zones:

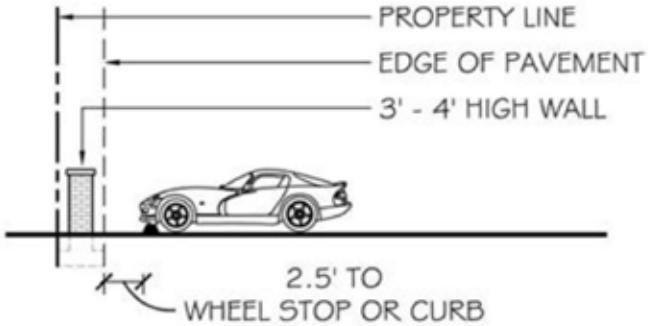
   I. Option 1 – Three-Foot Wide with Shrubs:
   Provide a minimum three (3) foot wide landscape strip between the parking lot and any adjacent property line with fifteen (15) shrubs per thirty-five (35) linear feet of parking lot adjacent to a property line to create a solid 3-foot high evergreen hedge (See Figure 4.3-2); or

FIGURE 4.3-2: OPTION 1



II. Option 2 – Masonry Wall:
Provide a three (3) to four (4) foot high masonry wall between the parking lot and any adjacent property line. No minimum dimension is required. (See Figure 4.3-3); or

FIGURE 4.3-3: OPTION 2

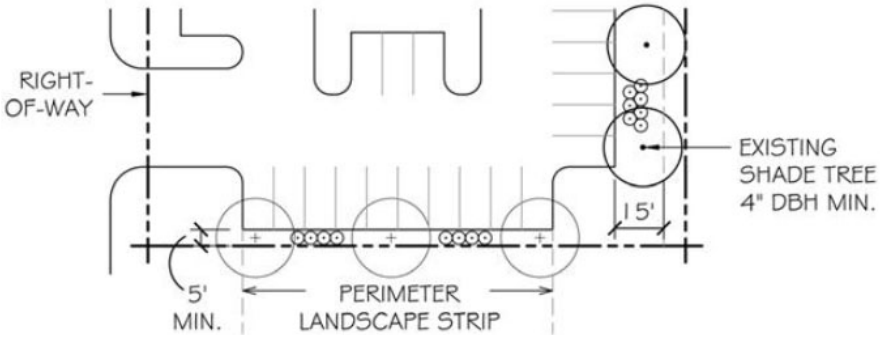


III. Option 3 – Five-Foot Wide with Shrubs and Trees:

Provide a minimum five (5) foot wide landscape strip between the parking lot and any adjacent property line. Within this landscape strip, provide one (1) tree and ten (10) shrubs per thirty (30) linear feet of parking lot adjacent to a property line. (This does not mean that shade trees must be located thirty (30) feet on center.) Any existing shade tree, except an invasive species, exceeding four (4) inches diameter at breast height (dbh) and located within fifteen (15) feet of the edge of the parking lot may count at a rate of one-to-one (1:1) toward fulfillment of this requirement, provided that seventy percent (70%) of the critical root zone is undisturbed. Shrubs shall not be planted within the critical root zone, and the shrub requirement shall be waived when preserving existing vegetation. (See Figure 4.3-4).; or

SECTION 4: LANDSCAPE STANDARDS

FIGURE 4.3-4: OPTION 3

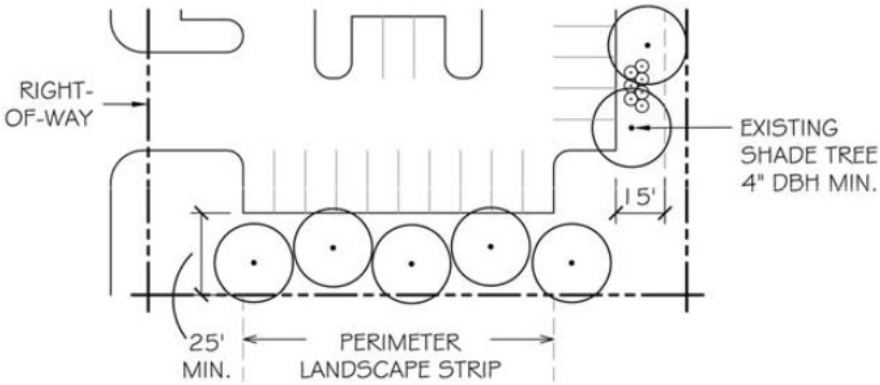


D. Nonresidential, Residential, and Rural and Agricultural Zones outside the Capital Beltway:

I. Option 4 – Twenty-Five Foot Wide:

Provide a minimum twenty-five (25) foot wide strip of noninvasive existing trees (See Figure 4.3-5).

FIGURE 4.3-5: OPTION 4



II. Option 5 – Ten Foot Wide with Shrubs and Trees:

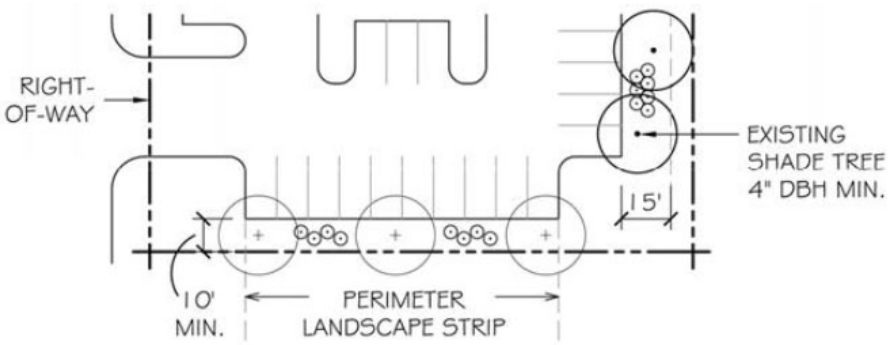
Provide a minimum ten (10) foot wide landscape strip between the parking lot and any adjacent property line. Within this landscape strip, provide one (1) shade tree and ten (10) shrubs per thirty-five (35) linear feet of parking lot adjacent to a property line. (This does not mean that shade trees must be located thirty-five (35) feet on center.)

Shrubs shall include a diversity of species and shall be

arranged in an informal and naturalistic manner.

Any existing shade tree (except an invasive species) exceeding four (4) inches diameter at breast height (dbh) that is located within fifteen (15) feet of the edge of the parking lot may count at a rate of one-to-one (1:1) toward fulfillment of this requirement, provided that seventy percent (70%) or more of the critical root zone is undisturbed. Shrubs shall not be planted within the critical root zone, and the shrub requirement shall be waived when preserving existing vegetation (See Figure 4.3-6). Up to one-fourth (1/4) of the number of required shade trees may be substituted on a two-to-one (2:1) basis with ornamental/evergreen trees. or

FIGURE 4.3-6: OPTION 5



III. Option 6 – Thirty-Foot Wide (Rural and Agricultural Zones Only):

Provide a minimum thirty (30) foot wide setback from the property line. Planting is not required.

IV. Where the plantings required by Options 4 or 5 above would result in an inappropriate or impractical design due to existing overhead utilities, two (2) ornamental trees may be substituted for one (1) shade tree.

SECTION 4: LANDSCAPE STANDARDS

2. Parking Lot Interior Planting Requirements
   A. The minimum Parking Lot Interior Planting Requirements shall be calculated as a percentage of the parking lot area based on the size of the parking lot as shown in Table 4.3-1, Parking Lot Interior Planting Requirements. For purposes of computing the total area of any parking lot, all areas within the perimeter of the parking lot shall be counted, including planting islands, curbed areas, corner areas, parking spaces, aisles, and all vehicular surfaces. Landscaped areas situated outside of the parking lot, such as perimeter areas, landscape strips, and areas surrounding buildings, shall not be counted as an interior planting area (See Figure 4.3-7).
   B. Permits for any building, building renovation, or building expansion that results in a limit of disturbance as shown on any site plan shall trigger a Parking Lot Interior Planting requirement of five percent (5%) of the limit of disturbance of any existing parking compound within the boundaries of the limit of disturbance.

FIGURE 4.3-7 PARKING LOT AREA

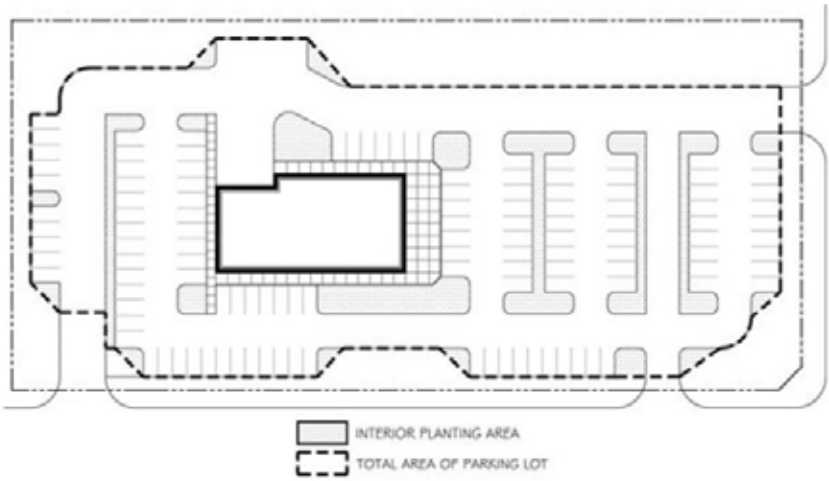


TABLE 4.3-1: PARKING LOT INTERIOR PLANTING REQUIREMENTS

PARKING LOT AREA	PERCENT OF INTERIOR PLANTING AREA REQUIRED
0-6,999 sq. ft.	0
7,000-49,999 sq. ft.	8
50,000-99,999 sq. ft.	10
100,000- 149,999 sq. ft.	13
150,000 sq. ft. or larger	15

C. At least one (1) shade tree shall be provided for each three hundred (300) square feet (or fraction) of interior landscape area provided. These trees shall have a clear trunk at least eight (8) feet above finished grade level, however, Trees in or at the edge of parking lots should be species that branch no lower than twelve (12) feet from the ground at maturity to allow cars and trucks to circulate beneath the canopy without causing damage. See Sec. 3.5.H.

D. If a parking lot less than seven thousand (7,000) square feet is built without interior landscaping and, later, additional spaces are added so that the total size of the lot is greater than seven thousand (7,000) square feet, then the percentage of interior planting area required shall be calculated for the entire parking lot.

E. Planting spaces must be large enough to allow for healthy tree growth and must be protected from car overhangs and opening car doors.

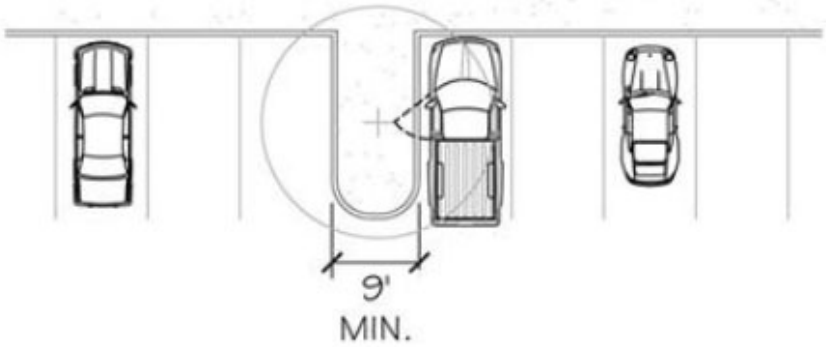
   I. A minimum of one hundred sixty (160) square feet of contiguous pervious land area shall be provided for each tree. No tree planting area shall be less than six (6) feet wide in any dimension.

   II. A curb or wheel stop shall be provided for all parking spaces abutting planting or pedestrian areas to protect those areas from overhanging by parked vehicles.

   III. Planting islands that are parallel to parking spaces on both sides shall be a minimum of nine (9) feet wide to allow car doors to swing open (See Figure 4.3-8).

SECTION 4: LANDSCAPE STANDARDS

FIGURE 4.3-8: MINIMUM WIDTH OF LANDSCAPE ISLAND PARALLEL TO SPACES (PARKING ON BOTH SIDES)



IV. In cases where a planting island is perpendicular to parking spaces and the spaces head into the planting island on both sides, the island shall be a minimum of nine (9) feet wide to allow for bumper overhang (See Figure 4.3-9). If parking spaces are located on only one side of such a planting island, the island shall be a minimum of six (6) feet wide (See Figure 4.3-10), where drive aisles are required to be designed to appear as an extension of the street network in accordance with the Zoning Ordinance, the planting island shall be increased by the width of the required sidewalk. (See Figure 4.3-11).

FIGURE 4.3-9: MINIMUM WIDTH OF LANDSCAPE ISLAND PERPENDICULAR TO SPACES (PARKING ON BOTH SIDES)

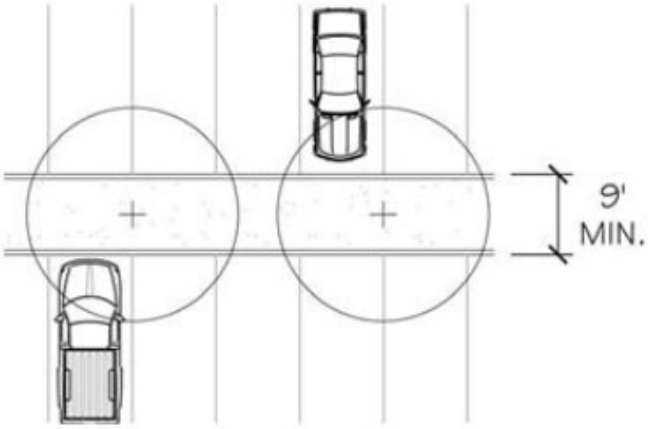


FIGURE 4.3-10: MINIMUM WIDTH OF LANDSCAPE ISLAND PERPENDICULAR TO SPACES (PARKING ON ONE SIDE)

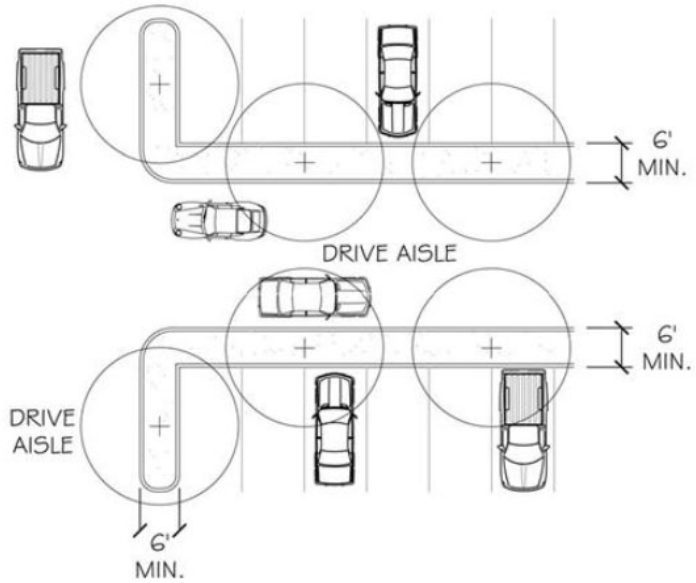
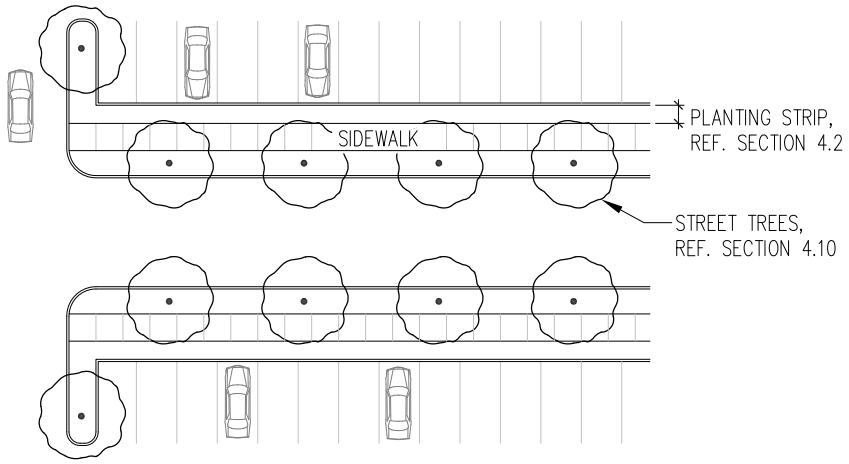


FIGURE 4.3-11: DRIVE AISLE DESIGNED TO APPEAR AS AN EXTENSION OF THE STREET NETWORK



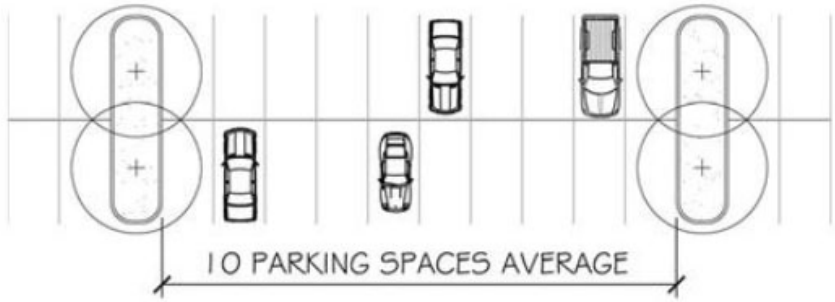
SECTION 4: LANDSCAPE STANDARDS

F. Existing shade trees (except an invasive species) may be retained and credited toward fulfilling parking lot interior planting requirements if appropriate measures are taken to provide long-term viability based on the species, condition, and size of the tree; the limits of disturbance, allowing a minimum area of seventy percent (70%) critical root zone retention protection during construction; and specialized tree management practices, as approved by the Planning Director.

G. Main drive aisles shall be separated from abutting parking spaces by a minimum six (6) foot wide interior planting area. Where drive aisles are required to be designed to appear as an extension of the street network in accordance with the Zoning Ordinance, the planting island shall be increased by the width of the required sidewalk. (See Figure 4.3-11).

H. A minimum of one (1) interior planting island shall be provided on average for every ten (10) contiguous spaces (See Figure 4.3-12).

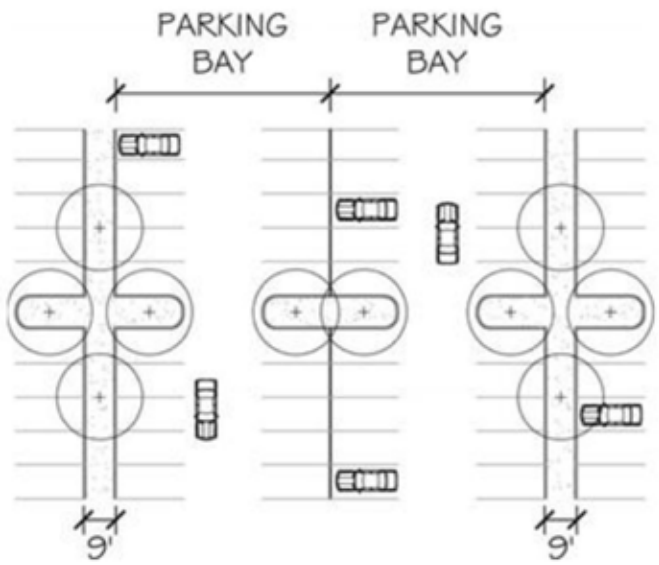
FIGURE 4.3-12: MINIMUM NUMBER OF PLANTING ISLANDS



I. The following requirements apply to all zones, and shall only apply to parking lots more than fifty thousand (50,000) square feet in area:

   I. There shall be no more than two (2) contiguous parking bays without the provision of a minimum nine (9) foot wide island separating the two bays from additional parking bays or drive aisles (See Figure 4.5-12); or

FIGURE 4.3-13: PARKING BAY SEPARATION



II. At least one (1) shade tree shall be provided for each two hundred (200) square feet (or fraction) of interior landscape area provided. These trees shall have a clear trunk at least eight (8) feet above finished grade level.

d. Demonstrating Compliance

1. The landscape plan shall include a schedule as provided below demonstrating compliance with the requirements of this section.

SECTION 4: LANDSCAPE STANDARDS

SAMPLE SCHEDULE 4.3-1 PARKING LOT PERIMETER LANDSCAPE STRIP FOR PARKING LOTS 7,000 SQUARE FEET OR LARGER												
	Inside Beltway (Inclusive of the corporate boundaries of the City of Greenbelt, City of Glenarden, and Town of Forest Heights)						**Outside Beltway**					
	OPTION 1 ☐		***OPTION 2*** ☐		***OPTION 3*** ☐		***OPTION 4*** ☐		***OPTION 5*** ☐		***OPTION 6*** ☐	
Linear Feet												
Width of Perimeter Strip Required												
Width of Perimeter Strip Provided												
Requirements	REQ.	PROV.	REQ.	PROV.	REQ.	PROV.	REQ.	PROV.	REQ.	PROV.	REQ.	PROV.
Shade Trees												
Shrubs/ Perennials												
Ornamental Trees												
Evergreen trees												
Groundcover (S.F.)												
Masonry Wall (L.F.)												
Existing Trees												

SAMPLE SCHEDULE 4.3-2 INTERIOR PLANTING FOR PARKING LOTS 7,000 SQUARE FEET OR LARGER		
Parking Lot Area (See Figure 4.3-7)		*square feet*
Interior landscaped area required	%	*square feet*
Interior landscaped area provided	%	*square feet*
Minimum number of shade trees required (1 per 300 sf of interior planting area provided) OR (1 per 200 sf of interior planting area provided)		
Number of shade trees provided		
Is a minimum of 160 square feet of contiguous pervious land area provided per shade tree?	☐ *yes*	☐ *no*
Is there a planting island on average every 10 spaces?	☐ *yes*	☐ *no*
Is a curb or wheel stop provided for all parking spaces abutting a planting or pedestrian area?	☐ *yes*	☐ *no*
Are planting island that are either parallel or perpendicular to parking spacs on both sides a minimum of 9 feet wide?	☐ *yes*	☐ *no*
Is a planting island that is perpendicular to parking spaces on one side a minimum of 6 feet wide?	☐ *yes*	☐ *no*
For parking lots 50,000 square feet or larger: Is there a 9-foot-wide planting island perpendicular to parking for every 2 bays?	☐ *yes*	☐ *no*
OR Do the number of shade trees increase? (1 per 200 sq. feet of interior planting area required)	☐ *yes*	☐ *no*

SECTION 4: LANDSCAPE STANDARDS

4.4 Screening Requirements

a. Purposes and Objectives

1. Conceal loading and maintenance areas from residential properties and streets.
2. Conceal all outdoor merchandise storage areas from residential properties and streets.
3. Completely conceal all trash collection facilities.
4. Conceal mechanical equipment from adjacent properties, streets, outdoor living and recreation areas, and parking facilities.

b. Design Guidelines

1. In general, screening materials should consist of evergreen trees and shrubs, walls, fences, and berms. Screening fences and walls should not be constructed of corrugated metal, corrugated fiberglass, sheet metal, chain link, or wire mesh.
2. Vegetative screening should consist primarily of evergreen trees and shrubs, but finely branched deciduous trees and shrubs planted in masses or tightly spaced may also be considered.
3. Screening elements, such as walls, fences, and berms, should be carefully designed to avoid unnecessarily obstructing views, restricting light and air, or creating hazardous blind spots (see Section 3.5(f), Crime Prevention Through Environmental Design).
4. All screening structures should be constructed of attractive, durable, low-maintenance materials compatible with the architectural character and materials of adjacent buildings.
5. Screening options presented below should not be used to produce monotonous, linear designs. If a long stretch of screening is required, options should be combined or alternated, or plant materials should be varied to achieve a more pleasing effect. Other creative options, such as grade changes or use of existing vegetation or plant materials, are encouraged, but the applicant must demonstrate to the satisfaction of the reviewer that comparable or superior screening will be provided.
6. At the time of installation or planting of screening materials, screening should occupy seventy-five percent (75%) of a vertical rectangular plane (excluding driveways) sufficiently tall and wide to accomplish the required screening.

7. Screening in addition to that specified below may also be required if, because of slopes or other specific conditions on a site, the required screening measures do not achieve the necessary level of concealment (see Section 3.4(f), Screening and Buffering Plantings).

c. Requirements

When loading and service spaces, trash and recycling facilities, and mechanical equipment are within a building and screened by an overhead door, none of the following requirements apply.

1. Materials:
   A. Screening walls shall be compatible with on-site structures in terms of design and materials.
   B. The use of corrugated metal, corrugated fiberglass, sheet metal, chain link, or wire mesh fencing is prohibited.

2. Loading Spaces

Loading spaces, loading docks, maintenance areas, and access driveways adjoining these areas shall be screened from adjoining existing residential development, land in any residential zone, or land proposed to be used for residential purposes on an approved Planned Development basic plan, or any approved detailed or Special Exception site plan. Loading spaces, loading docks, and maintenance areas shall also be screened from constructed public streets.

Within a Transit-Oriented/Activity Center zone, a loading space along and parallel to a street as part of an on-street parking area is not required to be screened.

Options:

A. Six (6) foot high sight-tight fence or wall (within a Transit-Oriented/Activity Center zone, the fence or wall shall have similar materials and architectural details as the adjacent building, and shall include an opaque gate); or
B. Minimum two (2) foot high berm, densely planted with vegetation to achieve a screen with an ultimate height of at least six (6) feet (not allowed in a Transit-Oriented/Activity Center zone); or
C. Six (6) foot high, evergreen screen (trees or shrubs, minimum six (6) feet high at planting, minimum nine (9) feet on

SECTION 4: LANDSCAPE STANDARDS

center, double staggered row); (not allowed within a Transit-Oriented/Activity Center zone if adjacent to a street); or

D. Loading and service within the building, screened with an overhead door, or

E. A combination of the above options.

3. Outdoor Storage

Outdoor storage areas shall be screened from adjoining existing residential uses, land in any residential zone, or land proposed to be used for residential purposes on an approved Planned Development basic plan, or any approved detailed or Special Exception site plan. Outdoor storage areas shall also be screened from constructed public streets.

Options:

A. Six (6) foot high, sight-tight fence or wall; or

B. Minimum two (2) foot high berm, densely planted with vegetation to achieve a screen with an ultimate height of at least six (6) feet (not allowed in a Transit-Oriented/Activity Center zone); or

C. Six (6) foot high evergreen screen (trees or shrubs, minimum six (6) feet high at planting, minimum nine (9) feet on center, double staggered row) (not allowed within a Transit-Oriented/Activity Center zone if adjacent to a street); or

D. A combination of the above options.

4. Trash and Recycling Facilities

All dumpsters, trash pads, and trash collection or storage areas, including recycling facilities, shall be carefully located and oriented on the site to be as inconspicuous as possible. Such facilities shall be screened from all adjoining properties, except for those on which industrial or resource recovery uses are permitted; from all roads; from all outdoor living and recreation areas, parking areas, and entrance drives within the development; and, if located within a commercial development, from all outdoor recreation areas, retail parking areas, and entrance drives within the development. Where screening is required, the facilities shall be wholly enclosed.

Options for all zones:

A. Wholly located inside a building and screened with an overhead door; or,

B. An extension of a building; or

C. Screened with a wall and opaque gate that has similar materials and architectural details as the adjacent building

D. Sight-tight fence or wall (height to be determined by size and location of area to be screened) (within a Transit-Oriented/ Activity Center zone, the fence or wall shall have similar materials and architectural details as the adjacent building).; or

Options for all zones, except the core area of any Transit-Oriented/ Activity Zone:

E. Evergreen screen (height, spacing, and variety to be determined by size and location of area to be screened).

5. Mechanical Equipment

All mechanical equipment and meters (except for public utility transformers; electric and other meters attached to single-family dwellings; and heat pumps or air conditioners for single-family dwellings) shall be screened from all adjacent properties, except for those properties on which industrial uses are permitted; from all adjacent roads; from all outdoor living and recreation areas, parking areas, and entrance drives within the development; and, if located within a commercial development, from all outdoor recreation areas, parking areas, and entrance drives.

Options:

A. Sight-tight fence or wall (height to be determined by size and location of area to be screened); or

B. Evergreen screen (height, spacing, and variety to be determined by size and location of area to be screened); or

C. A combination of the above options

For Transit-Oriented/Activity Center zones when adjacent to and along a street (within the streetscape zone), mechanical equipment including utility transformers that feed the building, shall be:

I. Located within vaults; or, under the sidewalks; or

SECTION 4: LANDSCAPE STANDARDS

II. Within buildings; or,

III. Located within a planted area that does not obstruct pedestrian movement or the required sidewalk width; and screened per options (A) and/or (B) above and in accordance with access, clearance, overhead, and protection requirements as required by the utility company.

6. Vehicle-Related Uses

All uses in the Vehicle Sales and Service use category, notwithstanding any nonconforming status of the property, shall be completely screened from any adjoining existing residential use, land in any residential zone, or land in any other zone proposed to be used for residential purposes on an approved Planned Development basic plan, or any approved detailed or Special Exception site plan.

All vehicles stored at gas stations, repair and maintenance facilities, paint finishing shops, storage yards, and towing and wrecker services, where adjacent to and/or within view of a street, must also be completely screened.

Options:

A. Six (6) foot high, sight-tight fence or wall; or

B. Evergreen screen (height, spacing, and variety to be determined by size and location of area to be screened not allowed in a Transit-Oriented/Activity Center zone); or

C. A combination of the above options.

d. Demonstrating Compliance

The landscape plans shall show the proposed location, type, size, and botanical and common names of all plant materials proposed to be installed in fulfillment of the requirements of this section and shall include construction details of all proposed structural screening elements identifying dimensions and proposed construction materials.

4.5 Stormwater Management Facilities

This section addresses the following important goals:

1. Encourage a more thoughtful approach to stormwater management facilities that provide sustainable, healthy, and environmental benefits.
2. Stormwater management facilities should be designed as an integral part of the overall landscape design approach.

Requirements for the landscaping of stormwater management facilities are generally established by the Department of Permitting, Inspections, and Enforcement (DPIE) or by those municipalities with stormwater management authority. The DPIE requirements may be found in the Storm Drainage and Stormwater Management Design Manual for Prince George's County or any subsequent revision thereof.

DPIE and M-NCPPC shall coordinate review of the design of all landscaping associated with stormwater management facilities prior to the final technical approval of the stormwater management plan by DPIE. Landscape plans for stormwater management facilities shall be reviewed and approved by the appropriate authority concurrently and in association with the regulatory plan review.

Shrubs, perennials, and groundcover planting requirements for stormwater management required by the Maryland Department of the Environment (MDE) may be counted towards any shrubs, perennials, and groundcovers required by this manual.

SECTION 4: LANDSCAPE STANDARDS

Stormwater tree planters adjacent to a curb and which collect run-off from the sidewalk and/or vehicular travelway, including these in the public right-of-way, may be counted towards calculated green areas and planting requirements (per Section 4.8: Building Frontage Landscape Requirements, Section 4.10: Street Trees Along Streets, and Section 4.11: Requirements for Nonresidential Development). Where adjacent to a street, such facilities (stormwater management facilities, micro bioretention, underground vaults, stormwater tree planters, and similar) shall be designed as an integral, contemporary, and urban-like component of the streetscape.

THIS PAGE IS INTENTIONALLY LEFT BLANK

SECTION 4: LANDSCAPE STANDARDS

4.6 Buffering Development from Streets

Buffering development from streets applies only to residential uses in all zones, with limited requirements in Transit-Oriented/Activity Center zones.

a. Purposes and Objectives

1. Provide an attractive view of development from streets and special roadways by buffering those developments with appropriate landscaping.
2. Buffer the rear yard and the lowest story of the rear exterior walls of any single-family detached dwelling from the view of any street, except an alley.
3. Provide a buffer between a multifamily dwelling and a major collector or higher classification roadway in order to reduce the adverse impacts to the multifamily development.
4. Preserve, maintain, and enhance the scenic and/or historic landscape qualities - including farmland, natural meadows, forest land, and historic site settings - within the viewshed adjacent to special roadways.

b. Design Guidelines

1. Trees and shrubs planted in the buffer should exhibit substantial variety in species and visual characteristics, include native species, and be designed to create varied and attractive views on a year-round basis.
2. Long stretches of a single fence or wall design should not be continued to the point of visual monotony but should be varied by using changes in height, species, different material combinations, offset angles, or other types of articulation so that the visual characteristics of the landscaping are provided on a year-round basis.
3. Plans submitted for review should show the general location and type of major landscape elements of an existing or proposed buffer on adjacent properties and should demonstrate that the proposed buffer treatment will provide an attractive visual continuity with existing or proposed buffer treatments on adjacent properties.
4. When buffering development from historic roadways, the plant materials selected should be noninvasive, appropriate species. Tree and vegetation removal should be minimized, and existing vegetation preserved to the maximum extent practicable.

5. Natural landscape features, particularly existing native plant materials and tree cover, should be preserved and enhanced whenever possible.
6. If a bufferyard is not currently vegetated, it should be planted with vegetation that mimics the landscape conditions on nearby properties. However, in no case should proposed plantings be an invasive species.
7. Utilities, stormwater management facilities, lighting fixtures (except as necessary for safety and roadway illumination), fences, walls, and other man-made structures should be placed and designed to minimize visual impact along special roadways.

c. Requirements

1. When existing noninvasive trees are located within the buffer area, preservation of those trees is generally preferred to the planting of new trees. When existing vegetation is located in only part of the buffer, the number of shade trees, evergreen trees, and shrubs required to be planted may be reduced in proportion to the number of trees within the buffer that are 3" caliper dbh or greater. Any invasive species should be removed from the buffer area.

2. Buffering Residential Development from Streets

   A. When the rear yards of single-family attached and detached dwellings are oriented toward a street, a buffer area shall be provided between the development and the street as part of the common open space owned and maintained by a homeowners association. All plant material required for this buffer should be located outside of public utility easements adjacent to the right-of-way. The width of the buffer and the plant materials required to be planted within the buffer shall be based on road classifications as identified in the Approved Countywide Master Plan of Transportation as follows:

      I. Primary or Lower Road Classifications (excluding alleys)

      A minimum of a twenty (20) foot wide buffer with the following plant material per one hundred (100) linear feet of property line adjacent to the street):

      Two (2) shade trees

      Eight (8) evergreen trees

      Twelve (12) shrubs

SECTION 4: LANDSCAPE STANDARDS

II. Collector Road

A minimum of a thirty-five (35) foot wide buffer with the following plant materials per one hundred (100) linear feet of property line adjacent to the street:

Four (4) shade trees

Twelve (12) evergreen trees

Twenty (20) shrubs

III. Major Collector or Arterial Road

A minimum fifty (50) foot wide buffer with the following plant materials per one hundred (100) linear feet of property line adjacent to the street:

Six (6) shade trees

Sixteen (16) evergreen trees

Thirty (30) shrubs

IV. Freeway or Expressway: A minimum seventy-five (75) foot wide buffer with the following plant materials per one hundred (100) linear feet of property line adjacent to the street:

Eight (8) shade trees

Twenty (20) evergreen trees

Forty (40) shrubs

For (I) – (IV) above: up to one-quarter (1/4) of the number of required shade trees may be satisfied on a two-to-one (2:1) basis by the use of ornamental trees and evergreen trees.

B. When any yard of a multifamily development in any zone is oriented toward a major collector, an arterial, a freeway, or an expressway, a buffer shall be provided between the development and the street, as part of the common open space, except when the facade of a multifamily building has a clearly articulated front door and lobby that faces a major collector or arterial, and is within thirty (30) feet of the back of the curb of the street (in this case, the area between the building and street shall comply with the landscape requirements of Section 4.8, Building Frontage). All plant

material required for the buffer shall be located outside of public utility easements adjacent to the right-of-way. The width of the buffer and the plant materials required to be planted within the buffer shall be based on road classifications as follows:

I. Rural and Agricultural, Nonresidential, and Residential zones only: Major Collector or Arterial Road:

   A minimum fifty (50) foot wide buffer with the following plant materials per one hundred (100) linear feet of property line adjacent to the street:

   Six (6) shade trees

   Sixteen (16) evergreen trees

   Thirty (30) shrubs

II. All zones: Freeway or Expressway

   i. Rural and Agricultural, Nonresidential, and Residential zones: A minimum of a seventy-five (75) foot wide buffer with the following plant materials per one hundred (100) linear feet of property line adjacent to the street:

      Eight (8) shade trees

      Twenty (20) evergreen trees

      Forty (40) shrubs

   ii. Transit-Oriented/Activity Center zones: A minimum of a forty (40) foot wide buffer with the following plant materials per two hundred (200) linear feet of property line adjacent to the street.

      Five (5) shade trees

      Twenty (20) evergreen trees

      Sixty (60) shrubs

   For (i) – (ii) above: up to one-quarter (1/4) of the number of required shade trees may be satisfied on a two-to-one (2:1) basis by the use of ornamental trees and evergreen trees.

SECTION 4: LANDSCAPE STANDARDS

C. Fences, walls, or berms may also be employed on the inner edge of the buffer to screen the views of rear yards. Use of a six (6) foot high decorative, opaque fence or wall reduces the requirement for plant materials by fifty percent (50%).

3. Buffering Development from Special Roadways

A. When a property supporting any use has frontage on a special roadway, except residential development as described in Section 4.6(c)(1) and uses in Agricultural/Forestry Uses, Agricultural/Forestry-Related Uses, and Open Space Uses categories, a buffer area shall be provided adjacent to the entire right-of-way, excluding driveway openings. All plant material required by this section shall be located outside of public utility easements adjacent to the right-of-way. The width of the buffer area and the plant material required to be planted within the buffer area shall be as follows:

I. Nonresidential, Residential, and Transit-Oriented/Activity Center zones, inside the Capital Beltway (inclusive of the corporate boundaries of the City of Greenbelt, City of Glenarden, and the Town of Forest Heights) - Designated historic roads, designated scenic roads, any Maryland State-designated scenic by-way, and the Suitland and Baltimore-Washington Parkways:

A minimum ten (10) foot wide buffer with one (1) shade tree and ten (10) shrubs per thirty-five (35) linear feet of frontage, excluding driveway openings.

II. Non-Residential and Residential zones outside the Capital Beltway - Designated historic roads, designated scenic roads, any Maryland State-designated scenic by-way, and the Suitland and Baltimore-Washington Parkways.

A minimum forty (40) foot wide buffer to be planted with a minimum of eighty (80) plant units per one hundred (100) linear feet of frontage, excluding driveways. One hundred (100) percent of the plant units provided within the buffer shall be native species that shall be randomly spaced to mimic local forest communities.

III. All Rural and Agricultural Zones - Designated historic roads, designated scenic roads, any Maryland State-

designated scenic byway, and the Suitland and Baltimore-Washington Parkways:

A minimum seventy five (75) foot wide buffer shall be planted with a minimum of eighty (80) plant units per one hundred (100) linear feet of frontage. One hundred (100) percent of the plant units provided within the buffer shall be native species that shall be randomly spaced to mimic local forest communities.

B. When existing non-invasive trees are located within the buffer, preservation of the trees is generally preferred to the planting of new trees. When existing vegetation is located in only part of the buffer, the number of shade trees, evergreen trees, and shrubs required to be planted may be reduced in proportion to the number of trees within the buffer that are 3" caliper dbh or greater. Any invasive species should be removed from the buffer area.

C. The buffering and planting requirements of Section 4.6(c)(3)(A)(III) may be reduced if viewshed studies indicate, at the time of a detailed site plan or Special Exception plan (or if neither of these are required, this review may occur through an application for alternative compliance), that the alternative landscape design will conserve and enhance the special roadway with regard to the natural and/or cultural features of the surrounding area.

d. Demonstrating Compliance

In addition, the landscape plan shall include a schedule as provided below demonstrating compliance with the requirements of this section.

SECTION 4: LANDSCAPE STANDARDS

SAMPLE SCHEDULE 4.6-1 BUFFERING RESIDENTIAL DEVELOPMENT FROM STREETS		
Name of Street Adjacent to Rear Yard		
Type of street Adjacent to Rear Yard		
Linear feet of street frontage toward which required rear yard is oriented, not including driveway openings	*Feet*	
Percentage of required buffer strip occupied by existing trees:	*%*	
Invasive species in the buffer area?	☐ *Yes*	☐ *No*
Six (6) foot high fence or wall included in bufferyard?	☐ *Yes*	☐ *No*
	REQUIRED	PROVIDED
Minimum Width of Buffer		
Shade Trees		
Evergreen Trees		
Ornamental Trees		
Existing Shade Trees*		
**Min 2.5 inches dbh*		

SAMPLE SCHEDULE 4.6-2 BUFFERING DEVELOPMENT FROM SPECIAL ROADWAYS			
Name of Special Roadway			
Type of Special Roadway			
Linear Feet of Frontage (not including driveways)			*Feet*
	☐ *Nonresidential or Residential Areas inside the Capital Beltway and all Transit-Oriented / Activity zones*	☐ *Nonresidential and Residential outside of Capital Beltway*	☐ *Rural and Agricultural Zones*
	REQUIRED		PROVIDED
Minimum Width of Buffer			
Planting Units			
Shade trees			
Ornamental trees			
Evergreen Trees			
Shrubs			
Existing shade trees*			
Invasive species in the buffer area?	☐ *Yes*	☐ *No*	
** Min 2.5 inches dbh*			

SECTION 4: LANDSCAPE STANDARDS

THIS PAGE IS INTENTIONALLY LEFT BLANK

4.7 Buffering Incompatible Uses

Buffering of incompatible uses applies to all proposed uses in all zones, with some exceptions in the Transit-Oriented/Activity Center zones as noted.

a. Objectives

1. Establish a comprehensive, consistent, and flexible buffering system consisting of a specified area of land and vertical elements, such as plant materials, walls, fences, and berms, between adjacent incompatible land uses.
2. Form a visual and physical separation between uses of a significantly different scale, character, and/or intensity of development to mitigate undesirable impacts, such as noise, smell, storage facilities, dust, fumes, vibration, litter, vehicle exhaust, and lighting.
3. Create a transition between moderately incompatible uses.

b. Design Guidelines

1. Any combination of shade trees, ornamental trees, evergreen trees, and shrubs, may be used to achieve the desired buffering effect, as long as the proposed combination of plants yields a total number of plant units equal to or greater than the requirement.
2. Buffering elements, such as walls, fences, and berms, should be carefully designed not to unnecessarily obstruct views, restrict light and air, or create hazardous blind spots (see Section 3.5(f), Crime Prevention Through Environmental Design).
3. When buffering historic sites from incompatible uses, historically appropriate, noninvasive species should be used to preserve the context of the historic site.
4. Consideration should be given to topography, the extent of the environmental setting, and the preservation of vistas whenever possible. When designing buffer yards, equal consideration should be given to preserving and enhancing the views of and the views from historic sites.
5. Trees and shrubs planted in the buffer should exhibit substantial variety in species and visual characteristics, include native species, and be designed to create varied and attractive views.
6. Plans submitted for review shall show the general location and type of major landscape elements of an existing or proposed buffer on adjacent properties and shall demonstrate that the proposed buffer

treatment will provide an attractive visual continuity with existing or proposed buffer treatments on adjacent properties.

7. Natural landscape features, particularly existing native plant materials and tree cover, should be preserved and enhanced whenever possible.

c. Requirements

The bufferyard is inclusive of the building setback as required in the Zoning Ordinance and not in addition to the setback. If the bufferyard is greater than the required building setback, the bufferyard supersedes the building setback requirement, and any building or structure shall be set beyond the bufferyard.

Within a Transit-Oriented/Activity Center zone, bufferyards shall only be required:

I. Within the edge areas, and only where a type C or greater bufferyard is required: in these instances the bufferyard width and planting requirements may be reduced by up to fifty (50) percent. If the landscape yard requirement allows for a fifty (50) percent reduction if a six (6) foot high opaque fence is provided, the fifty (50) percent bufferyard reduction allowed in the edge areas for a type C or greater bufferyard is in addition to that allowance, but shall never be less than 10 feet.

II. No other bufferyard between separate uses or structures within a Transit-Oriented/Activity Center zone shall be required.

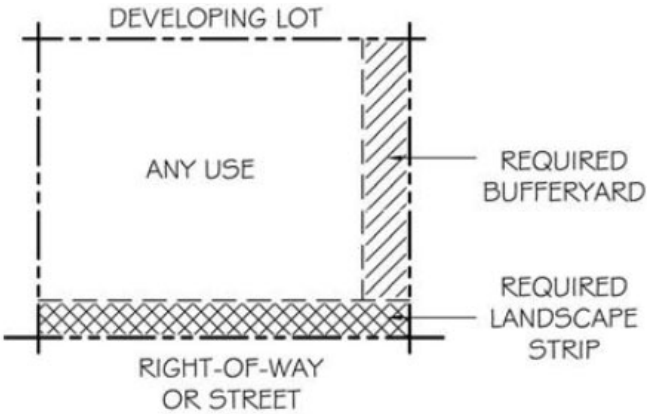
If the abutting property is not a Historic Site (see Section 4.7(c)(8)), the following methodology shall be used to determine the required bufferyard width and quantity of plant materials between two adjacent uses:

1. Locate the proposed development (nonresidential uses only) in Section 4.7, Table 4.7-1. (Note the proposed use)

2. Locate the Existing Use on Abutting Land in Table 4.7-1. Note the Proposed Use and which bufferyard type to apply. If a developing lot adjoins a vacant lot, see Section 4.7(c)(5). If a developing lot adjoins nonconforming uses, see Section 4.7(c)(6). If a developing lot adjoins a historic site, see Section 4.7(c)(8).

   A. A required bufferyard shall not overlap a required landscape strip along a street (See Figure 4.7-1).

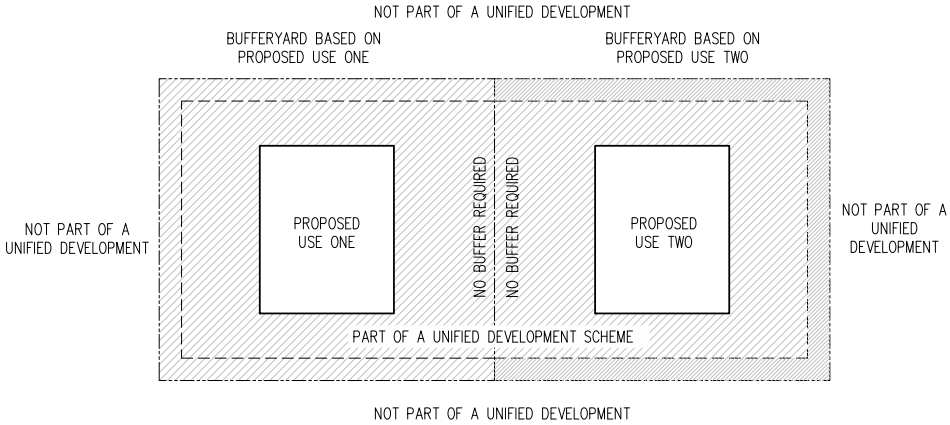
FIGURE 4.7-1: REQUIRED BUFFERYARD



In the case of a lot that is located in more than one zone, the establishment of a required bufferyard is based on the platted or recorded property line(s), not the zoning line(s).

B. For applications proposing horizontally arranged mixed-use under a unified development scheme, on a single lot or multiple lots, the use nearest a property line shall determine the buffering requirements between that yard (See Figure 4.7-2) and an abutting property not part of the unified plan for development.

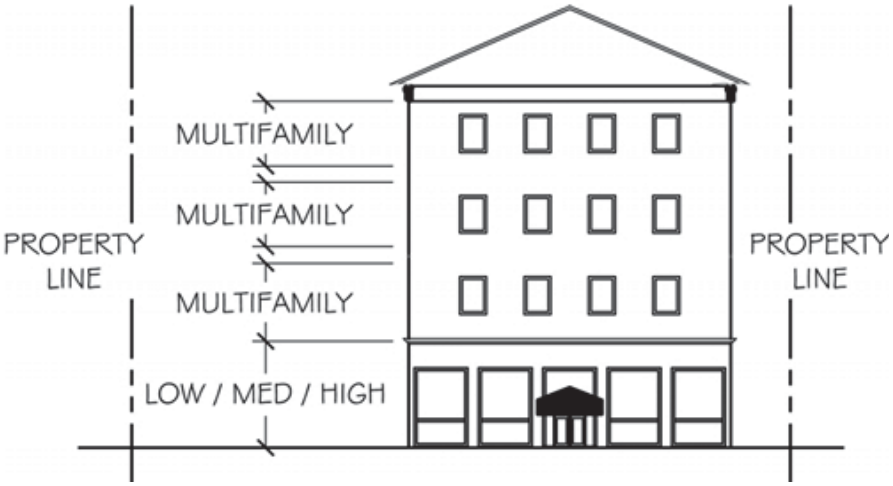
FIGURE 4.7-2 USE DETERMINATION FOR HORIZONTALLY ARRANGED MIXED-USE DEVELOPMENT



SECTION 4: LANDSCAPE STANDARDS

C. For applications proposing vertically arranged mixed-use development on a single lot or multiple lots, the proposed use for the property shall be based on the predominant use of the property. The predominant use is determined by the gross floor area associated with each use (See Figure 4.7-3).

FIGURE 4.7-3 USE DETERMINATION FOR VERTICALLY ARRANGED MIXED-USE DEVELOPMENT



D. For applications including buildings over fifty (50) feet in height, the bufferyard (setback and landscaped yard) shall be increased by one-third (1/3) of the additional building height when adjoining properties contain single-family detached dwellings.

E. Buffers between incompatible uses are not required within the development area of mixed-use projects.

F. Any development proposing to locate a bufferyard pursuant to the requirements of this Section on an abutting property shall record a perpetual easement in the Land Records of Prince George's County to ensure the retention of the provided landscaping.

3. When a specific use is not identified in Table 4.7-1, the most similar use shall be used. Interpretations relating to incompatible uses shall be made by the Planning Director, whose decision shall be appealable to the Planning Board.

A. The following factors shall be considered by the Planning Director in making an interpretation relating to use categories

   I. Noise.

   II. Outdoor loading spaces and/or dumpsters, other trash collection facilities, or recycling facilities.

   III. Type of trash generated on the site, e.g., food or animal by-product disposal.

   IV. Exterior storage.

   V. Dust, noxious fumes, vehicle exhaust, and vibration.

   VI. Litter.

   VII. Lighting during the evening or at night (10:00 p.m. – 6:00 a.m.).

   VIII. Use of the property during the evening or at night (10:00 p.m. – 6:00 a.m.).

   IX. Generation of more than three hundred (300) daily vehicle trips.

4. Consult Table 4.7-1, Minimum Bufferyard Requirements. Locate the use categories for the proposed use and the adjoining use along the appropriate axis. Read down and over to determine the required bufferyard type.

SECTION 4: LANDSCAPE STANDARDS

TABLE 4.7-1 MINIMUM BUFFERYARD REQUIREMENTS

TABLE 4.7-1: BUFFERYARD TYPE TO APPLY
A=Type A Bufferyard B= Type B Bufferyard C= Type C Bufferyard
D= Type D Bufferyard E= Type E Bufferyard N/A= Not Applicable

EXISTING USE ON ABUTTING LAND	ZONE OF ADJACENT VACANT LAND	PROPOSED USES						
		Single-family detached; Two-family; Manufactured home; and Agricultural/Forestry uses; and Open space uses	Townhouse; Three-family; Manufactured Home Park; and Agricultural/Forestry-Related uses	Multifamily; Live/work; and Group Living uses;	Civic, Public, and Institutional uses (except Transportation uses; Educational uses; Hospital; and Major utility facility)	Commercial uses; Mixed-use development; Parking facility; Educational uses; and Hospital; Major utility facility	Industrial uses (except Extraction uses; Slaughterhouses; Tank farms; Concrete batching or asphalt mixing plant; Concrete or brick manufacturing; Heavy manufacturing, assembly or fabrication; Concrete recycling facility; and Landfills)	Extraction uses, Slaughterhouses; Tank farms; Concrete batching or asphalt mixing plant; Concrete or brick manufacturing; Heavy manufacturing, assembly or fabrication; Concrete recycling facility; and Landfills
Single-family detached; Two-family; Manufactured home; and Agricultural/Forestry uses; and Open Space uses	PL, AL, AR, RE, RR, SFR-4.6, SFR-6.7, SFR-A	N/A	A	B	B	C	D	E
Townhouse; Three-family; Manufactured Home Park; and Agricultural/Forestry-Related uses		A	N/A	A	A	B	D	E
Multifamily; Live/work; and Group Living uses	MFR-12, MFR-20, MFR-48	B	A	N/A	A	B	D	E
Civic, Public, and Institutional uses (except Transportation uses; Educational uses; Hospital; and Major utility facility)	NC	B	B	A	N/A	A	C	D
Commercial uses; Mixed-use development; **Parking facility; Educational uses; and Hospital; Major Utility Facility**	SC, GCO, IE	C	C	B	B	N/A	C	D
Industrial uses (except Extraction uses; Slaughterhouses; Tank farms; Concrete batching or asphalt mixing plant; Concrete or brick manufacturing; Heavy manufacturing, assembly or fabrication; Concrete recycling facility; and Landfills)	HI	D	D	D	D	C	N/A	B
Extraction uses, Slaughterhouses; Tank farms; Concrete batching or asphalt mixing plant; Concrete or brick manufacturing; Heavy manufacturing, assembly or fabrication; Concrete recycling facility; and Landfills		E	E	E	E	D	B	N/A

1. Letters in cell correspond to the Bufferyard Types required in Table 4.7-1: Bufferyard Types
2. Development in the PD zones only applies these standards on the perimeter of the PD zone, adjacent to vacant land or development outside the PD zone. .
3. Development in the TOD/Activity Center zones only apply these standards on the perimeter of the zone, adjacent to vacant land or development outside the TOD/Activity Center zone.
4. Multifamiy, townhouse, mixed use, shopping center, and multi-building development shall provide buffers around the perimeter of the development, instead of around individual buidings.
5. A mobile home park shall provide the buffer around the perimeter of the park.

5. Consult Table 4.7-2, Bufferyard Types, to determine the minimum landscaped yard and plant requirements for each bufferyard type.

TABLE 4.7-2 BUFFERYARD TYPES

TYPE	MINIMUM LANDSCAPED YARD WIDTH	NUMBER OF PLANT UNITS [REQUIRED PER LINEAR FEET OF PROPERTY LINE]
A	10 feet	40
B.	20 feet	80
C	30 feet	120
D	40 feet	160
E	50 feet	180

In order to use and understand Table 4.7-2, Bufferyard Types, the following notes apply:

A. Surface parking, loading facilities, trash collection, recycling facilities, and mechanical equipment may not be located in the minimum landscaped yard.

B. Number of Plants Required

Any combination of shade trees, ornamental trees, evergreen trees, and shrubs may be used to achieve the desired buffering effect, as long as the proposed combination of plants yields a total number of plant units equal to or greater than the requirement.

SECTION 4: LANDSCAPE STANDARDS

Plant unit equivalencies are as follows:

PLANTING UNIT EQUIVALENCIES	
One (1) Shade Tree	Ten (10) plant units
One (1) Evergreen Tree	Five (5) plant units
One (1) Ornamental	Five (5) plant units
One (1) Shrub	One (1) plant unit

Plants may be located anywhere within the bufferyard.

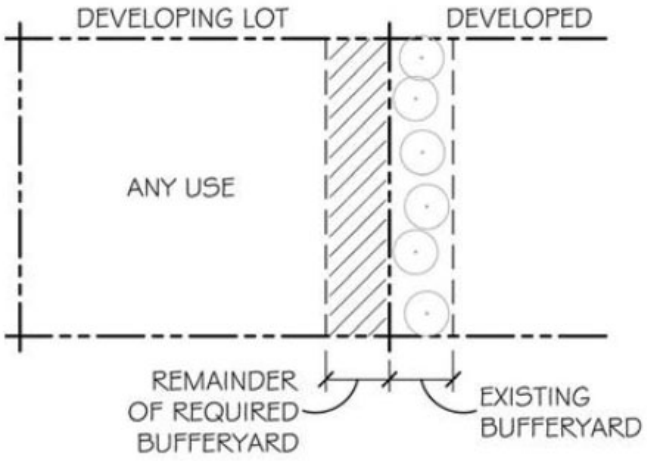
C. When existing noninvasive trees are located within the entire minimum landscaped yard, preservation of those trees will be allowed to substitute for the required plant materials. When existing trees are located in only part of the minimum landscaped yard, the number of plant units required may be reduced in proportion to the number of trees within the bufferyard that are of 3" caliper dbh or greater.

   Seventy percent (70%) or more of the critical root zone of all trees proposed to be preserved shall remain undisturbed.

D. For properties located in Nonresidential and Residential zones, except for those adjoining existing residentially developed lots, the requirements may be reduced up to fifty percent (50%) (including the number of plant units, setback, and landscape yard), if a six (6) foot high, opaque fence or wall is located within the bufferyard. The wall or fence must provide the maximum concealment.

E. Where a bufferyard is to be provided where all or a portion of the required bufferyard is located on the adjacent property, only the remainder of the required bufferyard shall be provided. See figure 4.7-4.

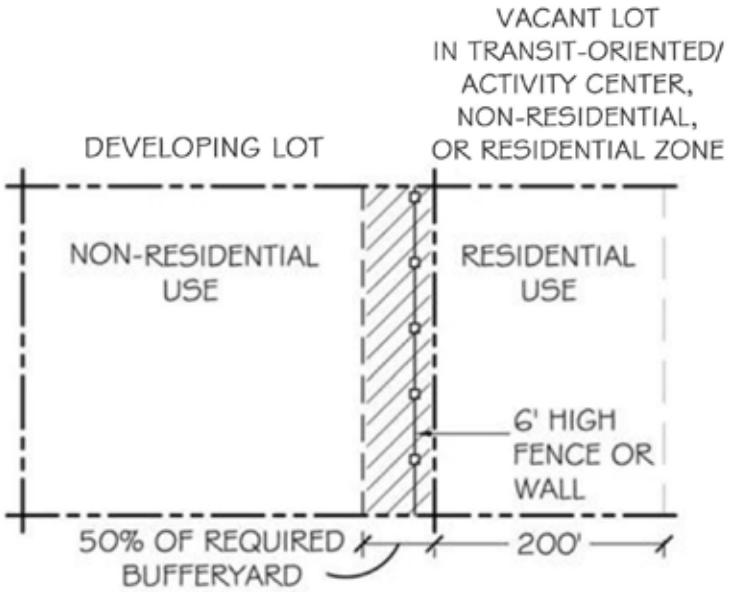
FIGURE 4.7-4: REQUIRED BUFFERYARD ADJACENT TO EXISTING BUFFERYARD



6. Developing Lots Adjacent to Vacant Lots
   A. A lot is considered vacant if it contains no structure or vehicular surface area within two hundred (200) feet of the property line.
   B. If a developing property with a nonresidential use is adjacent to a vacant property zoned for a residential use then one hundred percent (100%) of the bufferyard is required to be provided on the developing lot. If the adjacent vacant property is classified in a Transit-Oriented/Activity Center, Nonresidential, or Residential zone, the landscape yard requirements may be reduced by fifty percent (50%) on the developing lot if a six (6) foot high, opaque fence or wall is provided on the developing lot (See Figure 4.7-5).

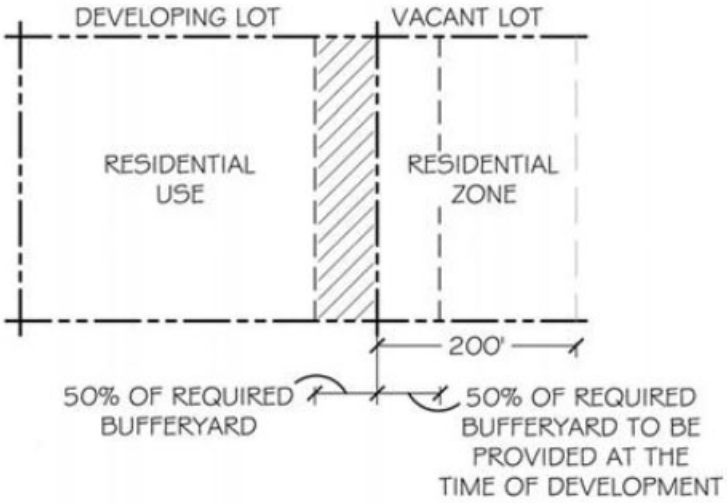
SECTION 4: LANDSCAPE STANDARDS

FIGURE 4.7-5: DEVELOPING NON-RESIDENTIAL USE ADJACENT TO VACANT RESIDENTIALLY-ZONED PROPERTY



C. If a developing property with a residential use is adjoining vacant property zoned residential, fifty percent (50%) of the total bufferyard is required to be provided on the developing lot. The remaining fifty percent (50%) shall be provided by the vacant lot when it is developed. (See Figure 4.7-6).

FIGURE 4.7-6: DEVELOPING RESIDENTIAL USE ADJACENT TO VACANT RESIDENTIALLY-ZONED PROPERTY



D. If a developing property with a residential use is located adjacent to a vacant lot zoned for a commercial or industrial use, the developing property is not required to provide a bufferyard.

E. If a developing property with a non-residential use is located adjacent to a vacant property in a Nonresidential Zone, fifty percent (50%) of the bufferyard is required to be provided on the developing lot.

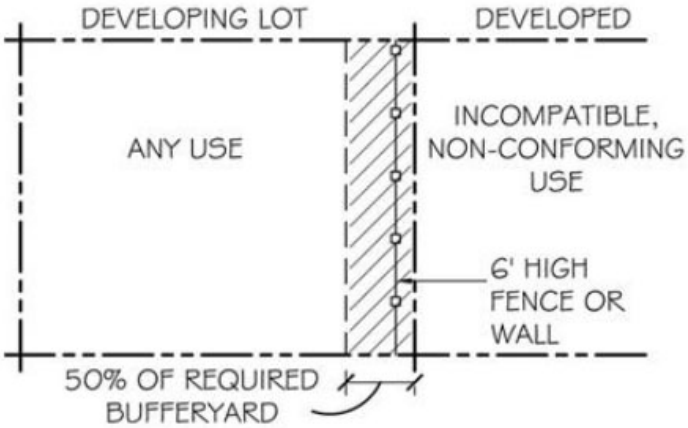
F. If a developing property is located in a Nonresidential Zone and is adjoining vacant property located in a Nonresidential Zone, the developing property is not required to provide a bufferyard.

7. Developing Lots Adjacent to Nonconforming Uses

A. If a developing property is adjacent to an incompatible, non-conforming use, the bufferyard requirement may be reduced by fifty percent (50%) if a six (6) foot high, opaque fence or wall is provided on the developing lot. The developing lot is exempt from this requirement if both the developing lot and the adjoining nonconforming uses are in a Transit-Oriented/ Activity Center zone.(See Figure 4.7-7).

B. If the developing lot is in a TOD zone, and the nonconforming use is not, the buffer (type C or greater only) only applies in the Edge and is also reduced by 50% (see Section 4.7(c)(ll)).

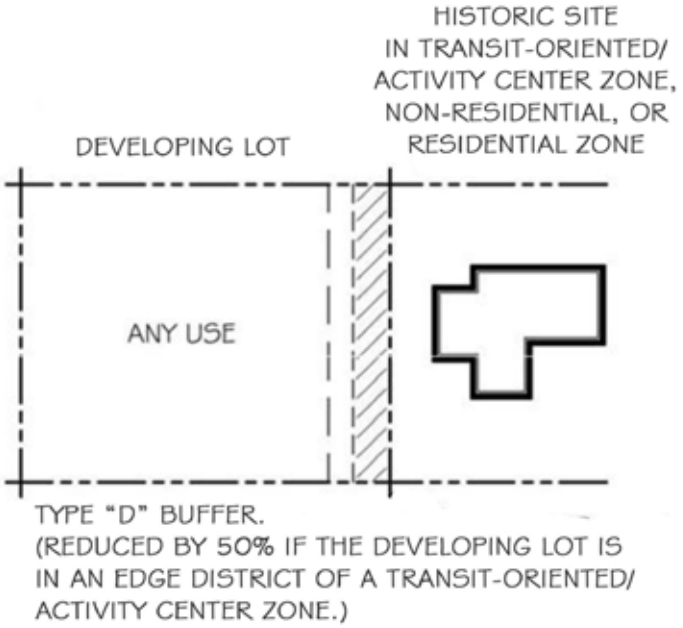
FIGURE 4.7-7: DEVELOPING PROPERTY ADJACENT TO INCOMPATIBLE, NONCONFORMING USES



SECTION 4: LANDSCAPE STANDARDS

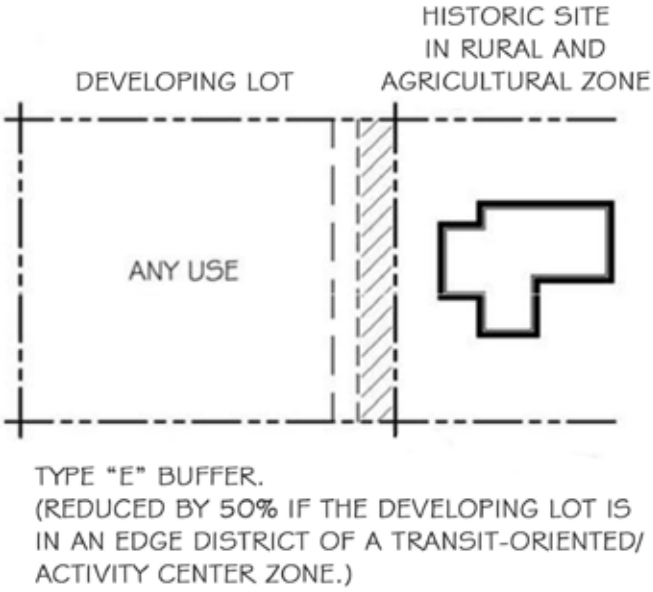
8. Developing Lots Adjacent to Historic Sites
   A. If a developing lot adjoins a designated historic site (except underground archeological sites) located within a Transit-Oriented/Activity Center, Nonresidential, or Residential zone, the developing lot shall provide a Type "D" buffer along the entire shared property line (see Table 4.7-2, Bufferyard Types and Figure 4.7-8). This requirement does not apply to a property line or right-of-way line adjacent to a special roadway (see Section 4.6(c)(2) Buffering Development from Special Roadways). The developing lot is exempt from this requirement if both the developing lot and the adjoining historic lot are in a Transit-Oriented/Activity Center zone.

FIGURE 4.7-8: DEVELOPING PROPERTY ADJACENT TO HISTORIC SITE WITHIN TRANSIT-ORIENTED/ACTIVITY CENTER, NONRESIDENTIAL, OR RESIDENTIAL ZONE



B. If a developing lot adjoins a designated historic site (except underground archeological sites) located within the Rural and Agricultural Zones, the developing lot shall provide a Type "E" buffer along the entire shared property line (see Table 4.7-2, Bufferyard Types and Figure 4.7-9). This requirement does not apply to a property line or right-of-way line adjacent to a special roadway (see Section 4.6(c)(2), Buffering Development from Special Roadways).

FIGURE 4.7-9: DEVELOPING PROPERTY ADJACENT TO HISTORIC SITE WITHIN RURAL AND AGRICULTURAL ZONE



d. Demonstrating Compliance

The landscape plan shall include a schedule as follows demonstrating compliance with the requirements of this section.

SECTION 4: LANDSCAPE STANDARDS

SAMPLE SCHEDULE 4.7-1 BUFFERING INCOMPATIBLE USES REQUIREMENTS	
1.) Use of proposed development:	
2.) Use of abutting development:	
3.) Minimum required bufferyard (A, B, C, D, or E):	A _____ B _____ C _____ D _____ E _____
4.) Minimum required building setback:	_____ FT.
5.) Building setback provided:	_____ FT.
6.) Minimum required width of landscape yard:	_____ FT.
7.) Width of landscape yard provided:	_____ FT.

PLANTING UNITS REQUIRED			
Bufferyard Type(s)	Feet	Linear feet of 6' fence or wall, or linear feet on similar adjacent property (if applicable) (Subtract)	Required Planting Units (P.U.'s)
_____	_____ LF.	_____ LF. x 50% = _____ LF.	_____ LF. x _____ = _____ PU
			Total: _____ P.U. Required

PLANTING UNITS PROVIDED										
	Existing Trees		Shade Trees		Ornamental/ Evergreen Trees		Shrubs/ Perennials		Total	
Bufferyard Type(s)	Req.	Prov.	Req.	Prov.	Req.	Prov.	Req.	Prov.	Req.	Prov.
_____										
										Total: _____ P.U. Provided

4.8 Building Frontage Landscape Requirements[1]

This section applies to buildings in the Transit-Oriented/Activity Center, Nonresidential, and Residential zones where a building's primary front facade, front entrance, or any building facade (front, rear, or side) that includes multiple doors and/or windows faces onto, and is within forty (40) feet of:

1. The street curb of a public or private street, or
2. The street curb of a drive aisle or parking lot, or
3. The boundary of a common open space area (such as a park, square, or plaza).

   Refer to Figures 4.8-1, 4.8-2, 4.8-3, 4.8-4, and 4.8-5.

For other conditions where a building is along a street, Section 4.2: Requirements for Landscape Strips Along Streets, shall apply.

The Building Frontage Zone is the area, measured in square feet, determined by multiplying the building, lot, or block frontage width by the dimension as measured from the face of the building to the back of curb of the street or parking lot (or to the boundary of the common area). This dimension may vary along a street or block; the planting requirements may, therefore, also vary. The building frontage zone may overlap the property line or right-of-way. For Transit-Oriented/Activity Center zones, the building frontage zone requirements apply to all streets and all sides of every block.

FOOT NOTE:

1. *The standard proposed here (requiring a pedestrian-friendly zone between the building and façade and the back of curb) will require further coordination with the applicable public agencies (e.g SHA, DPW&T, municipality) as we move forward in the drafting, public comment, and revisions stages. The intent and desire is to require a high quality landscape and pedestrian-friendly streetscape between the building façade and the curb of a street, drive aisle, parking lot, or open space (square, plaza, park for instance). In the case of a public street with a public right-of-way, where the landscape manual may be superseded by other requirements or constraints and where coordination with the updates to this manual is ongoing, the requirements may be limited to the area between the building facade and the right-of-way. Consequently, the standard proposed here is subject to future modification based upon public agency (as well as public) input. (for instance, plantings and street trees in the right-of-way may be counted towards these requirements, but not required; or, there may need to be unique requirements to address a public right-of-way condition). An appropriate approach will be determined based upon public agency and public input.*

SECTION 4: LANDSCAPE STANDARDS

FIGURE 4.8-1: BUILDING FRONTAGE ZONE (PRIVATE STREET)

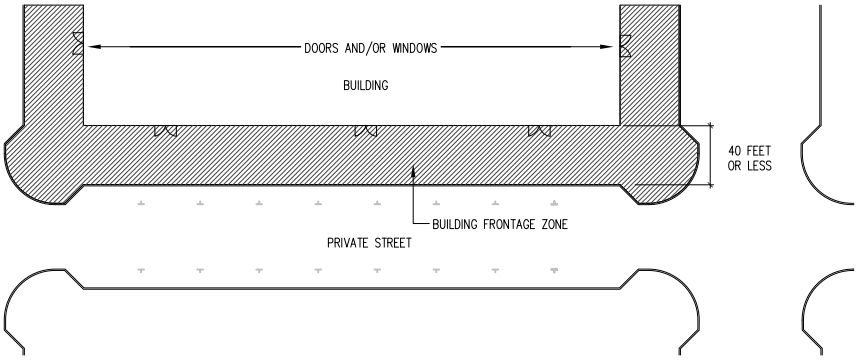


FIGURE 4.8-2: BUILDING FRONTAGE ZONE (PUBLIC STREET)

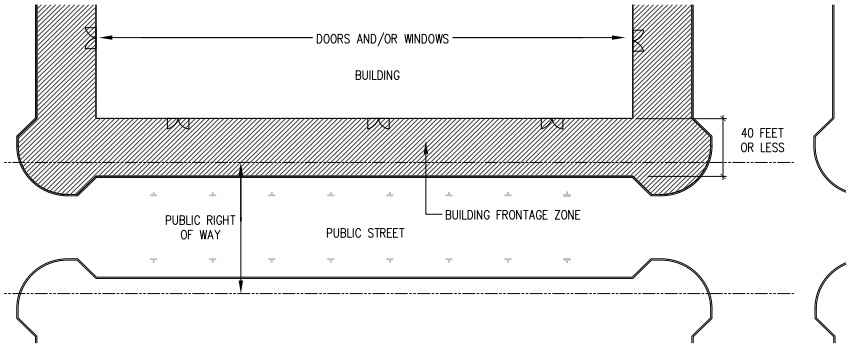


FIGURE 4.8-3: PARKING LOT WITHIN BUILDING FRONTAGE ZONE

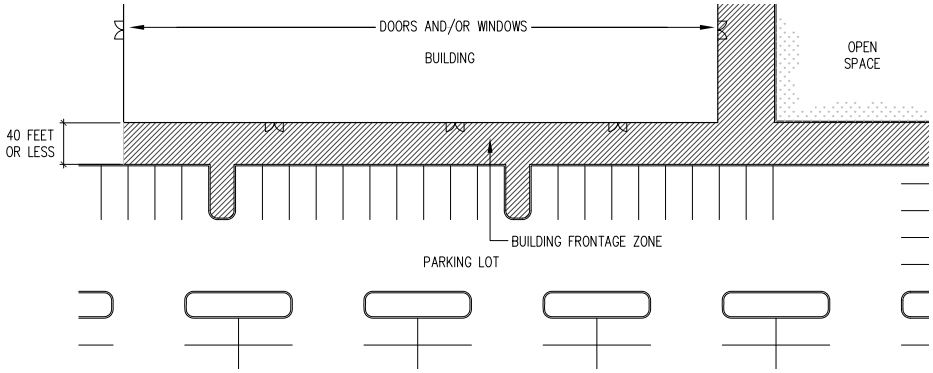


FIGURE 4.8-4: DRIVE AISLE WITHIN BUILDING FRONTAGE ZONE

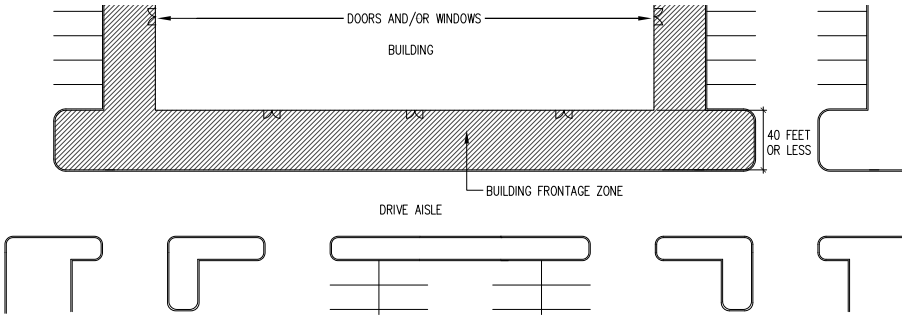
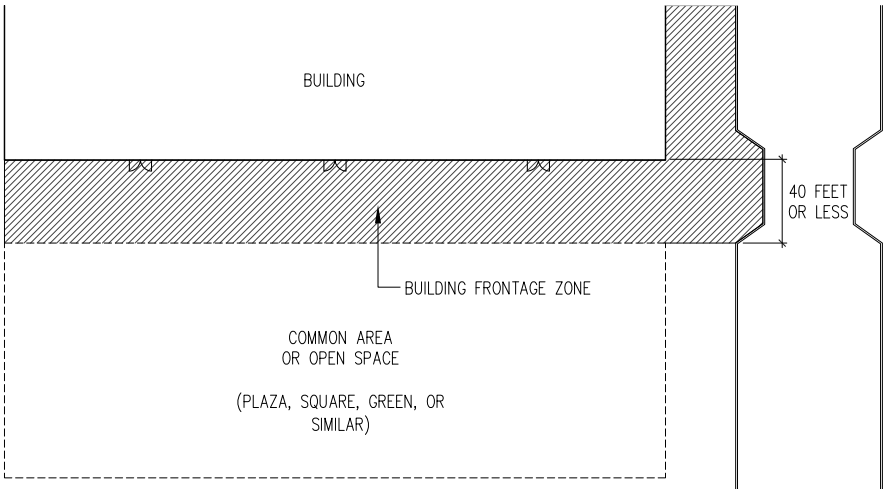


FIGURE 4.8-5: OPEN SPACE WITHIN BUILDING FRONTAGE ZONE

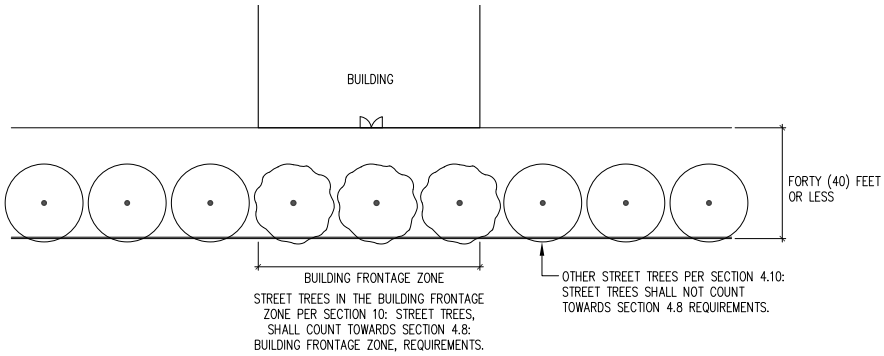


SECTION 4: LANDSCAPE STANDARDS

All Building Frontage zones for multifamily, nonresidential, and mixed-use buildings within the Transit-Oriented/Activity Center, Nonresidential, and Residential zones, that are oriented to a street, drive aisles, Common Open Space, or parking lot should provide a pedestrian-friendly area between the building facade and back of curb . Streets trees, shade trees, plantings, sidewalk, and any other amenities needed per the building usage should be accommodated within this pedestrian-friendly area.

Street trees required per Section 4.10 may count towards the building frontage landscaping requirements for the portion of the building frontage that is adjacent to and within 40 feet of the back of curb of the street (see figure 4.8-6)

FIGURE 4.8-6: STREET TREES WITHIN BUILDING FRONTAGE ZONE



a. Purposes and Objectives

1. Ensure that building frontages along streets, drive aisles, open spaces, and parking lots are planted in a manner that will enhance the streetscape both visually and environmentally.
2. Define the building frontages as a unified space that connects spaces and uses through materials, street furniture, streets trees, and understory plantings.
3. Establish human- scale, and promote pedestrian activity by fostering a safe, pedestrian-friendly building frontage along all streets, open spaces, and parking lots.

b. Design Guidelines

1. Trees adjacent to the building frontage should be selected from native varieties that require little maintenance and tolerate salt and soil compaction.
2. Plant material selections should be part of an overall building frontage plan designed to provide both canopy and shade and to give special character and coherence to each frontage.
3. The desired aesthetic effect should be achieved through the use of native and/or proven hardy adapted species.
4. Plantings should shape the building frontage space, increasing pedestrian comfort and adding value to the community.
5. Plantings should be selected with regard to the level of activity anticipated along the frontage. For instance, in commercial and highly active and trafficked pedestrian zones, plants should be selected for hardiness, safety (avoid thorns and plants that attract bees and insects), and visibility (respect CPTED principles and enable views through to retail, storefronts and lobbies).
6. Tree species that form a ceiling-like enclosure of the streetscape and open a clear view of the street space at eye-level should be utilized.
7. Planting material should be consistent within the building frontage to provide a distinct form and character along streets. Plans should provide species diversity corresponding to the building character and vary per the building or open space usage. For instance, plantings within commercial and highly active and trafficked pedestrian zones should be simple, accentuate accessibility to and visibility of retail, building entrances and lobbies, and storefronts, provide shade, and should not crowd the sidewalk. Plantings within residential and passive zones may be more diverse, should create an attractive, green, and lush setting for the building, and should define safe, comfortable and directional movement of pedestrians.

c. Requirements

1. Nonresidential and Mixed-uses in Transit-Oriented/Activity Center, Nonresidential, and Residential Zones
   A. Building Frontage Requirements:

SECTION 4: LANDSCAPE STANDARDS

I. Less than Twenty Five (25) Feet: Building frontage areas zones less than twenty-five (25) feet in depth (from the back of curb to the building face) shall provide a minimum of eight (8) percent planted areas, including tree planters. (see figure 4.8-7)

II. Twenty Five (25) Feet or Greater: Building frontage zones that are twenty-five (25) feet or greater in depth (face of building to back of curb) shall provide a minimum of twenty (20) percent planted areas, including tree planters. (see figure 4.8-8)

B. Shade trees shall be planted along each nonresidential Building Frontage Zone, within ten (10) feet of the face of back of curb, or along the boundary of any Common Open Space at an average spacing of not less than twenty-five (25) feet on center nor greater than fifty (50) feet on center, excluding driveway openings. Spacing allowances may be made, where necessary, to accommodate curb cuts, fire hydrants, and other infrastructure elements.

C. Nonresidential frontages shall provide one (1) shade tree for every forty (40) linear feet of building frontage.

FIGURE 4.8-7: PLANTED AREAS WITHIN BUILDING FRONTAGE ZONE (LESS THAN 25 FEET IN DEPTH)- NON-RESIDENTIAL

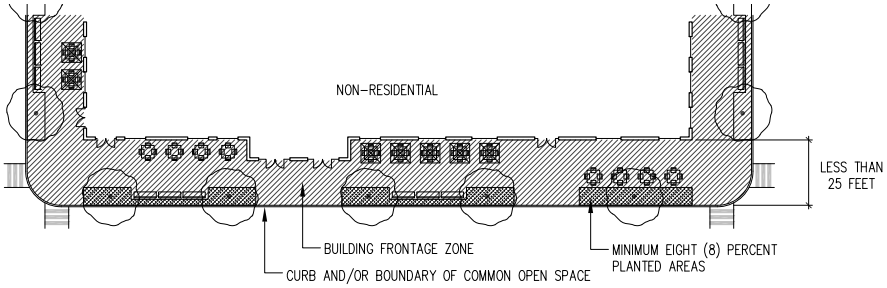
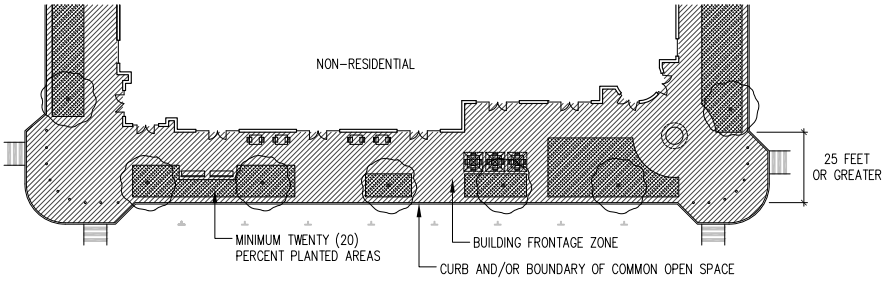


FIGURE 4.8-8: PLANTED AREAS WITHIN BUILDING FRONTAGE ZONE (25 FEET OR GREATER IN DEPTH)- NON-RESIDENTIAL



D. A minimum of one half (1/2) of the surface area of each provided tree planter shall be planted with shrubs and/or perennials. The remainder of the surface area must be groundcover. Tree grates and pervious materials (such as hand-laid granite cobbles) are only permitted in the Transit-Oriented/Activity Center zones and within the Building Frontage Zones in Transit-Oriented/Activity Center, Nonresidential, and residential zones.

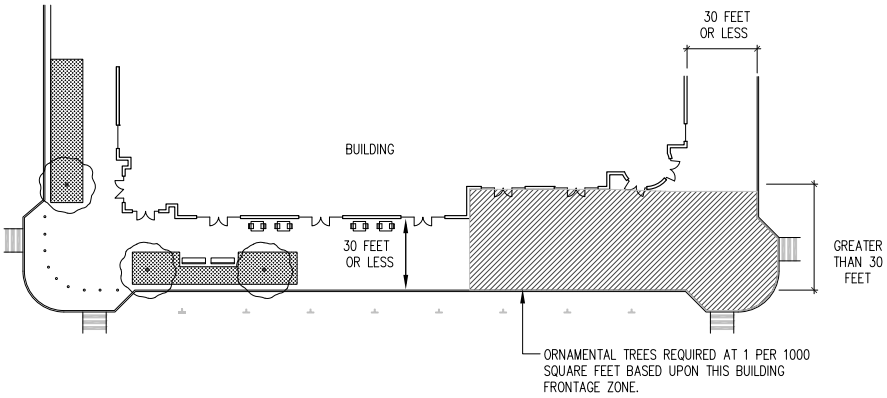
E. Continuous tree planters at least fifty (50) feet in length may be planted with grass, shrubs, perennials, and/or groundcover.

F. A minimum of one half (1/2) of the surface area of all planted areas within the building frontage, other than tree planters, shall be planted with shrubs and/or groundcovers. The remainder of all other planting areas required may be groundcover or lawn.

G. In addition to required Shade trees, Ornamental trees shall be provided when the dimension within the Building Frontage Zone (from the edge of right-of-way to the building face) is greater than thirty (30) feet in depth. Ornamental trees shall be planted at an average rate of one (1) tree per one thousand (1,000) square feet of building frontage zone. (See Figure 4.8-9) Up to one half (1/2) of the ornamental trees may be substituted with shrubs, perennials, and/or groundcover per allowed plant unit equivalencies.

SECTION 4: LANDSCAPE STANDARDS

FIGURE 4.8-9: ORNAMENTAL TREES WITHIN BUILDING FRONTAGE ZONE- NON-RESIDENTIAL AND MIXED USES



2. Residential uses in Transit-Oriented/Activity Center, Nonresidential, and Residential Zones:
   A. Building Frontage Requirements:
      I. Fourteen (14) Feet or Less: In building frontage zones where the depth between the back of curb to the building face is 14 feet or less, a minimum of eight (8)% percent planted areas, including tree planters, shall be provided.; (see figure 4.8-11 and 4.8-12)
      II. Greater Than Fourteen (14) to Twenty Five (25) Feet: In building frontage zones where the depths between the back of curb to the building face is greater than 14 feet and not more than 25 feet, a minimum of sixty (60) percent planted areas, including tree planters, shall be provided, including tree planters. (see figure 4.8-13 and 4.8-14)
      III. Greater than Twenty Five (25) Feet: In building frontage zones where the depth between the back of curb to the building face is greater than twenty-five (25) feet, a minimum of seventy (70) percent planted areas, including tree planters, shall be provided.

B. Street trees shall be planted along each residential frontage, within ten (10) feet of the face of curb, at an average spacing of not less than twenty-five (25) feet on center nor greater than fifty (50) feet on center, excluding driveway openings. Spacing allowances may be made, where necessary, to accommodate curb cuts, fire hydrants, and other infrastructure elements.

C. Building frontages shall provide one (1) shade tree for every thirty (30) linear feet of building frontage excluding driveway openings.

D. Ornamental trees shall be provided when the building frontage (from the face of curb to the building face) is greater than thirty (30) feet in depth. Ornamental trees shall be planted at an average rate of one (1) tree per one thousand (1,000) square feet of building frontage zone.

FIGURE 4.8-10: ORNAMENTAL TREES WITHIN BUILDING FRONTAGE ZONE- RESIDENTIAL USES

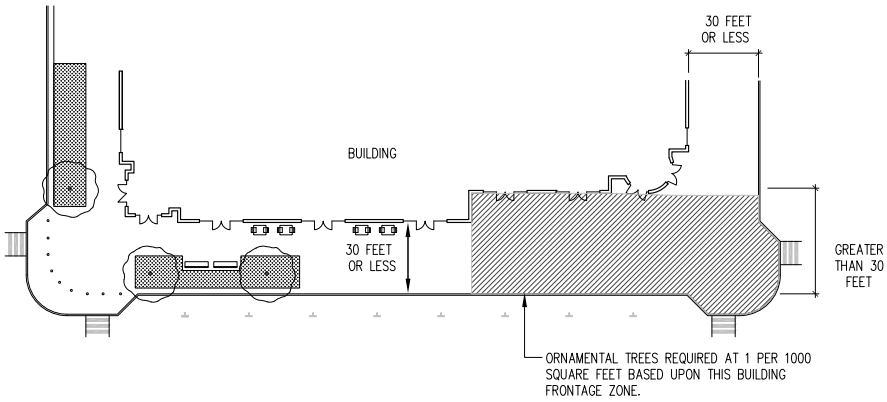
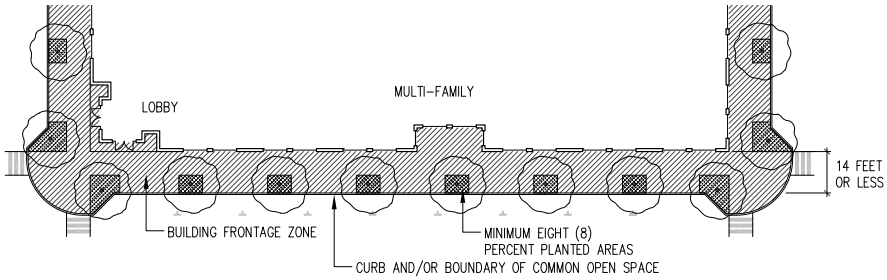


FIGURE 4.8-11: BUILDING FRONTAGE ZONE FOR MULTIFAMILY (14-FOOT DEPTH OR LESS)



SECTION 4: LANDSCAPE STANDARDS

FIGURE 4.8-12: BUILDING FRONTAGE ZONE FOR SINGLE-FAMILY AND TOWNHOUSE (14-FOOT DEPTH OR LESS)

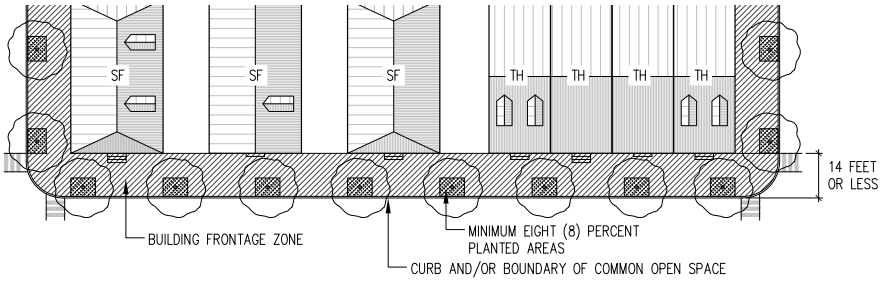


FIGURE 4.8-13: BUILDING FRONTAGE ZONE FOR SINGLE-FAMILY RESIDENTIAL (14- TO 25-FOOT DEPTH)

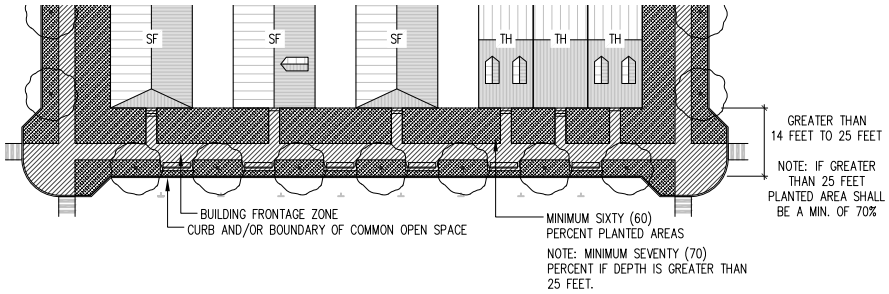
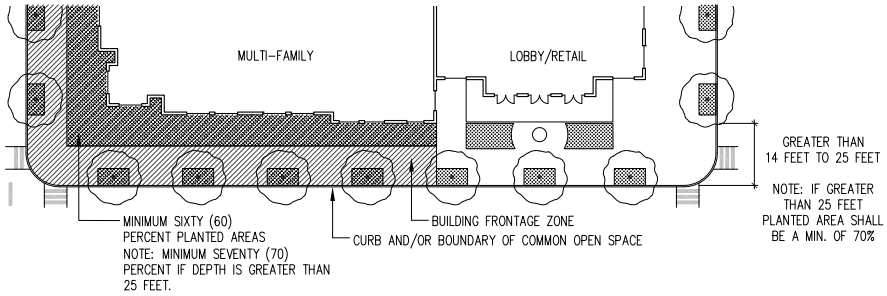


FIGURE 4.8-14: BUILDING FRONTAGE ZONE FOR MULTIFAMILY RESIDENTIAL (14- TO 25-FOOT DEPTH)



E. A minimum of one half (1/2) of the surface area of each provided tree planter shall be planted with shrubs and/or perennials. The remainder of the surface area must be groundcover. Tree grates and pervious materials (such as hand-laid granite cobbles) are only permitted in the Transit-Oriented/Activity Center zones and within the Building Frontage Zones in Nonresidential and Residential zones.

F. Continuous tree planters at least fifty (50) feet in length may be planted with grass, shrubs, perennials, and/or groundcover.

G. A minimum of one half (1/2) of the surface area of all planted areas within the building frontage zone, other than tree planters, shall be planted with shrubs and/or groundcovers. The remainder of all other planting areas required may be groundcover or lawn.

H. For multifamily or mixed-use development, the planting requirements at lobby entrances, ground floor nonresidential uses, and/or storefronts shall conform to the requirements for Nonresidential Development as described above in this section. (See Figure 4.8-14)

d. Demonstrating Compliance

The landscape plan shall include a schedule as follows for all internal building frontages demonstrating compliance with the requirements of this section.

SECTION 4: LANDSCAPE STANDARDS

SAMPLE SCHEDULE 4.8-1 BUILDING FRONTAGE ZONE (NON-RESIDENTIAL USE)		
Total length of Building Frontage		*linear feet*
Number of Shade Trees required *at 1 per 40 linear feet*		
Number of Shade Trees provided *per Section 4.10: Street Trees*		
Number of Shade Trees required *less Section 4.10: Shade Trees*		
Total number of Shade Trees provided		
Shade Tree planting unit equivalency provided	Shade Tree planting unit equivalency provided	
Building Frontage Zone *greater than 30 feet in depth*		*sq. ft.*
Number of Ornamental Trees *required at 1 per 1000 sf*		
Number of Ornamental Trees Substitutes		
Total number of Ornamental Trees provided		
Total number of shrubs provided		
Ornamental Tree and shrub/perennial planting unit equivalency provided		*planting units*
Building Frontage Zone *less than 25 feet in depth*	*sf x 8%*	*sf of planted area req.*
Building Frontage Zone *25 feet or greater*	*sf x 20%*	*sf of planted area req.*
Total square feet of planted area required		*sf of planted area req.*
Tree planters		
Isolated tree planters	*sf x 50%*	*sf of planted area req.*
Tree grates	*sf*	*no planting required*
Continuous planters	*sf*	*no planting required*
Total number of shrubs and/or perennials provided in tree planters		
All other planted areas	*sf x 50%*	*sf of planted area req.*
Total number of shrubs and/or perennials provided in all other planters (in addition to Ornamental Tree substitutions)		
Shrubs/perennials planting unit equivalency provided		*planting units*

SAMPLE SCHEDULE 4.8-2 BUILDING FRONTAGE ZONE (RESIDENTIAL USE)		
Total length of Building Frontage		*linear feet*
Number of Shade Trees required *at 1 per 30 linear feet*		
Number of Shade Trees provided *per Section 4.10: Street Trees*		
Number of Shade Trees required *less Section 4.10: Shade Trees*		
Total number of Shade Trees provided		
Shade Tree planting unit equivalency provided	Shade Tree planting unit equivalency provided	
Building Frontage Zone *greater than 30 feet in depth*		*sq. ft.*
Number of Ornamental Trees *required at 1 per 1000 sf*		
Number of Ornamental Trees Substitutes		
Total number of Ornamental Trees provided		
Total number of shrubs provided		
Ornamental Tree and shrub/perennial planting unit equivalency provided		*planting units*
Building Frontage Zone *14 feet or less*	*sf x 8%*	*sf of planted area req.*
Building Frontage Zone *Greater than 14 to 25 feet*	*sf x 60%*	*sf of planted area req.*
Building Frontage Zone *Greater than 25 feet*	*sf x 70%*	*sf of planted area req.*
Total square feet of planted area required		*sf of planted area req.*
Tree planters		
Isolated tree planters	*sf x 50%*	*sf of planted area req.*
Tree grates	*sf*	*no planting required*
Continuous planters	*sf*	*no planting required*
Total number of shrubs and/or perennials provided in tree planters		
All other planted areas	*sf x 50%*	*sf of planted area req.*
Total number of shrubs and/or perennials provided in all other planters (in addition to Ornamental Tree substitutions)		
Shrubs/perennials planting unit equivalency provided		*planting units*

SECTION 4: LANDSCAPE STANDARDS

4.9 Sustainable Landscaping Requirements

Understanding the importance of environmental site design and sustainable landscape techniques will help to ensure the longevity of Prince George's County's landscapes. By designing to accomplish the purposes and objectives for the sustainable landscape requirements, future development in Prince George's County will create functioning environmental systems and connected landscapes that benefit the health of the environment and communities that reside within them.

a. Purposes and Objectives

1. Promote sustainable landscaping as an environmentally sensitive design approach.
2. Prioritize the use of regionally native plants into landscape design to provide food for pollinators, habitat for wildlife, and create functioning environmental systems.
3. Increase species biodiversity to avoid the creation of plant monocultures that promote rapid spread of disease and pests, deplete soil resources, and provide minimal visual variety.
4. Prohibit the planting of invasive species, and manage/remove existing invasive species.
5. Prohibit the planting of trees on steep slopes.
6. Provide opportunities for edible landscaping to improve access to healthy foods for all Prince Georgians.

b. Design Guidelines

1. Plant material should be organized to mirror patterns found in nature, through layering of trees and shrubs where space allows.
2. Landscapes should be designed for year-round visual interest through the use of native evergreen, deciduous, flowering, and fruiting plant species.
3. Plants should be selected to suit site conditions, such as soil composition, moisture content, and availability of sunlight. Projects should strive for landscapes that do not require heavy irrigation.
4. The landscape design should include a diverse plant palette of native plants with a wide variety of environmental benefits and should not include invasive species that negatively affect regional ecosystems.

5. Vegetated areas to be retained that contain invasive species should conform to the requirements of the landscape manual. Invasive species should be removed in order to allow for long-term health of the landscape.
6. Landscaped areas should be maintained in order to prevent the introduction of invasive species, which negatively affect the existing ecosystem.
7. Slopes greater than three-to-one (3:1) are not conducive to tree growth and should not be planted to fulfill these requirements.
8. Where applicable in urban settings, new technologies that promote the longevity of plantings should be incorporated. This could include, but is not limited to, the use of structural cells or structural soils to lengthen the lifespan of urban street trees and permeable hardscapes that facilitate ground water movement.

c. Requirements

1. A minimum percentage of plants within each plant type (including shade trees, ornamental trees, evergreen trees, and shrubs) shall be native species (or the cultivars of native species) as identified in the National Park Service, U.S. Fish and Wildlife Service publication *Native Plants for Wildlife Habitat and Conservation Landscaping: Chesapeake Bay Watershed* (as updated periodically) or M-NCPPC's publication *Native Plants of Prince George's County* (dated 1998) or any subsequent revision. The minimum percentage of plants of each plant type required to be native species and/or native species cultivars is specified below:

TREE CATEGORY	PERCENTAGE NATIVE
Shade Trees	80%
Ornamental Trees	70%
Evergreen Trees	40%
Shrubs	60%

2. Native plant material shall be identified as such in the planting schedule on the landscape plan.
3. To encourage biodiversity of plantings, the following species diversity requirements must be met as outlined below:

SECTION 4: LANDSCAPE STANDARDS

NUMBER OF TREES/ SHRUBS	MAX. % OF ONE SPECIES
1-10	100%
11-50	50%
51-100	30%
100-250	15%
250+	10%

4. The planting schedule on the landscape plan shall not include species identified in *Invasive Species of Concern in Maryland* (as updated periodically by the Maryland Invasive Species Council) or in *Plant Invaders of Mid-Atlantic Natural Areas*, published by the National Park Service, U.S. Fish and Wildlife Service (as updated periodically).
5. Existing trees and/or vegetation retained in fulfillment of the requirements shall not contain invasive species. A note shall be added to the landscape plan that requires removal of existing invasive species prior to certification in accordance with Section 1.5, Certification of Installation of Plant Materials.
6. Trees proposed in fulfillment of the requirements shall not be planted on slopes steeper than three-to-one (3:1).

d. Demonstrating Compliance

The landscape plan shall include a schedule as follows demonstrating compliance with the requirements of this section.

SAMPLE SCHEDULE 4.9-1 SUSTAINABLE LANDSCAPING REQUIREMENTS				
% OF NATIVE PLANTS				
	# Plants Provided	Total Native	Native % Required	% Native Provided
Shade Trees			80%	
Ornamental Trees			70%	
Evergreen Trees			40%	
Shrubs			60%	
MINIMUM # SPECIES REQUIRED				
	Total # Provided	Predominant Species (Name)	# Predominant	% Predominant Species
Shade Trees				
Ornamental Trees				
Evergreen Trees				
Shrubs				
1. Are invasive species proposed?			☐ Yes	☐ No
2. Are existing invasive species on-site in areas that are to remain undisturbed?			☐ Yes	☐ No
3. If "yes" is checked in numbers 2 or 3, is a note included on the plan requiring removal of invasive species prior to certification in accordance with Section 1.5, Certification of Installation of Plant Materials?			☐ Yes	☐ No
4. Are trees proposed to be planted on slopes greater than 3:1?			☐ Yes	☐ No

SECTION 4: LANDSCAPE STANDARDS

4.10 Street Trees (For Private Streets)

Street trees are required along all public and private streets pursuant to the following standards.

All public rights-of-way in Prince George's County are governed by the County's Department of Public Works and Transportation, State Highway Administration, National Parks Service, or a municipality. Section 23-141 of the County Code requires the planting of street trees during the development process when existing public roads have to be improved and when new public roads are constructed. Design standards for street trees within public rights-of-way should be obtained from the governing agency and shall supercede these requirements and standards for private streets; however, all proposed street trees within public rights-of-way should be shown on all landscape plans for informational purposes.

Street trees are also required per Section 4.8: Building Frontage Landscaping Requirements which requires street trees along and parallel to a building's primary and front facades, when such facades face a street, drive aisle, parking lot or common open space (such as a park, square or plaza). Street trees as required per this Section, as well as street trees provided (or existing) within public rights-of-way pursuant to operating agency shall count towards the building frontage zone requirements for those portions of the building frontage zone that face onto and are within

forty (40) feet of the back of curb of the street.

a. Purposes and Objectives

1. Ensure that street trees along streets are selected and planted in a manner that will enhance streets both visually and environmentally.
2. Define streets as a unified space where uniform tree spacing and a consistent tree character help to visually connect distant and sometimes disparate uses.
3. Establish human- scale, and promote pedestrian activity by fostering a safe, pedestrian-friendly streetscape along all streets.
4. Contribute to the County's overall sustainability goals.

b. Design Guidelines

1. Street trees should be of a substantial size and should be spaced at intervals that create a consistent canopy over the streetscape, provided they do not conflict with traffic safety and operational standards.
2. Trees adjacent to the right-of-way should be selected from native varieties that require little maintenance and tolerate salt and soil compaction.
3. Street trees at vehicular entrances should be located so as to maintain safe sight distances.
4. Street trees should be part of an overall streetscape plan designed to provide both canopy and shade and to give special character and coherence to each street.
5. The desired aesthetic effect should be achieved through the use of native and/or proven hardy adapted species.
6. Street trees should shape the street space, increasing pedestrian comfort and adding value to the community.
7. Street tree species that form a ceiling-like enclosure and open a clear view of the street space and shop fronts at eye-level should be utilized.
8. Street tree species should be planted consistently within the streetscape to provide a distinct form and character to each street. Plans should provide species diversity corresponding to the street character by planting different streets with different trees.
9. Street trees should be planted along all private and public streets

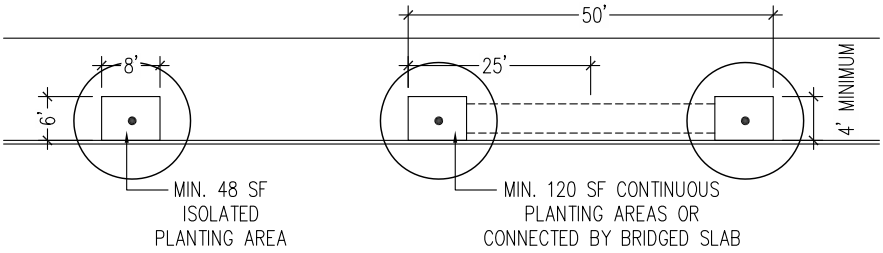
SECTION 4: LANDSCAPE STANDARDS

(subject to the approval of the appropriate public agency), entry drives and drive aisles.

c. Requirements

1. Street trees along streets with non-residential uses shall be planted at 1 tree per 40 linear feet. Street trees along streets with residential uses shall be planted at 1 tree per 30 linear feet. Streets with a mix of uses shall be planted per the above regarding the most prominent use. Street tree spacing should be generally as consistent as possible along the entire street.
2. Linear feet of frontage is measured from intersection curb-to-curb, not centerline of street intersection ,and not including driveways, curb cuts, aprons, or similar vehicular access points.
3. Street trees shall be located in a space not less than six (6) feet wide by eight (8) feet long between the street curb or edge of paving and the sidewalk. A minimum of forty-eight (48) square feet of surface area per tree shall be provided. (See Figure 4.10-1)

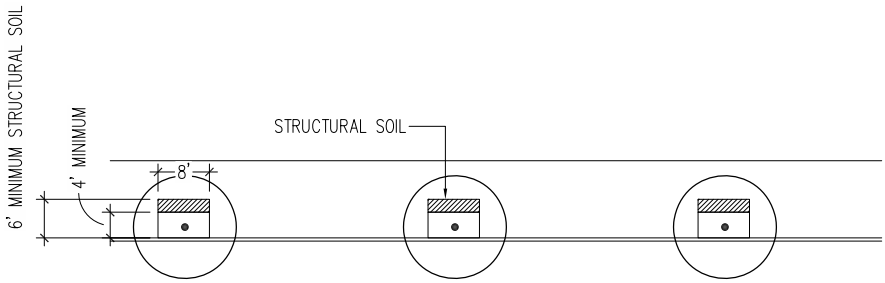
FIGURE 4.10-1: STREET TREE PLANTING AREA



4. Where space is limited, tree planters may be reduced to five (5) feet wide, but shall have a minimum of sixty (60) square feet of surface area.
5. Street tree planters may be reduced to four (4) feet wide from back of curb with the use of tree grates and a minimum of thirty-two (32) square feet of ground area per tree shall be provided. The applicant shall clearly identify a minimum six (6) foot wide panel of structural soil, or other techniques to ensure the survival of

street trees. Details and specifications of such techniques shall be provided on the landscape plan (See Figure 4.10-2).

FIGURE 4.10-2: STREET TREE PLANTING AREA

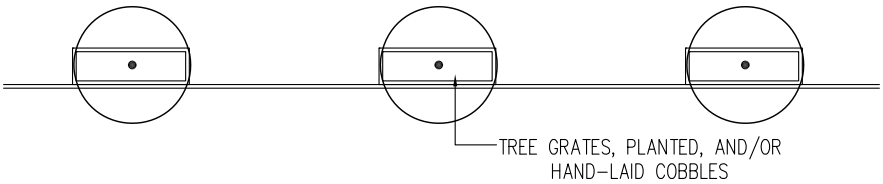


6. All tree planters shall include a minimum of three (3) foot depth of amended soil and a minimum one hundred forty-four (144) cubic feet per street tree in an individual planter or one hundred twenty (120) cubic feet per street tree in a continuous planter if such continuous planters are a minimum of fifty (50) feet in length. (see figure 4.10-1, above).
7. Street trees with a minimum diameter of, two and one-half (2-1/2) to three (3) inch caliper dbh in size, shall be planted along each street at an average spacing of not less than twenty-five (25) feet on center nor greater than fifty (50) feet on center, excluding driveway openings. Spacing allowances may be made, where necessary, to accommodate curb cuts, fire hydrants, and other infrastructure elements.
8. Ornamental trees, seven (7) to nine (9) feet in height, may only be used to meet the requirements of this Section where overhead wires prohibit the planting of shade trees. Ornamental trees shall be planted at an average rate of one (1) tree per twenty-five (25) linear feet, excluding driveway openings.
9. Street trees shall be located a minimum of thirty-five (35) feet from the point of curvature of an intersection of two (2) streets.
10. Street trees shall be located a minimum of five (5) feet from the point of curvature of residential driveway entrances.
11. Street trees shall be located a minimum of ten (10) feet from the point of curvature of commercial driveway entrances.

SECTION 4: LANDSCAPE STANDARDS

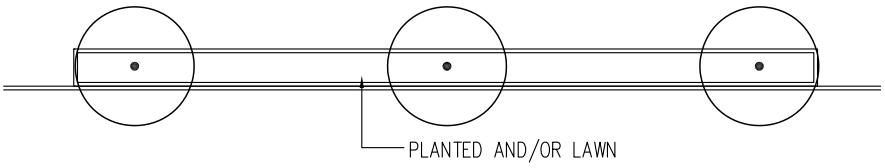
12. Street trees shall be located a minimum of fifteen (15) feet from street light poles.
13. Street trees shall be located a minimum of five (5) feet from water meters, gas boxes and hydrants.
14. Street trees shall be located a minimum of ten (10) feet from storm drain inlets, or manholes.
15. A minimum of fifty (50) percent of the all isolated street tree planters shall be planted with shrubs and/or perennials, the remainder of the street tree planter shall be planted with groundcovers. Tree grates and pervious materials (such as hand-laid granite cobbles) are only permitted in the Transit-Oriented/ Activity Center zones and within the Building Frontage Zones in Nonresidential, and Residential zones. (See Figure 4.10-3)

FIGURE 4.10-3: STREET TREE GRATES



16. Continuous street tree planting strips that contain a minimum of three (3) trees may be planted with grass, shrubs, perennials, and/ or groundcover. (See Figure 4.10-4)

FIGURE 4.10-4: CONTINUOUS STREET TREE PLANTING STRIPS



17. Street tree planters with mulch are not permitted.

d. Demonstrating Compliance

The landscape plan shall include a schedule as follows for all public and private streets, demonstrating compliance with the requirements of this section.

TABLE 4.10-1: STREET TREES ALONG STREETS

Sample Schedule 4.10-1

Street Trees Along Streets

1)	Number of street trees required:	
	a. Linear Feet of residential frontage divided by 30	_____LF / 30 _____street trees
	b. Linear Feet of non-residential frontage divided by 40	_____LF / 40 _____street trees
2)	Number of street trees provided:	_____street trees
3)	If ornamental trees are used, are they spaced on average25 feet on center? (Ornamental trees may only be used where overhead wires prohibit the planting of shade trees.)	_____ yes _____no
4)	Are street trees located a minimum of 35 feet from the point of curvature of an intersection?	_____yes _____no
5)	Are street trees located a minimum of 10 feet from the point of curvature of a residential driveway?	_____ yes _____no
6)	Are street trees located a minimum of 20 feet from the point of curvature of commercial driveway entrances?	_____yes _____no
7)	Are street trees located between the sidewalk and face of curb in a space no less than 6 feet wide?	_____ yes _____no
	4 feet wide, how are you accommodating the soil volume needed?	_____ yes _____no
8)	Are street trees located a minimum of 15 feet from street light poles?	_____ yes _____no
9)	Are street trees located a minimum of 10 feet from water meters?	_____yes _____no
10)	Are street trees located a minimum of 10 feet from storm drain inlets, hydrants, or manholes?	_____yes _____no
11)	Area of soil surface required (minimum of 150 square feet for isolated trees and a minimum of 120 square feet for continuous landscape strips):	_____square feet
12)	Minimum area of soil surface provided:	_____square feet

SECTION 4: LANDSCAPE STANDARDS

4.11 Requirements for Nonresidential And Mixed-Use Development

These requirements apply to all nonresidential uses in the Residential, Nonresidential, and Transit-Oriented/Activity Center zones.

a. Purposes and Objectives

1. To ensure Green Area, Common Open Space, streets and drive aisles, and the spaces around and between buildings are attractively landscaped to fulfill green infrastructure, species diversity, and Tree Canopy Ordinance goals,
2. Establish a visual relationship between commercial, mixed-use, and industrial structures and their surrounding environments.
3. Reduce the energy needs of commercial and industrial users by landscaping for passive energy conservation.
4. Create privacy by buffering commercial and industrial structures from incompatible uses, where buffers are appropriate.
5. Reduce the negative effects of reflection and glare from paving, structures, or direct light from the sun, headlights, street lights, etc.
6. Enhance the aesthetic appearance of commercial areas and concentrations of industrial uses to increase economic viability for the surrounding neighborhoods and Prince George's County.
7. Enhance the quality of public spaces and streets, especially in mixed-use and commercial development, to be more walkable and engaging.

b. Design Guidelines

1. Planting schemes for nonresidential and mixed-use development should be comprehensively designed for an entire project rather than sample model plantings repeated many times over.
2. Plantings should be used to accent corners of intersecting streets, entry drives, drive aisles, and highlight prominent building architectural features to create a pedestrian friendly streetscape.
3. Nonresidential development that includes Common Open Space should provide additional landscaping in the Green Area.
4. Plant material should be used to define space and circulation, provide shade, contribute to pedestrian interest, and enhance the employment and shopping experience for workers and patrons.
5. The quantity of trees allocated to Common Open Spaces should not have the effect of eliminating the landscaping devoted to nonresidential requirements.

6. Plantings and landscape materials as determined by Green Area and/or Common Open Space should be used to create attractive plantings along a project's boundary and entry area, entry drives, walkways, internal drives and circulation routes, and areas between building frontages/facades and the street or parking lot edge.

c. Requirements

1. Nonresidential and Mixed uses:

A. For Transit-Oriented/Activity Center and Nonresidential zones, plant a minimum of one (1) major shade tree per one thousand (1,000) square feet or fraction of Green Area provided. Landscape requirements as determined by Green Area shall be used to create attractive plantings in Common Areas (plazas, greens, and squares, for instance), at development entrances, along entry drives and drive aisles.

B. The following areas shall be excluded when determining the total amount of Green Area provided: lakes or other water areas, any required parking lot landscape strip adjacent to a public right-of-way, any undisturbed forested areas to be preserved and any required interior parking lot green area. Trees that count toward fulfillment of the parking lot perimeter requirement may be counted toward fulfillment of this requirement. Trees shall be located to best fulfill the objectives and design guidelines of this section.

C. Newly planted trees provided per Prince George's County Tree Canopy Ordinance may count towards the Green Area requirement.

D. Twenty five percent (25%) of the gross square feet of Green Area provided shall be planted with ornamental trees, evergreen trees, shrubs, perennials, and/or groundcover.

E. Submitted plans must distribute the Green Area planting requirements evenly throughout the Green Area, to help address a desire for understory plantings, species diversity, enhanced green infrastructure, in support of the County's environmental and Tree Canopy Ordinance goals and to ensure the following areas, at a minimum, are planted:

I. All open space areas, greens, parks, squares, recreation and amenity facilities, and similar gathering spaces;

SECTION 4: LANDSCAPE STANDARDS

II. Property boundary areas not covered by buffers required per Sections 4.6:Buffering Development From Streets and Section 4.7: Buffering Incompatible Uses;

III. Entry areas not already covered by Section 4.2: Landscape Strips and Section 4.10: Street Trees.;

IV. Entry drives, internal streets and drives, and vehicular circulation routes not already covered by Section 4.2: Landscape Strips and Section 4.10: Street Trees.; and,

V. Areas between buildings and parking areas not already covered by Section 4.3: Parking Lots and Section 4.8: Building Frontage Zones.

F. The number of required shade trees that exceed the minimum tree canopy requirement may be substituted with Ornamental trees, Evergreen trees, shrubs, and/or perennials in accordance with the Plant Equivalencies (See Glossary).

G. An existing shade tree, except invasive species, at least four (4) inches in caliper may count towards the Green Area requirements if retained in place.

d. Demonstrating Compliance

The landscape plan shall include a schedule as provided below demonstrating compliance with the requirements of this section.

SAMPLE SCHEDULE 4.11-1 REQUIREMENTS FOR NONRESIDENTIAL AND MIXED-USE DEVELOPMENT	
Square Feet of Green Area provided:	_____SF
Number of Shade Trees required @ 1 : 1,000 SF	_____
Number of Shade Trees substituted:	_____
for Ornamental/Evergreen trees:	_____
for shrubs/perennials:	_____
Total Number of Shade Trees Provided:	_____
Understory plantings provided @ 25% of Green Area:	
Ornamental trees:	_____
Evergreen trees:	_____
Shrubs:	_____
Perennials:	_____
Groundcover:	_____SF

GLOSSARY OF TERMS

GLOSSARY

The definitions contained in this glossary are distinct to this manual. For the definitions not contained herein, refer to the County Zoning Ordinance.

BERM: An earthen mound designed to provide screening of undesirable views, reduce noise, etc.

BUFFER: A combination of physical space and vertical elements, such as plants, berms, fences, or walls, the purpose of which is to separate and screen incompatible land uses from each other.

BUFFERYARD: One of several specific combinations of minimum building setbacks, landscaped yard widths, and plant material requirements set forth in Section 4.7, Buffering Incompatible Uses, for use in buffering incompatible land uses.

BUILDING FRONTAGE ZONE: An area, measured in square feet, that is determined by multiplying the building, lot, or block frontage width by the dimension as measured from the face of the building to the back of curb of the street or parking lot (or to the boundary of the common area). This dimension may vary along a street or block; the planting requirements may, therefore, also vary. The building frontage zone may overlap the property line or right-of-way. For Transit-Oriented/ Activity zones, the building frontage requirements apply to all streets and all sides of every block.

COMMON AREA /

COMMON OPEN SPACE: Land or facilities that are located within, or related to, a development, and that are designed for use by the residents (and guests) of, or workers in, the entire development or a designated part of the development. Common area does not include land or facilities which are individually owned or dedicated to public use. Common area remains in the ownership of a homeowners' or similar association.

COMMUNITY GARDEN: A private or public facility for cultivation of fruits, flowers, vegetables, or ornamental plants by more than one person, household, family, or non-profit organization for personal or group use, consumption, or donation. Community gardens may be divided into separate plots for cultivation by one or more individuals or may be farmed collectively by members of the group and may include common areas maintained and used by group members.

CONSERVATION LANDSCAPING: A landscape methodology that uses native plants, removes invasive plants, conserves water, and minimizes use of chemical fertilizers and pesticides in order to provide sustainable biological communities.

CRITICAL ROOT ZONE: The minimum volume of roots necessary for maintenance of tree health and stability. The critical root zone of a specimen tree (thirty (30) inches diameter at breast height (dbh) or greater) is a circle with a radial distance of one and one half (1.5) feet for every one (1) inch dbh. The critical root zone of a non-specimen tree (less than thirty (30) inches dbh) is a circle with a radial distance of one (1) foot for every one (1) inch of dbh, with a minimum of eight (8) feet.

DECIDUOUS: A plant with foliage that is shed annually.

EVAPOTRANSPIRATION: The sum of evaporation and plant transpiration from the earth's surface to the atmosphere.

EVERGREEN: A plant with foliage that persists and remains green year-round.

GREEN AREA: An area of land associated with and located on the same parcel of land as a building for which it serves to provide light and air. Green Area, for purposes of this manual, does not include any water surfaces or paved surfaces or any impervious area of a site, such as rooftops or patios. However, greenroofs and roof gardens that are planted and accessible are considered part of the Green Area.

HISTORIC ROAD: A public or private road that has been documented by historic surveys, and maintains its historic alignment and landscape context through views of natural features, historic landscape patterns, historic sites and structures, historic farmstead groupings, or rural villages and is identified as a historic road in the Approved Countywide Master Plan of Transportation.

HISTORIC SITE: As identified on the *Prince George's County Approved Historic Sites and Districts Plan* as a designated historic site or that is noted on the National Register of Historic Places.

INVASIVE SPECIES: A non-native plant that tends to escape containment and rapidly spreads in an area where there are few natural controls to its growth, resulting in a crowding out of native species or lessening of biological diversity. For purposes of this manual, invasive species are those identified in (1) *Invasive Species of Concern in Maryland* (as updated periodically by the Maryland Invasive Species Council), or (2) *Plant Invaders of Mid-Atlantic Natural Areas*, published by the National Park Service, U.S. Fish and Wildlife Service (as updated periodically).

LANDSCAPE STRIP: An area between the building(s) or parking facility and the street right-of-way. For private streets the landscape strip is the area between the building(s) or parking facility or sidewalk. The landscape strip must encompass the entire right-of-way frontage.

NATIVE SPECIES: A plant historically present in a particular region. Native is usually defined as having been found indigenous to the local area before colonization. For purposes of this manual, native species are those as identified in the

U.S. Fish and Wildlife Service Publication, *Native Plants for Wildlife Habitat and Conservation Landscaping - Chesapeake Bay Watershed* or the M-NCPPC publication, *Native Plants of Prince George's County.*

ORNAMENTAL TREE: A deciduous tree planted primarily for its ornamental value. May be any size at maturity, but will tend to be smaller than a shade tree.

PARKWAY: A linear, landscaped park designed to encompass a roadway that is restricted to use by automobiles. Suitland Parkway and Baltimore-Washington Parkway are the two parkways located in Prince George's County and are identified as such in the *Approved Countywide Master Plan of Transportation*.

PLANT UNIT: Plant unit equivalencies are as follows:

» One (1) shade tree = Ten (10) plant units

» One (1) minor shade tree = Five (5) plant units

» One (1) evergreen tree = Five (5) plant units

» One (1) ornamental tree = Five (5) plant units

» One (1) shrub = One (1) plant unit

» Fifty (50) square feet groundcover = Ten (10) plant units

PRIVATE STREET: A private road, right-of-way, or easement along which development is authorized pursuant to Subtitle 24, except for easements created under Section 24-1<> to avoid potentially hazardous or dangerous traffic situations, for easements utilized pursuant to Section 24-<>, for opportunity housing, or for right-of-way easements in an integrated shopping center pursuant to Section 24-<> or any other right-of-way or access easement that is not defined as a street in Subtitle 27.

SCENIC BYWAY: Transportation corridors identified by the Maryland State Highway Administration and identified as such in the *Approved Countywide Master Plan of Transportation*, linking historic and scenic features under a specific theme.

SCENIC ROAD: A public or private road that provides scenic views along a substantial part of its length through natural or manmade features, such as forest or extensive woodland, cropland, pasturage, or meadows; distinctive topography, including outcroppings, streambeds, and wetlands; traditional building types; historic sites; or roadway features, such as curving, rolling roadway alignment, and leaf tunnels; and is identified as a scenic road in the *Approved Countywide Master Plan of Transportation*.

SCREENING: A method of reducing the impact of visual and/or noise intrusions through the use of plant materials, berms, fences, walls, or any combination thereof. Screening blocks that which is unsightly or offensive with a more harmonious element or a combination of elements.

SETBACK: The distance between a building or structure (not including ground-level parking lots or other paved surfaces) and the street right-of-way or lot line.

SHADE TREE: A deciduous (or rarely, an evergreen) tree planted primarily for its high crown of foliage or overhead canopy. A major shade tree at maturity reaches a height of at least seventy (70) feet. A minor shade tree generally does not exceed a height of forty (40) feet.

SHRUB: A woody plant, smaller than a tree that consists of a number of small stems from the ground or small branches near the ground. It may be deciduous or evergreen.

SPECIMEN TREE: A particularly impressive or unusual example of a species due to its size, shape, age, or any other trait that epitomizes the character of the species.

SPECIAL ROADWAY: A roadway identified in the *Approved Countywide Master Plan of Transportation* as either a designated scenic or historic road, a state-designated scenic byway, or one of the two parkways (Suitland or Baltimore-Washington).

STREET TREE: A tree planted in close proximity to a street in order to provide canopy over the street, to give the street a sense of spatial definition and human scale, to provide shade, and soften the street edge.

TREE: A large, woody plant having one or several self-supporting stems or trunks and numerous branches. It may be classified as deciduous or evergreen.

TREES, EXISTING: Existing trees and shrubs of a number, size, and type that approximately accomplish the same function as new plantings but do not necessarily meet the definition of woodland in the *Woodland and Wildlife Habitat Conservation Ordinance.*

APPENDICES

APPENDICES

SECTION CONTENT

The following appendices may be revised and/or updated by the Planning Board or the Planning Director.

» APPENDIX 1:
Alternative Compliance Submittal Checklist

» APPENDIX 2:
Plant Substitution Request Form

» APPENDIX 3:
Plant Lists

» APPENDIX 4:
Planting Specifications and Planting Details

Appendix 1:

ALTERNATIVE COMPLIANCE SUBMITTAL CHECKLIST

a. Completed application form.

b. Application Fee:

   1. In conjunction with a permit (fee).
   2. In conjunction with companion case (no fee).

c. Underlying permit case or underlying companion case number on application form.

d. Section of Landscape Manual from which Alternative Compliance is requested.

e. A typewritten Statement of Justification demonstrating how the request satisfies the requirements of Section 1.3, Alternative Compliance of the Landscape Manual. The statement must be signed by the applicant or the designated correspondent.

f. One (1) zoning sketch map.

g. One (1) aerial photograph with property outlined in red.

h. Any supporting information (photographs, previous Alternative Compliance approvals, etc.)

i. One (1) Tree Conservation Plan or Exemption Letter.

j. One (1) Site Plan demonstrating the following:

   1. North arrow and scale.
   2. Property lines.
   3. Zoning and user of subject property and all abutting properties, location of buildings on abutting properties within fifty (50) feet of a property line, and notes indicating the existence of all buildings on abutting properties within two hundred (200) feet of a property line; zoning and use of properties directly adjacent to the subject property.
   4. Name, location, existing right-of-way width, ultimate right-of-way width, and all existing and proposed improvements within all abutting streets.
   5. Natural features, such as existing two (2) foot contour topography, ponds, lakes, and streams.

6. Delineation of regulated environmental features, such as one hundred (100) year floodplain, non-tidal wetlands, regulated streams, and associated buffers.
7. Existing and proposed stormwater management facilities.
8. Required bufferyard depths/widths (i.e., building setbacks and landscape yards from all lot lines).
9. Location, height, dimensions, details, and use of all existing and proposed buildings and other structures (including parking lots, sidewalks, and other paved areas; fences and walls; and recreational equipment).
10. Proposed grading in two (2) foot contours, with any slope steeper than three-to-one (3:1) labeled.
11. Location of existing and proposed utilities, including water, storm drain, and sanitary sewer pipes; overhead wires; utility poles and boxes; and signs.
12. Location of existing and proposed easements, including, but not limited to, access easements and utility easements.
13. Location, size, and description of all elements that are required to be screened by Section 4.4. Screening Requirements.

k. One (1) Landscape Plan in accordance with Section 2, Plan Preparation, sealed by a landscape architect in the State of Maryland.

APPENDICES

Appendix 2:

PLANT SUBSTITUTION REQUEST FORM

DATE

TO *Prince George's County Planning Department*

FROM Applicant Name:

Phone: Fax:

Email:

Address:

Signature:

SUBJECT Case Name: Case #:

This request must be accompanied by a landscape plan highlighting the location of all plants for which substitution is requested.

PLANT APPROVED ON LANDSCAPE PLAN BOTANICAL/ COMMON NAME		QTY	SIZE	NATIVE STATUS* (Y/N)	PROPOSED PLANT SUBSTITUTION BOTANICAL/ COMMON NAME	QTY	SIZE	NATIVE STATUS* (Y/N)

** Native species as identified in the U.S. Fish and Wildlife Service publication, Native Plants for Wildlife Habitat and Conservation Landscaping: Chesapeake Bay Watershed or The Maryland-National Capital Park and Planning Commission publication, Native Plants of Prince George's County dated 1998 or as subsequently revised.*

*See the **Prince George's County Landscape Manual**, Section 1.4, Plant Substitutions, for more information regarding the process and review criteria for plant substitutions.*

ACTION				DATE	REVIEWER
☐	Approval	☐	Denial		

Appendix 3:

TABLE A-3(a) RECOMMENDED SHADE TREES

SCIENTIFIC NAME	COMMON NAME	COMMENTS
*Acer rubrum and cultivars**	Red Maple	
*Catalpa speciosa**	Northern Catalpa	Fruits can be problematic, do not use as street tree
*Celtis occidentalis**	Hackberry	
*Fagus grandiflora**	American Beech	Beech trees are not as desirable as street trees due to surface roots
Fagus sylvatica	European Beech	
*Gingko biloba**	Male Ginkgo	Male cultivars only. Cultivars include 'Autumn Gold', 'Colonnade', 'Halka', 'Presidential Gold' and 'Princeton Sentry'
*Gleditsiia triacanthos var. intermis**	Thornless honelocust	Susceptible to webworm, may not be acceptable for urban/compacted areas. Selected cultivars include 'Imperial', 'Moraine', 'Shademaster', 'Skyline'
*Gymnocladus dioicus**	Kentucky Coffee Tree	
*Liquidambar styraciflua**	Sweetgum	Fruits can be a problem. Fruitless cultivars available like 'Rotundiloba'
*Liriodendron tulipifera**	Tulip Tree	
*Metasequoia glyptostroboides**	Dawn Redwood	Lower branching and shallow roots can be problematic if not in correct location.
*Nyssa sylvatica**	Black Gum	Has a tap root and can be difficult to transplant if above 2.5" caliper.
Platanus x acerifolia	London Plane Tree	Cultivars to use include 'Bloodgood', 'Columbia', 'Exclamation'
*Quercus alba**	White Oak	High disease susceptibility. Do not plant in groups.
*Quercus bicolor**	Swamp White Oak	
*Quercus coccinea**	Scarlet Oak	
*Quercus falcata**	Southern Red Oak	
*Quercus michauxii**	Swamp Chestnut Oak	
*Quercus palustris**	Pin Oak	Cultivars without drooping branches on lower limbs recommended
*Quercus phellos**	Willow Oak	
Quercus prinus	Chestnut Oak	
Quercus rubra (borealis)	Red Oak	
Quercus velutina	Black Oak	
Sephora japonica 'Regent'	Regent Japanese Pagoda Tree	
*Taxodium distichum var. distichum**	Bald Cypress	Tree has root aerating knees that can be problematic if not sited correctly. Not recommended for urban use unless adequate space.
*Tilia americana**	American Linden	
Tilia cordata 'Greenspire'	Greenspire Little Leaf Linden	
Tilia x euchlora	Crimean Linden	

PLANT LISTS

» TABLE A-3(a) Recommended Shade Trees

» TABLE A-3(b) Recommended Minor Shade Trees

» TABLE A-3(c) Recommended Ornamental Trees

» TABLE A-3(d) Recommended Evergreen Trees

» TABLE A-3(e) Trees Not Recommended For General Use

» TABLE A-3(f) Recommended Shrubs

» TABLE A-3(g) Recommended Stormwater Trees and Shrubs

» TABLE A-3(h) Prohibited Trees

» TABLE A-3(i) Prohibited Shrubs, Grasses, and Ground Covers

APPENDICES

TABLE A-3(a) RECOMMENDED SHADE TREES		
SCIENTIFIC NAME	COMMON NAME	COMMENTS
Tilia tomentosa	Silver Linden	
*Ulmus americana cultivars**	American Elm	Selected cultivars that are resistant to Dutch Elm's Disease include 'Princeton', 'Valley Forge', and 'Jefferson'
Zelkova serrata	Japanese Zelkova	Selected cultivars include 'Green Vase' and 'Village Green'

TABLE A-3(b) RECOMMENDED MINOR SHADE TREES		
SCIENTIFIC NAME	COMMON NAME	COMMENTS
Acer buergerianum	Trident Maple	
Acer campestre	Hedge Maple	
Acer griseum	Paperbark Maple	
Aesculus c carnea 'Briotii'	Red Horse Chestnut	
*Betula nigra**	River Birch	Cultivars include 'Cully', 'DuraHeat
Carpinus betulus 'Fastigiata'	European Hornbeam	
*Carpinus caroliniana**	American Hornbeam	
Cercidiphyllum japonicum	Katsura tree	
*Cladrastis lutea**	Yellowood	
Eucommia ulmoides	Hardy Rubber tree	Drought resistant.
Ostrya virginiana	Ironwood	
Prunus sargentii	Sargent Cherry	
*Sassafras albidum**	Sassafras	

TABLE A-3(c) RECOMMENDED ORNAMENTAL TREES		
SCIENTIFIC NAME	COMMON NAME	COMMENTS
*Amelanchier canadensis**	Shadblow Serviceberry	
*Cercis canadensis**	Redbud	
*Chionanthus virginicus **	Fringetree	
Cornus kousa	Kousa Dogwood	
Cornus florida	Flowering Dogwood	Specify Rutgers Stellar Series or Cherokee Series for resistance to anthracnose.
*Crataegus phaenopyrum**	Washington Hawthorne	Thornless varieties are available.
Crataegus viridis 'Winter King"	Winter King 'Green Hawthorne'	
*Halesia caroliniana**	Carolina Silverbell	
Hamamelis virginiana	Common Witch Hazel	
Lagerstroemia spp.	Crape Myrtle	
Magnolia spp.	Magnolia	
Malus cultivars	Floweirng Crabapple	'Royal Raindrop' series cultivars and other small tree cultivars
Oxydendrum arboreum	Sourwood	
Prunus spp.	Flowering Cherry	
Stewartia pseudocamel-lia	Japanese Stewartia	
Styrax japonicum	Japanese Snowball	
Syringa reticulata	Japanese Lilac Tree	

TABLE A-3(d) RECOMMENDED EVERGREEN TREES		
SCIENTIFIC NAME	COMMON NAME	COMMENTS
Cedrus atlantica glauca	Atlas Blue Cedar	
Cedrus deodara	Deodar Cedar	
*Chamacyparis thyoides**	Atlantic White Cedar	
Cryptomeria japonica	Japanese Cryptomeria	
Ilex equifolium cultivars	English Holly	
*Ilex opaca**	American Holly	
Ilexx attenuata	Foster Holly	
Ilex x 'Nellie R Stevens'	Nellie Stevens Holly	
*Juniperus virginiana**	Eastern Red Cedar	
Picea spp.	Spruce	
*Pinus spp.**	Pine	
*Thuja occidentalis**	Arborvitae	
Tsuga canadensis	Canadian Hemlock	

APPENDICES

TABLE A-3(e) TREES NOT RECOMMENDED FOR GENERAL USE		
SCIENTIFIC NAME	COMMON NAME	COMMENTS
Acer negundo	Boxelder	Short-lived; weak wood; prone to storm damage; prone to insects and diseases; roots buckle paving and clog drain pipes.
Acer platanoides	Norway Maple	Shallow spreading roots and heavy shade prevent anything from growing under it.
Acer pseudoplatanus	Sycamore Maple	Cankers; subject to dead wood; Invasive.
Acer saccharinum	Silver Maple	Same as Acer negundo.
Ailanthus altissima	Tree of Heaven	Heavy seeding and sprouting; weak wood; male flowers have bad odor.
Albizia julibrissin	Mimosa, Silk Tree	Invasive.
Betula papyrifera	Paper Birch	Prone to birch borers, leaf miners; short-lived.
Betula pendula	European White Birch	Prone to birch borers, leaf-miners; short-lived.
Gingko biloba female	Female Gingko	Very bad smelling fruit
Gleditsia triacanthos	Thorny Honeylocust	Dangerous thorns
Fraxinus ssp.	Green Ash	
Maclura pomifera	Osage Orange	Messy fruit; large thorns
Morus ssp.	Mulberry	Heavy sprouting; weak wood; messy fruit.
Populus spp.	Poplar	Short-lived; tendency to sucker freely; roots lift paving and clog drains; prone to canker disease; moths.
Sorbus spp.	Mountian Ash	Susceptible to many diseases and insect pests.
Juglans nigra	Black Walnut	Phytotoxins from roots; messy fruit
Prunus serotina	Black Cherry	Messy fruit.
Ulmus pumila	Siberian Elm	Invasive.

TABLE A-3(f) RECOMMENDED SHRUBS		
SCIENTIFIC NAME	COMMON NAME	COMMENTS
Abelia grandiflora	Gossy Abelia	
Azalea spp.	Azalea (in variety)	Ref. Rhododendron.
*Callicarpa americana**	American Beautyberry	
*Clethra alnifolia**	Summersweet	
Cornus alba cultivars	Siberian Dogwood	
*Cornus sericea**	Red-Osier Dogwood	
Forsythia spp.	Forsythia (in variety)	
*Hydrangrea arborescens**	Smooth Hydrangea	
Ilex cornuta 'Rotunda'	Dwarf Chinese Holly	
*Ilex spp. (excl. above)**	Holly (in variety)	Some native.
Jasminum nudiflorum	Winter Jasmine	
Juniperus chinensis sargenti, conferta, horizontalis, var.	Spreading or Dward Junipers (in variety)	
Juniperus spp. (excl. above)	Juniperus (in variety)	
*Kalmia latifolia**	Mountain Laurel	
*Leucothoe spp.**	Leucothoe	
*Myrica pensylvanica**	Northern Bayberry	
Osmanthus spp.	Osmanthus (in variety)	
Pieris japonica	Japanese Andromeda	
Prunus laurocerasus	Cherry Laurel	
Pyracantha spp.	Firethorn	
*Rhododendron spp.**	Rhododendron	Some native.
*Rhus aromatica 'Gro Low'**	Gro Low Fragrant Sumac	
Spiraea spp.	Spirea (in variety)	Except Spirea japonica due to its invasiveness.
Taxus spp.	Yew (in variety)	
*Vaccinium spp.**	Blueberry	
*Viburnum spp.**	Viburnum (in variety)	
Weigela spp.	Weigela (in variety)	

APPENDICES

TABLE A-3(g) RECOMMENDED STORMWATER TREES AND SHRUBS		
SCIENTIFIC NAME	COMMON NAME	COMMENTS
TREES		
*Acer rubrum**	Red Maple	
*Betula nigra (Cully)**	Heritage River Birch	
*Carpinus carolina**	American Hornbeam	
*Cercis canadensis**	Redbud	
*Liquidambar styraciflua**	Sweetgum	
*Liriodendron virginiana**	Sweetbay Magnolia	
*Nyssa sylvatica**	Black Gum	
*Platanus occidentalis**	American Sycamore	
*Quercus bicolor**	Swamp White Oak	
*Taxocium distichum**	Bald Cypress	
SHRUBS		
*Clethra alnifolia**	Summersweet	
*Cornus sericea**	Red-twigged Dogwood	
*Hydrangea arborescens**	Smooth Hydrangea	
*Ilex glabra**	Inkberry	
*Ilex verticillata**	Winterberry	
*Itea virginica**	Virginia Sweetspire	
*Myrica pensylvanica**	Bayberry	
*Rhus aromatic**	Fragrant Sumac	
*Vaccinium angustifolium**	Lowbush Blueberry	
*Vaccinium corymbosum**	Highbush Blueberry	
*Viburnum acerifolium**	Mapleleaf Viburnum	
*Viburnum dentatum**	Arrowwood Viburnum	

TABLE A-3(h) PROHIBITED TREES		
SCIENTIFIC NAME	COMMON NAME	COMMENTS
Acer Platanoides	Norway Maple	
Ailanthus altissima	Tree of Heaven	Heavy seeding and sprouting; weak wood; male flowers have bad odor
Albizia julibrissin	Mimosa, Silk Tree	Invasive.
Broussonetia papyrifera	Paper Mulberry	
Morus alba	White Mulberry	Heavy sprouting; weak wood; messy fruit; invasive; displacing and crossing with native.
Paulownia tomentosa	Princess Tree	
Pyrus calleryana	Bradford Pear	
Quercus acutissima	Sawtooth Oak	

TABLE A-3(i) PROHIBITED SHRUBS, GRASSES, AND GROUND COVER		
SCIENTIFIC NAME	COMMON NAME	COMMENTS
Alluvium vineale	Wild Garlic	
Alliaria petiolata	Garlic Mustard	
Ampelopsis vulgaris	Mugwort	
Arundo donax	Giant reed, wild cane	
Akebia guinata	Five-leaved akebia	
Bambusa, Phyllostachys, and Pseudodadda	Bamboo	
Berberis thunbergii	Japanese Barberry	
Buddleia	Butterfly Bush	
Carduus acanthoides	Plumeless Thistle	
Cirsium vulgare	Bull Thistle	
Celastrus orbiculatus	Oriental Bittersweet	
Centaurea biebersteinii	Spotted Knapweed	
Cynachum louiseae	Louis' Swallowwort	
Elaeagnus umbellata	Autumn Olive	
Euonymus alatus	Burning Bush	
Euonymys fortune	Creeping euonymus	
Fallopia japonica	Japanese Knotweed	
Hedera helix	English Ivy	
Hemerocallis fulva	Common Daylily	
Heracleum mantegazzianum	Giant Hogweed	
Humulus japonicus	Japanese Hops	
Imperata cylindrical	Japanese Bloodgrass	
Iris pseudocorus	Yellow Flag Iris	
Lespedeza cuneata	Chinese lespedeza	
Ligustrum (spp.)	Privet	
Lonicera	Honeysuckle	
Lythrum salicaria	Purple loosestrife	
Microstegium vimineum	Japanese stiltgrass	
Miscanthus sinensis	Chinese Silver Grass	
Murdannia keisak	Marsh dewflower	
Nandina domestica	Heavenly Bamboo	
Perilla frutescens	Perilla	
Phragmites australis	Common reed	
Polygonum cuspidatum	Japanese Knotweed	
Polygonum perfoliatum	Mile-a-minute	
Pueraria montana v. lobata	Kudzu	
Ranunculus ficaria	Lesser celadine	
Rhodotyposscandens	Jetbead	
Rubus phoenicolasius	Wineberry	
Vinca minor	Periwinkle	
Wisteria sinensis, W. floribunda	Wisterias, exotic	

APPENDICES

Appendix 4:

LANDSCAPE SPECIFICATIONS AND PLANTING DETAILS

Landscape specifications shall be as outlined below or as specified as best practices in the industry. Any item or procedure not mentioned below shall be as specified in the Landscape Specification Guidelines published by the Landscape Contractors Association (latest edition) or as subsequently amended.

a. Plant Materials

The landscape contractor shall furnish and install and/or dig, ball, burlap, and transplant all of the plant materials called for on the drawings and/or listed in the Plant Schedule.

b. Plant Names

Plant names used in the Plant Schedule shall be identified in accordance with Hortus Third, by L. H. Bailey, 1976 or any subsequent edition.

c. Plant Standards

All plant materials shall be equal to or better than the requirements of the "American Standard for Nursery Stock," latest edition, as published by AmericanHort (hereafter referred to as "ANLA Standards"). All plants shall be typical of their species and variety, shall have a normal habit of growth, and shall be first quality, sound, vigorous, well-branched, and with healthy well-furnished root systems. They shall be free of disease, insect pests, and mechanical injuries.

1. All plants shall be nursery grown and shall have been grown under the same climatic conditions as the location of this project for at least two years before planting. Neither heeled-in plants nor plants from cold storage will be accepted.
2. Collected plants or transplanted trees may be called for by the landscape architect and used, provided, however, that locations and soil conditions will permit proper balling.

d. Plant Measurements

All plants shall conform to the measurements specified in the Plant Schedule.

1. Caliper measurements shall be taken six (6) inches above grade for trees under four (4) inch caliper and twelve (12) inches above grade for trees four (4) inches caliper and over.
2. Minimum branching height for all shade trees shall be six (6) to eight (8) feet. (min. 8' when adjacent to a pedestrian or vehicular circulation area such as a sidewalk or street).
3. Minimum size for planting shade trees shall be two and one half to three (2 1/2 - 3) inches caliper, twelve to fourteen (12-14) feet in height. Tree sizing should be appropriate for species.
4. Minimum size for planting minor shade trees shall be two and one half to three (2 1/2 - 3) inches caliper, eight to ten (8-10) feet in height.
5. Minimum size for planting ornamental trees shall be one and a half to one and three-fourths (1 1/2 – 1 3/4) inches caliper, seven to nine (7-9) feet in height.

6. Minimum size for planting evergreen trees shall be six to eight (6-8) feet in height.
7. Caliper, height, and spread shall be generally as follows:

CALIPER	HEIGHT	SPREAD
2-2-1/2"	12'-14'	6'-8'
2-1/2"-3"	12'-14'	6'-8'
3"-3-1/2"	14'-16'	6'-8'
3-1/2"-4"	14'-16'	8'-10'
4"-4-1/2	16'-18'	8'-10'
4-1/2"-5"	16'-18'	10'-12'
5"-5-1/2"	18'-20'	10'-12'
5-1/2"-6"	18'-20'	12'-14'

All plant material shall generally average the median for the size ranges indicated above and as indicated in the ANLA Standards.

8. Minimum size for planting shrubs shall be, in general, eighteen to twenty-four (18-24) inches in height or spread, as appropriate, except that a larger size may be required when deemed appropriate by the planning director (or designee) in the case of particular species or planting situations.

e. Planting Methods

All proposed plant material that meets the specifications in Appendix 4, Section (A), Plant Materials, are to be planted in accordance with the following planting methods during the proper seasons as described below.

1. Planting Seasons

A professional horticulturists/nurseryman shall be consulted to determine the proper time, based on plant species and weather conditions, to move and install particular plant material to minimize stress to the plant. Planting of deciduous material may be continued during the winter months provided there is no frost on the ground and frost-free top soil planting mixtures are used.

2. Digging

All plant material shall be dug, balled, and burlapped or bare root in accordance with the American Standard for Nursery Stock, by AmericanHort.

3. Excavation of Plant Pits

The landscape contractor shall excavate all plant pits, vine pits, hedge trenches and shrub beds as follows:

A. All pits shall be generally circular in outline, with bowl shaped sides. The tree pit shall be deep enough to allow one-eighth (1/8) of the ball to be above the existing grade. Plants shall rest on undisturbed existing soil or well-compacted backfill. The tree pit must be a minimum of nine (9) inches larger on every side than the ball of the tree.
B. If areas are designated as shrub beds or hedge trenches, they shall be cultivated to at least an eighteen (18) inches in depth minimum. Areas designated for ground covers and vines shall be cultivated to at least twelve (12) inches in depth minimum.

APPENDICES

4. Staking, Guying, and Wrapping

   See the Landscape Specification Guidelines.

5. Plant Pruning, Edging, and Mulching

   A. Each tree, shrub, or vine shall be pruned in an appropriate manner to its particular requirements in accordance with accepted standard practices as stated in ANSI Standards A300 for pruning. Broken or bruised branches shall be removed with clean cuts made on an angle from the bark ridge to the branch collar, no flush cuts, to minimize the area cut. All cuts shall be made with sharp tools. Trim all edges smooth. No tree wound dressings shall be applied.

   B. All trenches and shrub beds shall be edged and cultivated to the lines shown on the drawing. The areas around isolated plants shall be edged and cultivated to the full diameter of the pit. Sod that has been removed and stacked shall be used to trim the edges of all excavated areas to the neat lines of the plant pit saucers, the edges of shrub areas, hedge trenches and vine pockets.

   C. After cultivation, all plant materials shall be mulched with a two to three (2-3) inch layer of tan bark, peat moss, or another approved material over the entire area of the bed or saucer.

f. Seeding and Sodding

   All seeding and sodding shall be as per 2011 Standards and Specifications for Soil Erosion and Sediment Control or the latest edition.

g. Top Soil

   Top soil shall be retained and/or provided on all sites and spread over all unimproved areas.

PLANTING DETAILS
Shall be in accordance with standard practices in the industry.

TREE PRESERVATION MEASURES
For more information on this subject, contact the Planning Department.

THIS PAGE IS INTENTIONALLY LEFT BLANK