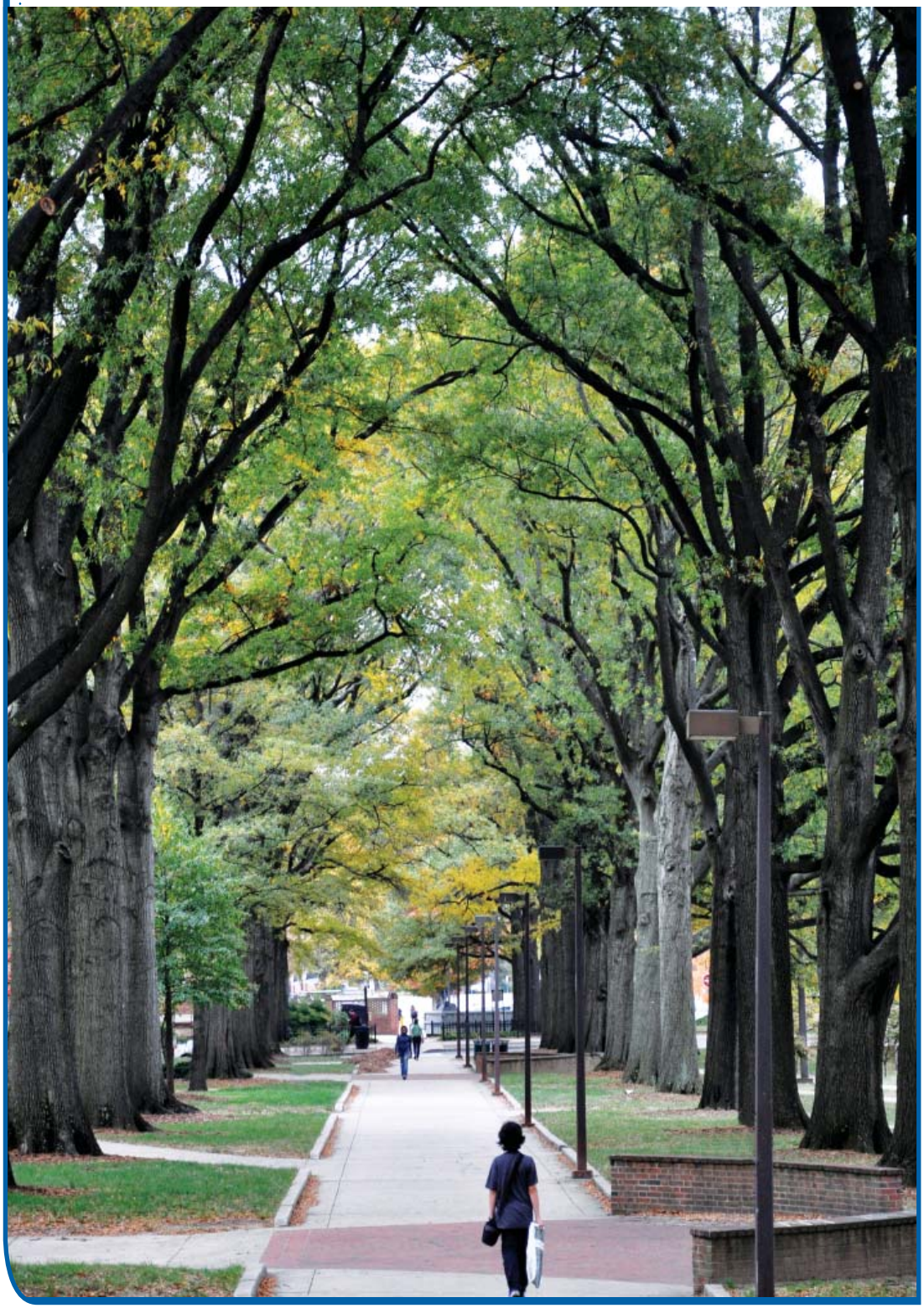
$7.00

PRINCE GEORGE'S COUNTY

LANDSCAPE MANUAL

DECEMBER 2010



The Maryland-National Capital Park and Planning Commission
www.pgplanning.org

Table of Contents

LIST OF FIGURES

LIST OF TABLES

SAMPLE SCHEDULES

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. Toward that end, the Landscape Manual set forth in one publication all of the regulations for landscaping, buffering, and screening that apply to public and private development in Prince George's County. It established minimum mandatory standards, articulated design guidelines, provided options that allow greater creativity and flexibility in design, and established 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. The Landscape Manual was further amended in 1992 by CB-30-1992 and CB-91-1992 and in 2008 by CB-29-2008.

2010 Comprehensive Update

The comprehensive update to the Landscape Manual ("updated manual") is intended to set a new standard of excellence in the design, sustainability, and quality of landscaping in the county and to generate aesthetic, economic, environmental, and health benefits for the county's residents, businesses, and visitors.

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.

These benefits are accomplished through the updated manual by maintaining existing regulations that create more attractively landscaped outdoor spaces, creating a greater sense of continuity within individual developments, and allowing smoother visual transitions from one development to another. It also includes revised regulations requiring improved buffers between incompatible land uses that will reduce negative impacts of more-intensive uses on less-intensive, adjacent uses. Revised parking lot requirements will result in more shade, reduced glare and heat build-up, and less visual monotony created by large expanses of pavement and parked cars. Revised regulations for buffering all types of development from streets and special roadways will improve the view of developments. Additionally, new regulations have been added regarding standards for private streets and sustainable landscaping techniques, such as ways to use plants to lessen the harsh effect of the summer sun, provide protection from winter winds, create barriers from unwanted noise, help filter and purify water, prevent soil erosion, and contribute to cleaner air.

The updated manual also contains standards specific to the tier in which a property is located based on the *Prince George's County Approved General Plan* ("the General Plan"). In October 2002, the Prince George's County Council approved the plan to provide long-range guidance for the future growth of the county. The plan established three development tiers that correspond to the different development patterns in the county and specify their desired levels and forms of development. Within the Developed and Developing Tiers, the plan designates centers and corridors within which more intense development is encouraged to capitalize on existing public investments in infrastructure, such as transportation facilities. The plan also introduced the concept of a corridor node—a concentrated, higher-intensity, mixed-use location within one-quarter mile of a major intersection or major transit stop along a designated corridor—to be developed in a pedestrian-oriented form. Specific corridor nodes are identified in the adopted sector and master plan processes. This updated manual recognizes this range of development patterns and establishes standards designed to address the tiers', centers', and corridor nodes' unique constraints and opportunities and to help implement the visions set forth in the plan.

Contents

Section 1, General Information and Procedures, of the updated manual 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 plans in Prince George's County, including conformance to the General Plan, the importance of preserving existing trees, and, where appropriate, 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, buffering development from streets, buffering incompatible uses, sustainable landscaping techniques, and standards for street trees along private streets.

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

Additional Requirements

Any land located in the Chesapeake Bay critical area within Prince George's County is subject to the requirements of this updated manual and the applicable provisions of the *Conservation Manual for the Chesapeake Bay Critical Area*, adopted by the Prince George's County Council on November 17, 1987. 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 (1983).

Questions about interpretation or use of the updated manual should be directed to the Urban Design Section of the Development Review Division of M-NCPPC.

SECTION 1 - GENERAL INFORMATION AND PROCEDURES

1.1 Applicability

(a) All public, private, and institutional development shall comply with the standards in this manual, except as provided below, and as specifically exempt elsewhere in this manual and in Section 27-121 of the Zoning Ordinance.

(b) Existing conditions on developed sites not in conformance with the requirements of this manual that were otherwise lawful on December 13, 2010, and not the subject of any building or grading permit, may continue as a matter of right.

(c) 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 a Departure from Design Standards application pursuant to Section 27-587 of the Zoning Ordinance.

(d) 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 (as defined in Table 4.7-1, Use Impact Categories), 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, and 4.10.

(e) In addition to permits exempt as stated in 1.1(d), the following are exempt from the requirements of Section 4.1, Residential Requirements:

(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.

(f) Building and grading permits are subject to Section 4.2, Requirements for Landscape Strips Along Streets, except as stated in 1.1(d) and except for the following exemptions:

(1) Building and grading permits for a building expansion are exempt from the requirements of Section 4.2 when they involve a cumulative increase in GFA of less 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) Building and grading permits for a property that is subject to a required build-to line established by a sector plan or the underlying zone that precludes the provision of a landscape strip are exempt from the requirements of Section 4.2 for that portion of the street frontage where the building is located. In such a case, a landscape strip shall be provided only for that portion of the property where a building is not adjacent to the street.

(3) 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.

(g) 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 renovation, expansion, or change of use that does not necessitate an increase in the number of parking or loading spaces beyond the number currently existing. When a building or site renovation, expansion, or change of use results in the creation of additional impervious area, the entire parking facility associated with the property shall be subject to Section 4.3.

(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 integrated shopping centers, office parks, and restaurant 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.

(h) 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.

(i) 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 lower- to higher-intensity use category as defined in Table 4.7-1, Use Impact Categories, or from a residential to a nonresidential use.

(j) 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 Private Streets, except as stated in 1.1(d) and except for the following:

(1) Access easement authorized pursuant to Sections 24-128(b)(1), (3), (11) and 24-152(j)(2) serving four (4) or fewer lots; or

(2) Alleys as defined by Subtitle 27 or Subtitle 24.

(k) The temporary uses listed in Section 27-261 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.

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

(m) In the Mixed-Use Town Center Zone, landscaping and screening shall be provided in accordance with the approved town center development plan.

(n) Section 4.3(c) of the Landscape Manual shall not be applicable to arenas (stadiums). However, landscaping in the interior parking lot area of a stadium shall be provided along all major vehicular access driveways. In addition, the District Council shall determine the

type and amount of landscaping required during the approval of any specific design plan for an arena (stadium).

1.2 Approval Processes

(a) A landscape plan is a required element of all detailed site plans (Zoning Ordinance, Section 27-282(e)(15)) and all specific design plans (Section 27-527(b)(3)) 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 Part 3, Division 7, 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. 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 (or designee) 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 (or designee) 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 (or designee) 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 (or designee), equally effective as normal compliance, then the applicant may seek relief by applying for a Departure from Design Standards in accordance with the provisions of Section 27-239.01 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 or lack of plant availability 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.

(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 supervisor of the Urban Design Section 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 Urban Design Section 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 Urban Design Section 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 Urban Design Section will inform the applicant of procedures necessary to formally revise the plan.

1.5 Certification of Installation of Plant Materials

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 Environmental Resources or the Department of Public Works and Transportation (DPW&T) (whichever is appropriate) stating that healthy plant materials were 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 (or designee), 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.

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 4.10 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.

SECTION 2 - PLAN PREPARATION

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) 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 (or designee). 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.

(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.

SECTION 3 - LANDSCAPE ELEMENTS AND DESIGN CRITERIA

In a well-designed landscape plan, plants are carefully selected and arranged to perform a 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 Functions

(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) Delineate 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.

(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 for a planting design. 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 space 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. In developing

areas, street trees will 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 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, 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 massing of shrubbery 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.

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; and environmental settings for historic sites.

(a) Development Patterns Based on the General Plan

Two important landscape design considerations are the existing development pattern of and 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) to rural (mainly located in the far southern and eastern areas of the county). 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.

The plan established and delineated three tiers that correspond to the different development patterns in the county and to their desired levels and forms of development. A list of tiers follows, along with a brief description of the location and character of each:

Developed Tier—Located between the county's boundary with the District of Columbia and the Capital Beltway, the Developed Tier is the most densely populated and built out part of the county and contains most of the pedestrian, bicycle, and transit system capacity. The vision for the Developed Tier is a network of sustainable, transit-supporting, mixed-use, pedestrian-oriented, medium- to high-density neighborhoods.

Developing Tier—The Developing Tier encompasses the middle section of the county, which has been most subject to recent suburban expansion. It is an evolving pattern of farms, residential subdivisions, employment parks, and automobile-oriented commercial centers. The vision for the Developing Tier is to maintain a pattern of low- to moderate-density suburban residential communities, distinct commercial centers, and employment areas that are increasingly transit serviceable.

Centers and Corridor Nodes—Within the Developed and Developing Tiers, the plan designates centers and corridors within which more intense development is encouraged to capitalize on existing public investments in transportation facilities. The vision for the centers and corridors is mixed-residential and nonresidential uses at moderate to high densities and intensities, with a strong emphasis on pedestrian- and transit-oriented development. A Corridor Node is a concentrated, higher-intensity, mixed-use location within a one-quarter mile of a major intersection or major transit stop along a designated corridor to be developed in a pedestrian-oriented form. Specific corridor nodes are identified through the sector and master plan processes.

Rural Tier—The Rural Tier comprises 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, the Rural Tier is the most scenic part of the county. The vision for the Rural Tier is to protect large amounts of woodland and wildlife habitat, encourage recreation and agricultural pursuits, and preserve the rural character and vistas.

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 the plan.

(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 native plants that have adapted to the area's growing conditions, soil, and climate typically requires less maintenance and supports local wildlife.

(4) Using buffer plantings to create wind screens, wildlife habitats, and for protection of less hardy plants.

(5) Reducing 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, brick walkways, cobblestones, and decks.

(9) Mixing species in a massed planting encourages natural predators and provides nectar sources throughout the year.

(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 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. Smaller trees 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.

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 Conservation and Wildlife Habitat 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 Conservation and Wildlife Habitat Ordinance*, which was enacted in September 2010.

This manual encourages the retention of existing trees to fulfill landscaping requirements. Trees within areas that are protected woodland conservation areas 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 simulate natural stands 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.

(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 once every ten (10) or so spaces. 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.

SECTION 4 - LANDSCAPE STANDARDS

4.1 Residential Requirements

(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 landscaping for energy conservation.

(3) Create privacy by buffering residential structures from each other.

(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.

(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 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.

(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 structures 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 Section 3.5(c), Landscaping for Energy Conservation).

(c) Requirements

(1) One-Family Detached

All residential development shall comply with the following standards:

(A) All one-family detached lots that are forty thousand (40,000) square feet or larger 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) 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.

(iii) 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 energy conservation requirement in 4.1(c)(1)(A)(ii), if located in accordance with such requirement.

(B) All one-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) 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.

(iii) 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 energy conservation requirement in 4.1(c)(1)(B)(ii), if located in accordance with such requirement.

(C) All one-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) 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.

(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. This shade tree may also count toward fulfillment of the landscaping for energy conservation requirement in 4.1(c)(1)(C)(ii), if located in accordance with such requirement.

(D) All one-family detached lots that are smaller 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) 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.

(E) 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.

(F) 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, and Three-Family Dwellings Arranged Horizontally

(A) Plant a minimum of one and one-half (1.5) 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) 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 and Three-Family dwellings Arranged Vertically

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

(4) Multifamily Dwellings

(A) For multifamily dwellings located in the Developing and Rural Tiers, plant a minimum of one (1) major shade tree per one thousand, six hundred (1,600) square feet or fraction of green area provided.

(B) For multifamily dwellings located in the Developed Tier and/or Corridor Nodes or Centers, plant a minimum of one (1) major shade tree per one thousand (1,000) square feet or fraction of green area provided.

(C) 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, 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.

(D) Up to one-quarter (1/4) of the number of required shade trees may be substituted on a two-to-one (2:1) basis by the use of ornamental or evergreen trees.

(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.

Table 4.1-1

On-Site Residential Planting Requirements

Residential Type	Minimum number of Shade Trees	Minimum number of Ornamental or Evergreen Trees	Notes
One-Family Detached Lots 40,000 sq. ft. or larger	4 per lot	3 per lot	
One-Family Detached Lots 20,000–39,999 sq. ft.	4 per lot	3 per lot	
One-Family Detached Lots 9,500–19,999 sq. ft.	3 per lot	2 per lot	
One-Family Detached Lots smaller than 9,500 sq. ft.	2 per lot	2 per lot	
Townhouses, One-Family Semi-Detached, Two-Family, Three-Family Arranged Horizontally	1.5 per dwelling	1 per dwelling	Total number of trees to be located on lots and/or in common open space
Two-Family, Three-Family Arranged Vertically	2 per building	1.5 per building	Total number of trees to be located on lots and/or in common open space
Multifamily Dwellings Located in the Developing and Rural Tiers	1 per 1,600 sq. ft. or fraction of green area		See Section 4.1(c)(4) for explanation of green area and permissible plant substitutions
Multifamily Dwellings Located in the Developed Tier and/or Corridor Nodes or Centers	1 per 1,000 sq. ft. or fraction of green area		See Section 4.1(c)(4) for explanation of green area and permissible plant substitutions

(d) Demonstrating Compliance

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

Sample Schedule 4.1-1

Residential Requirements for One-Family Detached Lots

1)	Lot size range:	_____square feet
2)	Number of lots:	_____lots
3)	Total number of trees required per lot:	_____shade trees _____ornamental/evergreen trees
4)	Total number of trees provided:	_____shade trees _____ornamental trees _____evergreen trees _____existing shade trees (min. 2.5 inches dbh and located within 75 feet of a dwelling unit)
5)	Number of shade trees required per lot to be located on the south and/or west side of the residential structure:	_____shade trees
6)	Total number of shade trees provided on the south and/or west side of structures*:	_____shade trees
7)	Number of trees required per lot to be located in the front yard:	_____shade trees _____ornamental/evergreen trees
8)	Total number of trees provided in front yards*:	_____shade trees _____ornamental/evergreen trees

*Shade trees planted on the south and/or west side and within 30 feet of a residential structure, which are also located in the front yard may, be counted in both six and eight above.

Sample Schedule 4.1-2

Residential Requirements for Townhouses, One-Family Semi-Detached, and Two-Family Dwellings Arranged Horizontally:

1)	Number of dwelling units:	_____units
2)	Number of trees required per dwelling unit:	__1.5__ shade trees
		__1__ ornamental/evergreen trees
3)	Total number of trees required:	_____shade trees
		_____ornamental/evergreen trees
4)	Total number of trees provided:	_____shade trees
	(on individual lots and/or in common open space)	_____ornamental trees
		_____evergreen trees
		_____existing shade trees (min. 2.5 inches dbh and located within 75 feet of a dwelling unit)

Sample Schedule 4.1-3

Residential Requirements for Two-Family and Three-Family Dwellings Arranged Vertically

1)	Number of buildings:	_____buildings
2)	Number of trees required per building:	__2__ shade trees
		__1.5__ ornamental/evergreen trees
3)	Total number of trees provided:	_____shade trees
	(in common open space)	_____ornamental trees
		_____evergreen trees
		_____existing shade trees (min. 2.5 inches dbh and located within 75 feet of a dwelling unit)

Sample Schedule for Section 4.1-4

Residential Requirements for Multifamily

1)	General Plan designation:	_____Rural or Developing Tier (1 shade tree per 1,600 square feet of green space provided) _____Developed Tier and/or Corridor Node or Center (1 shade tree per 1,000 square feet of green space provided)
2)	Green space provided:	_____square feet
3)	Number of shade trees required:	_____shade trees
4)	Total number of trees provided:	_____shade trees _____ornamental trees _____evergreen trees (ornamental and evergreen trees may be substituted for shade trees at a rate of 2:1, not to exceed 25% of total shade tree requirement) _____existing shade trees (min. 2.5 inches dbh and located within green area but outside of floodplain)

4.2 Requirements for Landscape Strips Along Streets

(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.

(b) Design Guidelines

(1) The landscape strip should not include any paved area, except pedestrian sidewalks or trails that cross the landscape strip.

(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 the 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)(2), Buffering Development from Special Roadways, supersede the requirements of this section.

(2) For all nonresidential uses in any zone and for all parking lots, a landscape strip, as described in Section 4.2(c)(3)-(5), shall be provided on the property abutting all public and private streets. The landscape strip may not include any paved area except pedestrian sidewalks or trails that cross the landscape strip.

(3) Developing Tier, Developed Tier, Centers and Corridor Nodes

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

(i) Option 1-Provide a minimum ten (10) foot wide landscape strip to be planted with a minimum of one (1) shade tree and ten (10) shrubs per thirty-five (35) linear feet of frontage, excluding driveway openings (see Figure 4.2-1); or

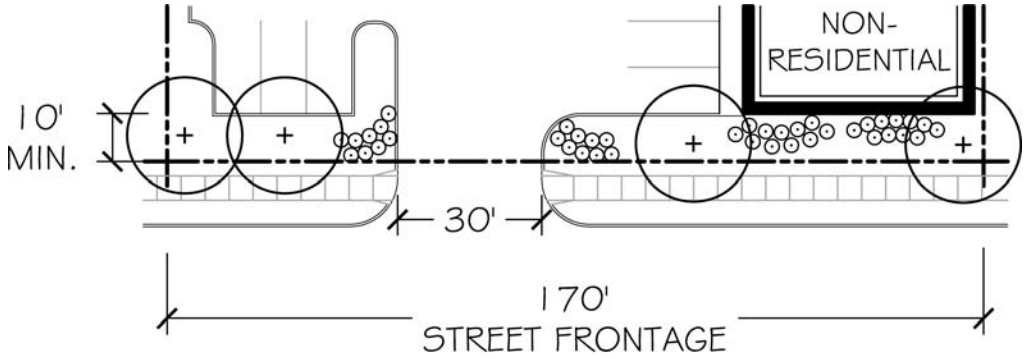


Figure 4.2-1 Developing Tier, Developed Tier, Centers and Corridor Nodes—Option 1

(ii) Option 2-Provide a landscape strip that is a minimum of ten (10) feet wide and has an average width of at least fifteen (15) feet. Provide planting within the strip at the rate of one (1) shade tree

and five (5) shrubs per thirty-five (35) linear feet of frontage excluding driveway openings (see Figure 4.2-2); or

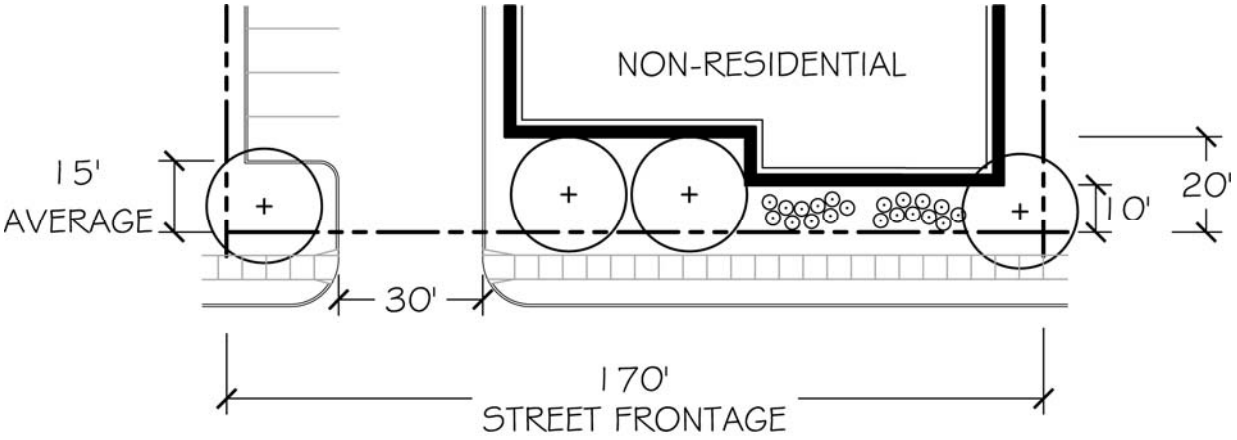


Figure 4.2-2 Developing Tier, Developed Tier, Centers and Corridor Nodes—Option 2

(iii) Option 3-Provide a minimum twenty-five (25) foot wide strip of noninvasive existing trees. (see Figure 4.2-3); or

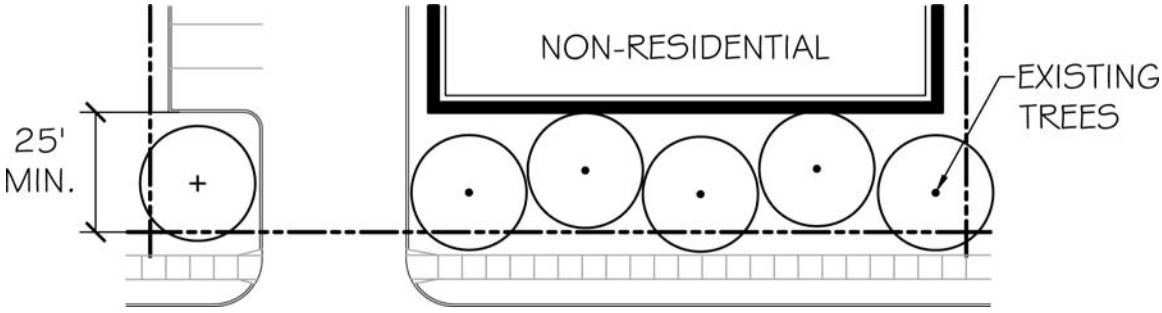


Figure 4.2-3 Developing Tier, Developed Tier, Centers and Corridor Nodes—Option 3, Rural Tier—Option 2

(iv) Option 4-Provide a minimum four (4) foot wide landscape strip abutting the street adjacent to three (3) to four (4) foot high brick, stone, or finished stamped concrete masonry wall. The wall shall be located adjacent to, but entirely outside, the four (4) foot wide landscape strip. Provide planting within the strip at the

rate of one (1) shade tree per thirty-five (35) linear feet of frontage, excluding driveway openings (see Figure 4.2-4).

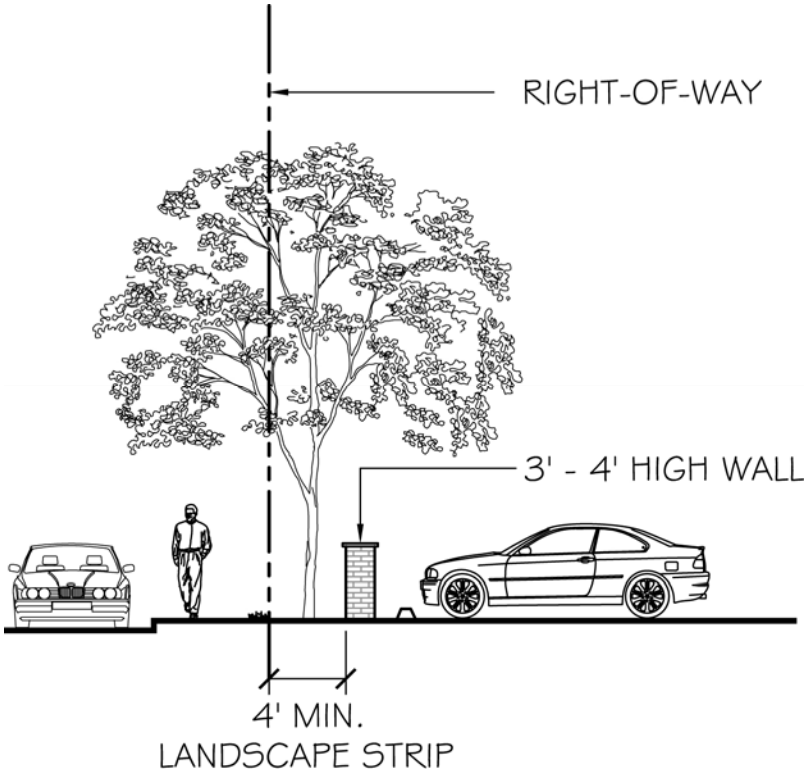


Figure 4.2-4 Developing Tier, Developed Tier, Centers and Corridor Nodes—Option 4

(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 the 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.

(4) Rural Tier

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

(i) Option 1-Provide a minimum twenty (20) foot wide landscape strip to be planted with a minimum of one (1) shade tree and ten (10) shrubs per thirty-five (35) linear feet of frontage, excluding driveway openings (see Figure 4.2-5). If a public utility easement is proposed or exists along the street frontage, then plant materials shall be placed outside the public utility easement.

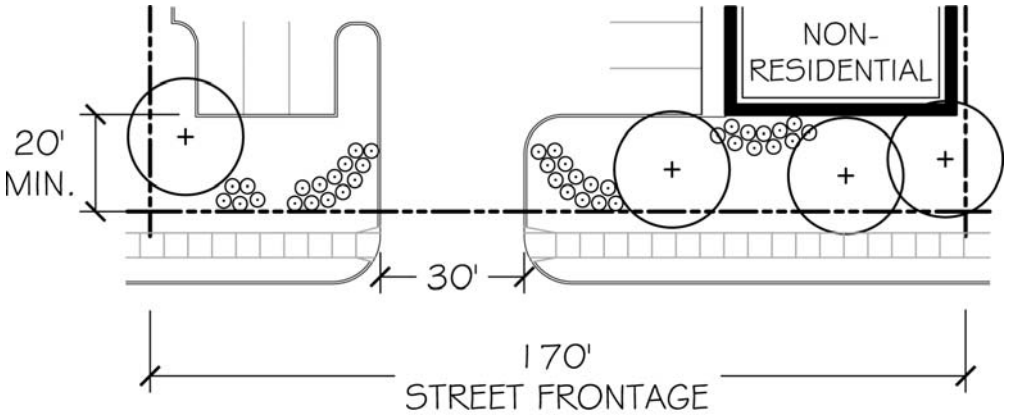


Figure 4.2-5 Required Landscape Strip: Rural Tier—Option 1

(ii) Option 2-Provide a minimum twenty-five (25) foot wide strip of noninvasive existing trees (see Figure 4.2-3).

(5) I-3 Zone

(A) If a property is located in the I-3 Zone, the width of the required landscape strip shall be as required by Section 27-474 of the Zoning Ordinance. The plant materials proposed within the landscape strip shall be shown on a detailed site plan approved by the Planning Board in accordance with

Section 27-471(d) of the Zoning Ordinance but shall not be less in quantity than required by Section 4.2(c)(3)(A)(i).

(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

Linear feet of street frontage, excluding driveway entrances**:**

1)	General Plan Designation:	_____Developing Tier _____Developed Tier, Corridor Node or Center	_____Rural Tier
2)	Option Selected:	1, 2, 3, or 4:_____	1 or 2: _____
3)	Is there a public utility easement along the frontage of the property?	_____Yes	_____No
4)	Number of plants required:	_____shade trees _____shrubs _____25-foot-wide strip of existing trees	_____shade trees _____shrubs _____25-foot-wide strip of existing trees
5)	Total number of trees provided:	_____shade trees _____ornamental/evergreen _____trees _____shrubs _____25-foot-wide strip of existing trees	_____shade trees _____ornamental/evergreen _____trees _____shrubs _____25-foot-wide strip of existing trees

4.3 Parking Lot Requirements

(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 travel-ways 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, except those provided for, and on the same lot with, one-family dwellings.

(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).

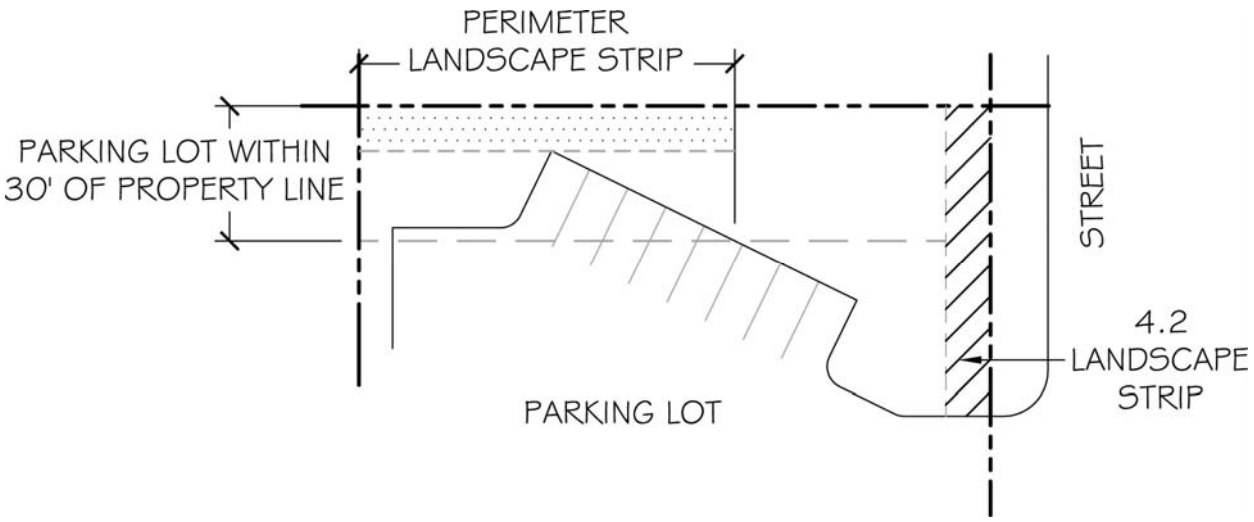


Figure 4.3-1 Parking Lot Within 30 Feet of Property Line

(C) Developed Tier, Corridor Nodes and Centers:

(i) Option 1-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 hedge (see Figure 4.3-2); or

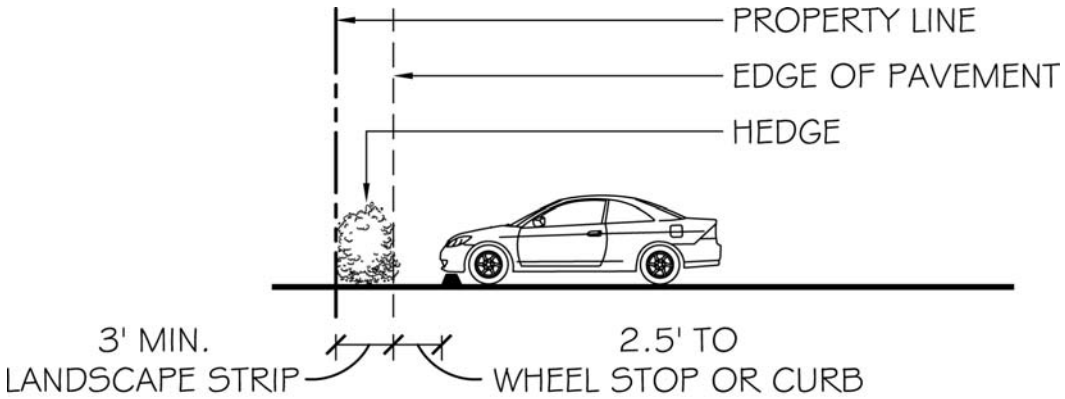


Figure 4.3-2 Developing Tier, Developed Tier, Centers and Corridor Nodes—Option 1

(ii) Option 2-Provide a minimum three (3) foot wide landscape strip between the parking lot and any adjacent property line with a three (3) to four (4) foot high masonry wall (see Figure 4.3-3); or

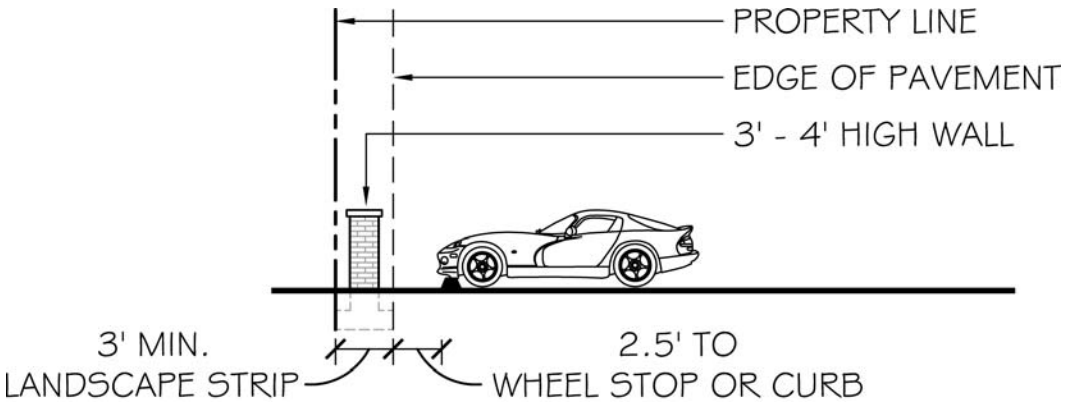


Figure 4.3-3 Developing Tier, Developed Tier, Centers and Corridor Nodes—Option 2

(iii) Option 3-Provide a perimeter landscape strip in accordance with the requirements for the Developing Tier, as stated in Section 4.3(c)(1)(D)(i)-(ii).

(D) Developing Tier

(i) Option 1-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 three (3) 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.) 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

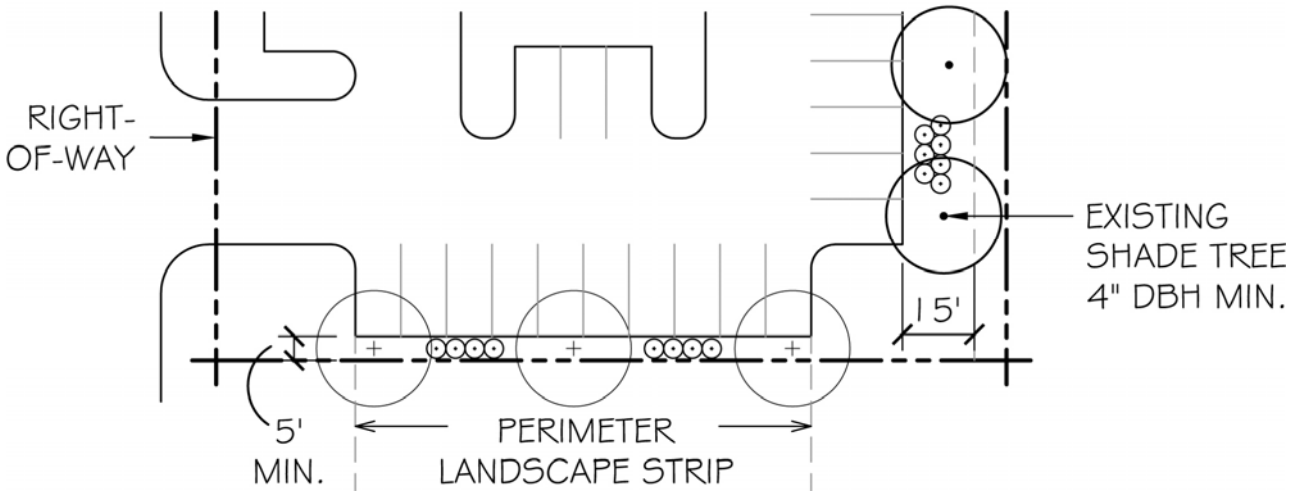


Figure 4.3-4 Developing Tier—Option 1

(ii) Option 2-Provide a minimum twenty-five (25) foot wide strip of noninvasive existing trees (see Figure 4.3-5).

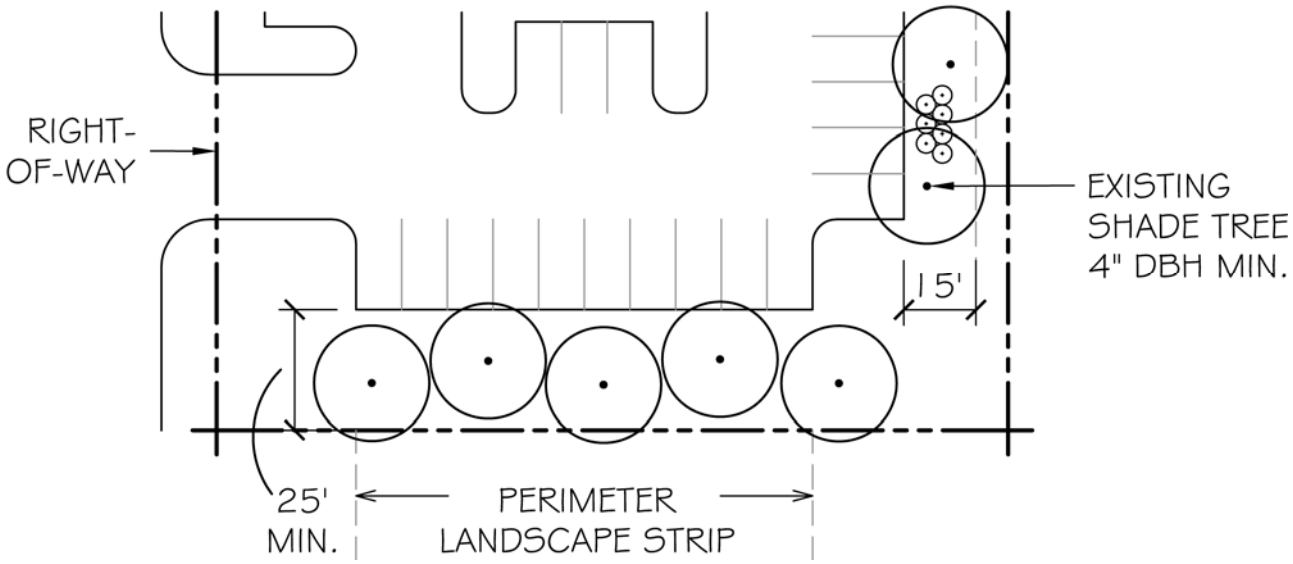


Figure 4.3-5 Developing Tier—Option 2

(E) Rural Tier:

(i) Option 1-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 five (5) 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.) 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); or

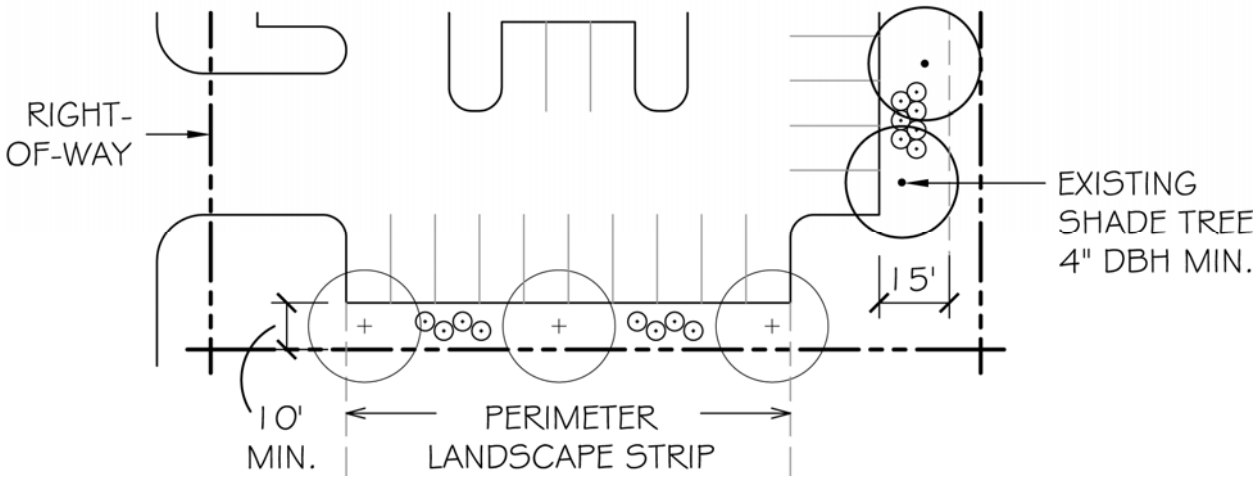


Figure 4.3-6 Rural Tier—Option 1

(ii) Option 2-Provide a minimum twenty-five (25) foot wide strip of existing noninvasive trees between the parking lot and any adjacent property line (see Figure 4.3-5).

(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).

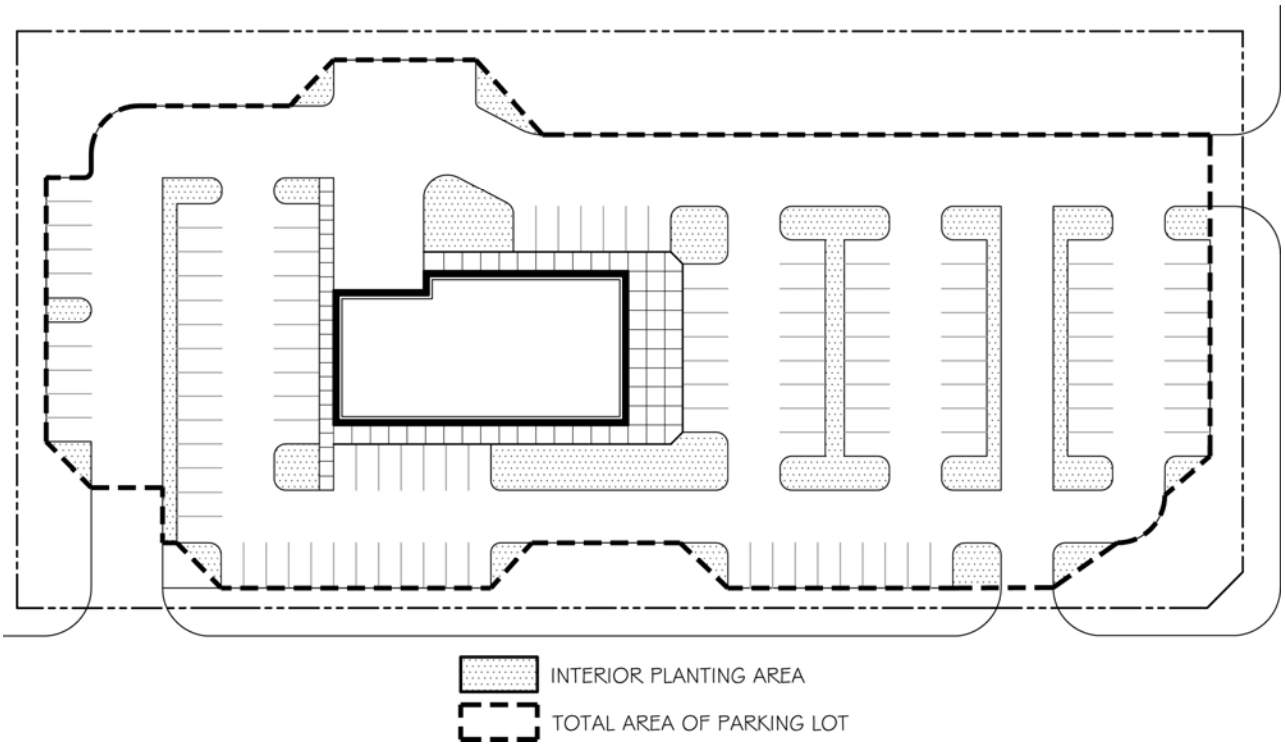


Figure 4.3-7 Parking Lot Area

Table 4.3-1

Parking Lot Interior Planting Requirements

Parking Lot Area	Percent of Interior Planting Area Required
0–6,999 square feet	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

(B) 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 six (6) feet above finished grade level.

(C) 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.

(D) 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).

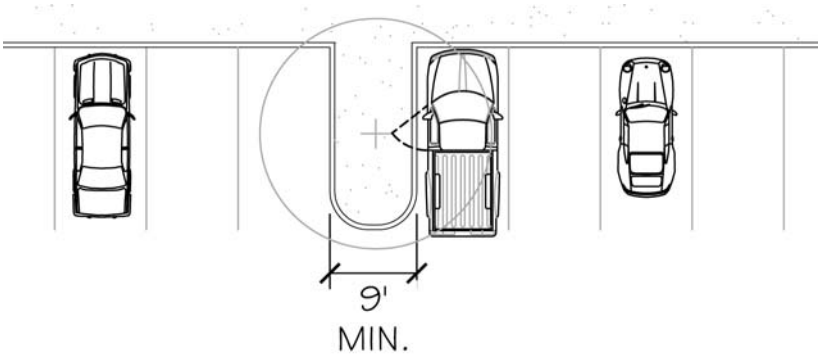


Figure 4.3-8 Minimum Width of Landscape Island Parallel to Spaces (parking on both sides)

(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).

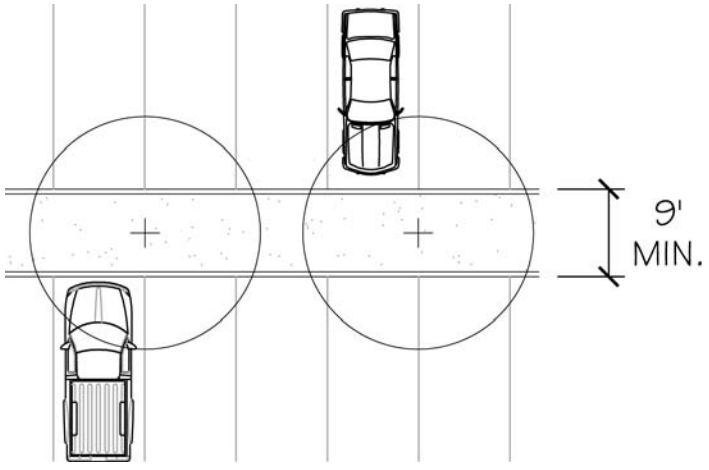


Figure 4.3-9 Minimum Width of Landscape Island Perpendicular to Spaces (parking on both sides)

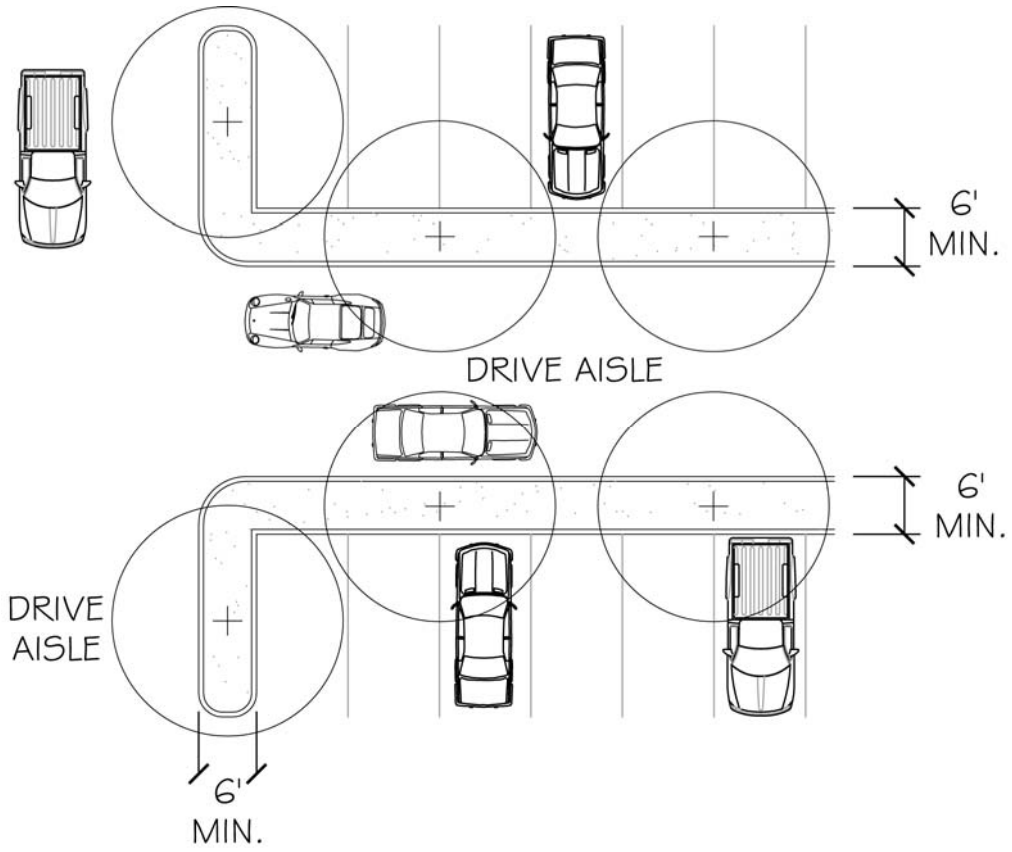


Figure 4.3-10 Minimum Width of Landscape Island Perpendicular to Spaces
(parking on one side)

(E) 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 (or designee).

(F) Main drive aisles shall be separated from abutting parking spaces by a minimum six (6) foot wide interior planting area.

(G) A minimum of one (1) interior planting island shall be provided on average for every ten (10) contiguous spaces (see Figure 4.3-11).

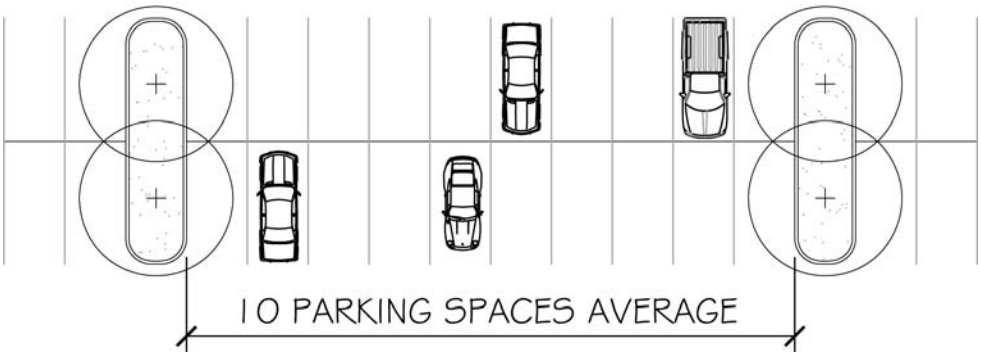


Figure 4.3-11 Minimum Number of Planting Islands

(H) The following requirements shall only apply to parking lots more than fifty thousand (50,000) square feet in area:

(i) Option 1-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 4.3-12); or

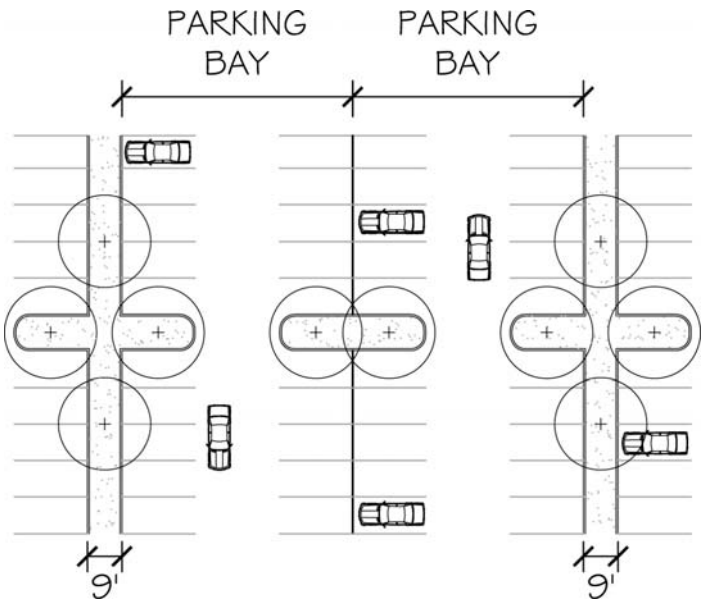


Figure 4.3-12 Parking Bay Separation

(ii) Option 2-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 six (6) feet above finished grade level.

(d) Demonstrating Compliance

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

Sample Schedule 4.3-1
Parking Lot Perimeter Landscape Strip for
Parking Lots 7,000 Square Feet or Larger

Linear feet of parking lot perimeter adjacent to property line**:**

1)	General Plan designation:	_____Developed Tier, Corridor Node or Center	_____Developing Tier	_____Rural Tier
2)	Option selected:	1, 2, or 3:_____	1 or 2:_____	1 or 2:_____
3)	Width of perimeter strip required:	_____feet	_____feet	_____feet
4)	Width of perimeter strip provided:	_____feet	_____feet	_____feet
5)	Plant material required:	_____shade trees _____shrubs	_____shade trees _____shrubs	_____shade trees _____shrubs
6)	Total plant material provided:	_____shade trees _____shrubs _____existing shade trees	_____shade trees _____shrubs _____existing shade trees	_____shade trees _____shrubs _____existing shade trees

Sample Schedule 4.3-2

Interior Planting for Parking Lots 7,000 Square Feet or Larger

1)	Parking Lot Area (see Figure 4.3-7):		_____square feet
2)	Interior landscaped area required:	_____%	_____square feet
3)	Interior landscaped area provided:	_____%	_____square feet
4)	Minimum number of shade trees required:		
	(1 per 300 square feet of interior planting area provided)		_____shade trees
	or		
	(1 per 200 square feet of interior planting area provided)		_____shade trees
5)	Number of shade trees provided:		_____shade trees
6)	Is a minimum of 160 square feet of contiguous pervious land area provided per shade tree?		_____yes _____no
7)	Is there a planting island on average every 10 spaces?		_____yes _____no
8)	Is a curb or wheel stop provided for all parking spaces abutting a planting or pedestrian area?		_____yes _____no
9)	Are planting islands that are either parallel or perpendicular to parking spaces on both sides a minimum of 9 feet wide?		_____yes _____no
10)	Is a planting island that is perpendicular to parking spaces on one side a minimum of 6 feet wide?		_____yes _____no
11)	For parking lots 50,000 square feet or larger:		
	a) Is there a 9-foot-wide planting island perpendicular to parking for every 2 bays?		_____yes _____no
	or		
	b) Is the number of shade trees required increased? (1 per 200 square feet of interior planting area provided)		_____yes _____no

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 appropriate hearing authority (or designee) 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

(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 uses, land in any residential zone, or land proposed to be used for residential purposes on an approved basic plan, approved official plan, or any approved conceptual,

detailed, or special exception site plan. Loading spaces, loading docks, and maintenance 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; 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); or

(D) A combination of the above options.

(3) Outdoor Merchandise Storage

Outdoor merchandise 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 basic plan, approved official plan, or any approved conceptual, detailed, or special exception site plan. Loading spaces, loading docks, and maintenance 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; 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); 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, warehouse and distribution, or resource recovery uses are permitted; from all public roads, if located within a residential development; 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:

(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) An extension of a building.

(5) Mechanical Equipment

All mechanical equipment and meters (except for public utility transformers; electric and other meters attached to single-family dwelling units; and heat pumps or air conditioners for single-family dwellings, unless placed in a group of three or more) shall be screened from all adjacent properties, except for those properties on

which industrial, warehouse and distribution, or resource recovery uses are permitted; from all adjacent dedicated public roads, if located within a residential development; 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.

(6) Vehicle-Related Uses

All vehicle repair facilities, vehicle towing stations, and vehicle storage yards, notwithstanding the 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 basic plan, official plan, or any approved conceptual, detailed, or special exception site plan.

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); 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

Requirements for the landscaping of stormwater management facilities are generally established by the Department of Public Works and Transportation (DPW&T) or by those municipalities with stormwater management authority. The DPW&T requirements may be found in the *Storm Drainage and Stormwater Management Design Manual for Prince George's County* or any subsequent revision thereof.

DPW&T 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 DPW&T. Landscape plans for stormwater management facilities shall be reviewed and approved by the appropriate authority concurrently and in association with the regulatory plan review.

4.6 Buffering Development from Streets

(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 attached or 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 and enhance the scenic and/or historic landscape qualities 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.

(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.

(c) Requirements

(1) Buffering Residential Development from Streets

(A) When the rear yards of single-family attached or detached dwellings in any zone are oriented toward a street, a buffer area shall be provided between the development and the street, either on individual lots or 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

(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

*One-half (1/2) 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 (not to exceed one-fourth (1/4) of the required number of shade 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. All plant material required for this 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) 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) Freeway or Expressway

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

*One-half (1/2) 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 (not to exceed one-fourth (1/4) of the required number of shade trees).

(C) 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 percentage of the area of the buffer occupied by existing vegetation. Any invasive species should be removed from the buffer area.

(D) 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%).

(2) 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), 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) Developed Tier-Designated historic roads, designated scenic roads, 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) Developing Tier-Designated historic roads, designated scenic roads, the Maryland State-designated scenic byway, and the Suitland and Baltimore-Washington Parkways

A minimum twenty (20) foot wide buffer to be planted with a minimum of eighty (80) plant units per one hundred (100) linear feet of frontage, excluding driveway openings.

(iii) Rural Tier-Designated historic roads, designated scenic roads, the Maryland State-designated scenic byway, and the Suitland and Baltimore-Washington Parkways

A minimum forty (40) foot wide buffer to be planted with a minimum of one hundred sixty (160) plant units per one hundred (100) linear feet of frontage, excluding driveways, for high impact uses only. The buffering and planting requirements for all other uses shall be a minimum forty (40) foot wide buffer to be planted with a minimum of eighty (80) plant units. 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 noninvasive 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 percentage of the area of the buffer occupied by existing vegetation. Any invasive species should be removed from the buffer area.

(C) The buffering and planting requirements of Section 4.6(c)(2)(iii) may be reduced if viewshed studies indicate, at the time of a detailed site plan, specific design plan, or special exception (or if none of these are required, 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.

Sample Schedule 4.6-1

Buffering Residential Development from Streets

1)	Name of street adjacent to rear yard:_____		
2)	Type of street adjacent to rear yard: _____		
3)	Linear feet of street frontage toward which rear yard is oriented, not including driveway openings:		_____feet
4)	Minimum width of required buffer:		_____feet
5)	Minimum width of provided buffer:		_____feet
6)	Percentage of required buffer strip occupied by existing trees:		_____%
7)	Invasive species in the buffer area?		_____yes _____no
8)	Six (6) foot high fence or wall included in bufferyard?		_____yes _____no
9)	Number of plants required:	_____shade trees	
		_____evergreen trees	
		_____shrubs	
10)	Total number of plants provided:	_____shade trees	
		_____evergreen trees	
		_____shrubs	

Sample Schedule 4.6-2

Buffering Development from Special Roadways

1)	Name of special roadway: _____	
2)	Type of special roadway: _____	
3)	General Plan designation:	_____Developed Tier _____Developing Tier _____Rural Tier
4)	Linear feet of street frontage, not including driveway entrances:	_____feet
5)	Minimum width of required buffer:	_____feet
6)	Minimum width of provided buffer:	_____feet
7)	Percentage of required buffer occupied by existing trees:	_____%
8)	Invasive species in the buffer areas?	_____yes _____no
9)	Number of plants required:	_____shade trees _____evergreen trees _____shrubs
10)	Total number of plants provided:	_____shade trees _____evergreen trees _____shrubs

4.7 Buffering Incompatible Uses

(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 bufferyards, 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

If the adjoining property is neither vacant (see Section 4.7(c)(5)), a nonconforming use (see Section 4.7(c)(6)), nor a historic site (see Section 4.7(c)(7)), 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, Use Impact Categories. Note whether the use is assigned High (H), Medium (M), or Low Impact (L).

(2) Locate the adjoining use in Table 4.7-1, Use Impact Categories. Note whether the use is assigned High (H), Medium (M), or Low Impact (L) and whether the proposed and adjacent uses are considered compatible based on the use group. If a developing lot adjoins a vacant lot, see Section 4.7(c)(5). A lot is considered vacant if it contains no structure or vehicle surface area within two hundred (200) feet of the property line. 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)(7).

(A) The assignment of each use as high, medium, or low impact, as indicated in Table 4.7-1, Use Impact Categories, is based on whether the use typically involves one or more of the following:

(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, 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.

(B) A High-Impact Use, signified by "H" in Table 4.7-1, Use Impact Categories, is one which, considering the criteria, is expected to have a strong effect on adjacent properties.

(C) A Medium-Impact Use, signified by "M" in Table 4.7-1, Use Impact Categories, is one which, considering the criteria, is expected to have a moderate effect on adjacent properties.

(D) A Low-Impact Use, signified by "L" in Table 4.7-1, Use Impact Categories, is one which, considering the criteria, is expected to have a limited effect on adjacent properties.

(E) When a specific use is not identified in Table 4.7-1, Use Impact Categories, the most similar use shall be used. Interpretations relating to impact categories shall be made by the planning director, or the designee, whose decision shall be appealable to the Planning Board.

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

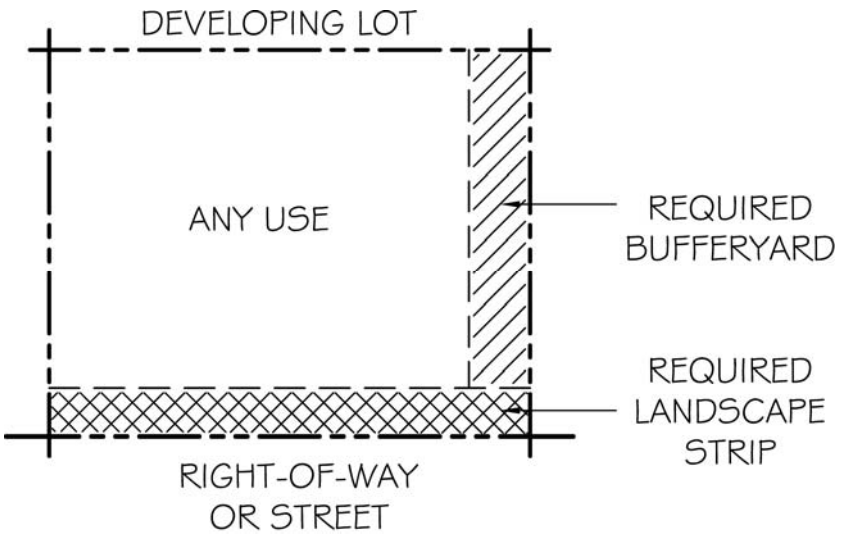


Figure 4.7-1 Relationship of Bufferyards and Landscape Strips

(G) 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).

(H) For applications proposing horizontally arranged mixed-use under a unified development scheme on a single lot or multiple lots, the impact category for the use nearest a property line shall determine the buffering requirements for that yard (see Figure 4.7-2).

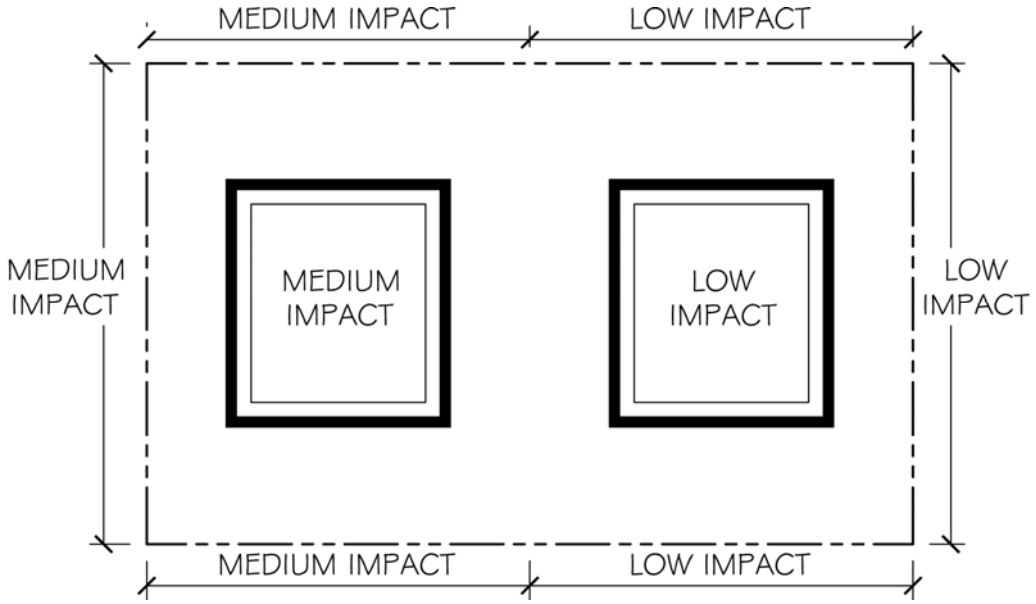


Figure 4.7-2 Use Determination for Horizontally Arranged Mixed-Use Development

(I) For applications proposing vertically arranged mixed-use development on a single lot or multiple lots, the impact category 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).

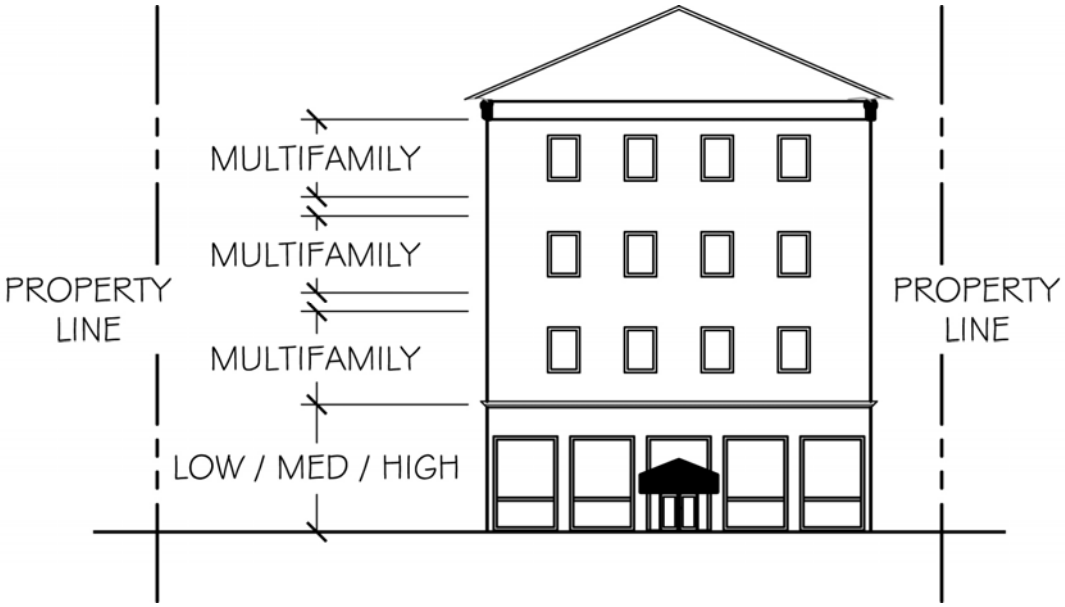


Figure 4.7-3 Use Determination for Vertically Arranged Mixed-Use Development

(J) For applications including buildings over forty-six (46) 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 one-family attached and/or detached structures.

Table 4.7-1

Use Impact Categories

USE	IMPACT CATEGORY
A. RESIDENTIAL, OTHER THAN SINGLE-FAMILY, MULTIPLEX, MULTIFAMILY, AND LODGING	
The following uses are considered compatible when located on adjoining properties:	
Country Inn or Bed and Breakfast	L
Fraternity or Sorority House	M
Group Residential Facility (20 residents or more)	M
Motel or Hotel	M
Rooming Houses or Boarding Houses	L
B. INSTITUTIONAL/EDUCATIONAL	
1. The following uses are considered compatible when located on adjoining properties:	
Chancery	L
Church or similar place of worship	M
Convent or Monastery	L
Day Care Center for children or adults	L
Eleemosynary or Philanthropic Institutions	L
Nursing or Care Home	L
School (public or private)	M
2. The following uses are not considered compatible with the uses above when located on adjoining properties:	
Hospital	H
Training Facility, general	M
Training Facility, truck driver, military, or any other facility that includes the use of firearms, explosives, or heavy machinery	H

C. PUBLIC/QUASI PUBLIC

1. The following uses are considered compatible when located on adjoining properties:

Fire, Ambulance, or Rescue Station	H
Library	L
Post Office	M
Public Office Buildings	M

2. The following uses are not considered compatible with the uses above when located on adjoining properties:

Jail	H
Sanitary Landfill	H

D. RECREATIONAL/ENTERTAINMENT/SOCIAL/CULTURAL

1. The following uses are considered compatible when located on adjoining properties:

Amusement Arcade	M
Archery Range	L
Athletic Field (lighted)	M
Athletic Field (unlighted)	L
Baseball Batting Range	M
Beach, Public	M
Billiard or Pool Parlor	M
Boat Ramp	M
Bowling Alley	M
Club or Lodge (private)	M
Community Center (public or private)	M
Dog Park	L
Fishing Pier	L
Golf Course or Country Club	L
Golf Driving Range (unlighted)	M
Marina	M

Museum, Aquarium, Art Gallery, Cultural Center, or similar facility	M
Park (with no active recreational facilities)	NO BUFFER
Playground	L
Recreational Campground	M
Reducing/Exercise Salon or Health Club	M
Riding Stable (Equestrian)	M
Rifle, Pistol, or Skeet Shooting Range (indoor)	M
Skate Park (outdoor)	M
Skating Rink	M
Summer Camp	L
Swimming Pool (private or HOA owned)	L
Tennis, Basketball, Handball, or similar court (outdoor)	M
Theater (indoor)	M

2. The following uses are not considered compatible with the uses above when located on adjoining properties:

Amusement Park	H
Arena or Stadium	H
Go-Cart Track	H
Golf Driving Range (lighted)	H
Miniature Golf Course	H
Race Track	H
Rifle, Pistol, or Skeet Shooting Range (outdoor)	H
Swimming Pool (public)	H
Theater (outdoor, including drive-in)	H

E. COMMERCIAL

1. The following uses are considered compatible when located on adjoining properties:

Animal Hospital, Veterinary Office (without kennel or boarding)	M
Antique Shop	L
Bank (with drive-through)	M
Bank (without drive-through)	L

Building Supply (wholly enclosed, except for nursery stock)	M
Commercial and Professional Offices	M
Contractor's Office (without outside storage)	L
Dry Cleaning (pick-up only)	M
Food and Beverage Store	M
Funeral Parlor, Undertaking Establishment (see Section 27-357(a)(1))	M
Laundromat	M
Offices: Accountants, Architects, Clergymen, Engineers, Lawyers, Medical Practitioners, and similarly recognized and learned profession (as an accessory use in a dwelling)	L
Medical Practitioner's Office	M
Real Estate Sales Office (as an accessory use in a dwelling)	L
Restaurant (sit down)	M
Retail Sales and Consumer Service Establishment (including integrated shopping centers) 60,000 square feet GFA or less	M

2. The following uses are not considered compatible with the uses above when located on adjoining properties:

Animal Hospital, Veterinary Office (with kennel or boarding)	H
Building Supply (with outdoor storage)	H
Contractor's Office (with outside storage)	H
Drive-in or Fast-Food Restaurant	H
Dry Cleaning Plant	H
Kennel	H
Retail Sales and Consumer Service Establishment (including integrated shipping centers) larger than 60,000 square feet GFA	H

F. VEHICLE-RELATED USES

The following uses are considered compatible when located on adjoining properties:

Auto Parts with Installation	H
Automobile Filling Station	H
Auto Repair Facilities	H

Auto Dealership without repair facilities	M
Auto Storage Yard (not wrecked cars)	M
Auto Towing Yard	H
Auto Salvage Yard	H
Carwash	H
Rental and display of trucks, recreational vehicles, trailers exceeding 8,500 pounds of gross vehicle weight	H
Rental and display of passenger cars and light trucks	M

G. INDUSTRIAL

The following uses are considered compatible when located on adjoining properties:

Chemical and Allied Manufacturing	H
Distillery for the Production of Fuel Alcohol (industrial continued)	H
Fabrication of Wood, Metal, Paper, Plastic, and Glass Products from materials produced elsewhere	H
Manufacturing and Processing of Lumber, Wood, and related products	H
Manufacturing of Scientific, Specialized, and Technical Instruments and Equipment	H
Metal Production	H
Petroleum, Gas, and Related Products	H
Printing, Publishing, Paper, and related industries	H
Processing of Food and related products for human consumption	H
Rubber and Synthetic Rubber Products	H
Stone, Clay, Glass, and Cement Products	H
Textile Products	H

H. WHOLESALE, WAREHOUSE AND DISTRIBUTION

All general wholesale, warehouse, and distribution	H
Consolidated storage (formerly mini-warehouse)	H

I. RESOURCE PRODUCTION AND RECOVERY

The following uses are considered compatible when located on adjoining properties:

Agricultural uses**:**	
(A) All general agriculture	L
(B) Limited to floriculture, horticulture, gardening and private noncommercial greenhouses	L
(C) Keeping of homing or racing pigeons	L
Class Three Fill	H
Concrete Recycling	H
Nursery or Garden Center	M
Rubble Fill	H
Sand or Gravel Wet Processing	H
Sawmill	H
Surface Mining	H

J. TRANSPORTATION/PARKING/COMMUNICATION, UTILITIES

The following uses are considered compatible when located on adjoining properties:

Airport, Airpark, Airfield, Airstrip, Heliport, Helistop	H
Broadcasting Studio (with tower)	M
Broadcasting Studio (without tower)	L
Bus Maintenance (at a private school or church)	H
Bus or Train Station or Terminal	H
Motor Freight Facilities and Terminals	H
Parking Garage (commercial)	M
Parking Lot (commercial)	M
Public Utility Use or Structure (except overhead utility lines but including a tower, monopole, or antenna)	M

Public Utility with overhead power lines	L
Public Utility Easement without any aboveground structures	NO BUFFER
Rail Lines at or above ground level	H
Satellite Dish Antenna	L
Taxicab Dispatching Station	M
Tower, Pole, Whip, or Antenna (electronic, radio, or television, transmitting or receiving, except a public utility structure or satellite dish antenna)	L

K. MISCELLANEOUS

Auction House	M
Carpentry, Cabinet Making, or other	M
Cemetery	L
Crematory	M
Junk Yard	H
Palmistry/Spiritual Advisor (as an accessory use or otherwise)	L
Recycling Collection Center	H
Rental Business	M
Storage Yard	H
Stormwater Management Pond (on an individual lot)	NO BUFFER
Tattoo Parlor	L

(3) Consult Table 4.7-2, 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.

Table 4.7-2
Minimum Bufferyard Requirements

	Adjoining Use					
	One-Family Detached	Townhouses, Multiplexes and Other Attached Units	Multifamily	Low Impact	Medium Impact	High Impact
Proposed Use						
One-Family Detached	NONE	A*	B*	B*	C*	D*
Townhouses, Multiplexes, and Other Attached Units	A	NONE	A*	B*	C*	D*
Multifamily	B	A	NONE	A*	B*	D*
Low Impact	B	B	A	NONE	A*	C*
Medium Impact	C	C	B	A	NONE	B*
High Impact	D	D	D	C	B	NONE

*Indicates the maximum buffer that may be required. If all or any part of the buffer has been provided on the adjacent property, was required by the landscape manual, and is shown on a landscape plan approved in accordance with this section, the proposed use may provide only that amount of the buffer that has not been provided on the adjacent property (see Figure 4.7-4).

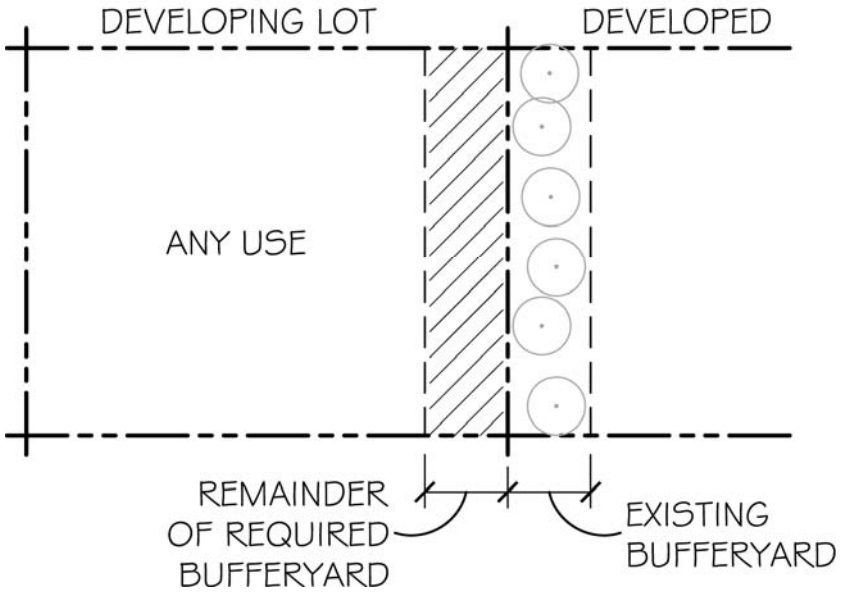


Figure 4.7-4 Required Bufferyard Adjacent to Existing Bufferyard

(4) Consult Table 4.7-3, Bufferyard Types, to determine minimum building setback, minimum landscaped yard, and plant requirements for each bufferyard type.

Table 4.7-3

Bufferyard Types

Type	Minimum Building Setback	Minimum Landscaped Yard	Number of Plant Units Required per 100 Linear Feet of Property Line
A	20 feet	10 feet	40
B	30 feet	20 feet	80
C	40 feet	30 feet	120
D	50 feet	40 feet	160
E	60 feet	50 feet	180

In order to use and understand Table 4.7-3, Bufferyard Types, the following notes apply:

(A) Where a greater building setback is required by the Zoning Ordinance to compensate for the height of the building, one (1) additional foot of landscaped yard shall be required for every three (3) feet of required building setback in excess of the setbacks required in Table 4.7-3, Buffered Types.

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

(C) 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.

Plant unit equivalencies are as follows:

One (1) shade tree = Ten (10) 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

Plants may be located anywhere within the bufferyard.

(D) 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 percentage of the area of the

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

(E) For properties located in the Developing Tier, the required bufferyard may be reduced as follows:

(i) If the width of the required bufferyard (building setback and the landscape yard) is increased, the required plant material may be proportionately decreased for a total maximum reduction of twenty-five percent (25%) of the required plant material; or

(ii) If a six (6) foot high, opaque fence or wall is located within the bufferyard, plant unit requirements may be reduced by up to fifty percent (50%). The wall or fence must provide the maximum concealment.

(F) For properties located in the Developed Tier and/or a Center or Corridor Node, 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.

(5) 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 residential, then one hundred percent (100%) of the bufferyard is required. In the Developed Tier and/or a Center or Corridor Node, 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).

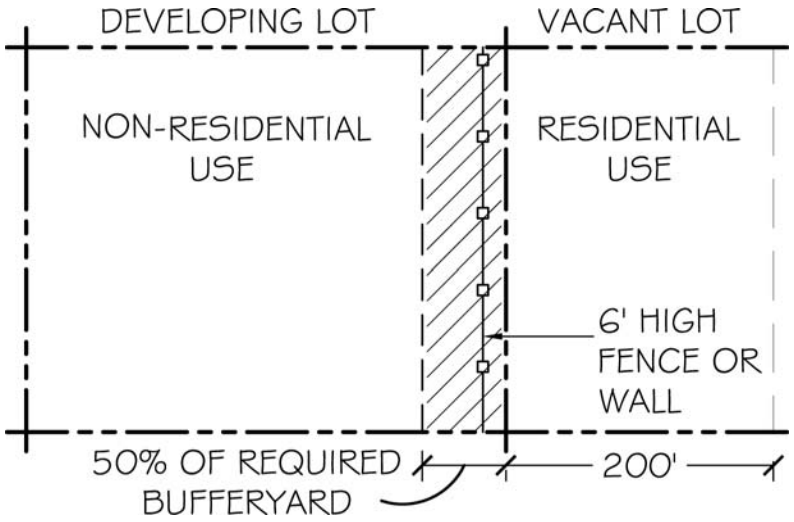


Figure 4.7-5 Developing Non-Residential Use Adjacent to Vacant Residentially-Zoned Property

(C) If a developing property with a residential use is adjoining vacant property zoned residential, fifty percent (50%) of the bufferyard is required to be provided on the developing lot (see Figure 4.7-6).

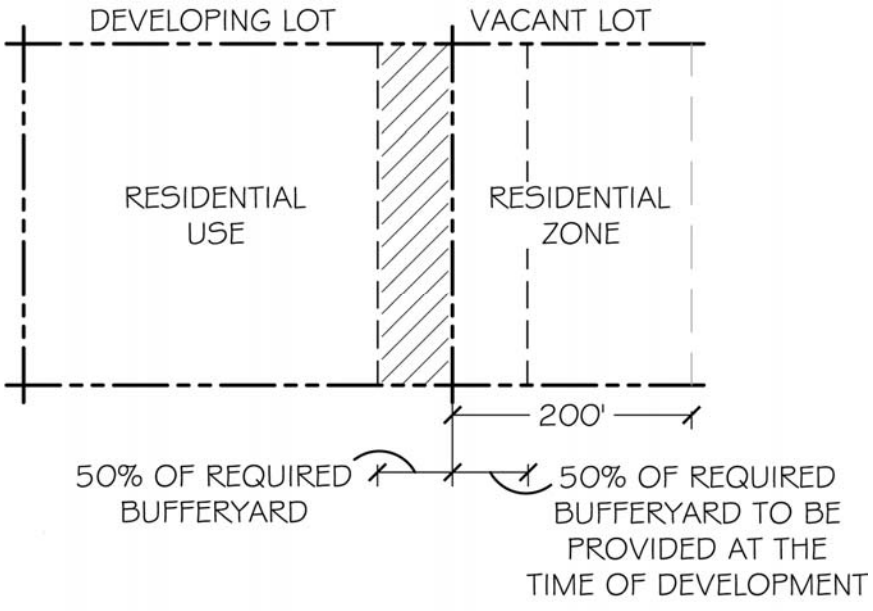


Figure 4.7-6 Developing Residential Use Adjacent to Vacant Residentially-Zoned Property

(D) If a developing property with a residential use is located adjacent to a vacant lot located in a Commercial or Industrial Zone, the developing property is not required to provide a buffer.

(E) If a developing property with a non-residential use is located adjacent to a vacant lot located in a Commercial or Industrial 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 Commercial Zone and is adjoining vacant property located in a Commercial Zone, the developing property is not required to provide a bufferyard.

(G) If a developing property is located in an Industrial Zone and is adjoining vacant property located in an Industrial Zone, the developing property is not required to provide a bufferyard.

(6) Developing Lots Adjacent to Nonconforming Uses

If a developing property is adjacent to an incompatible, certified, nonconforming 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 (see Figure 4.7-7).

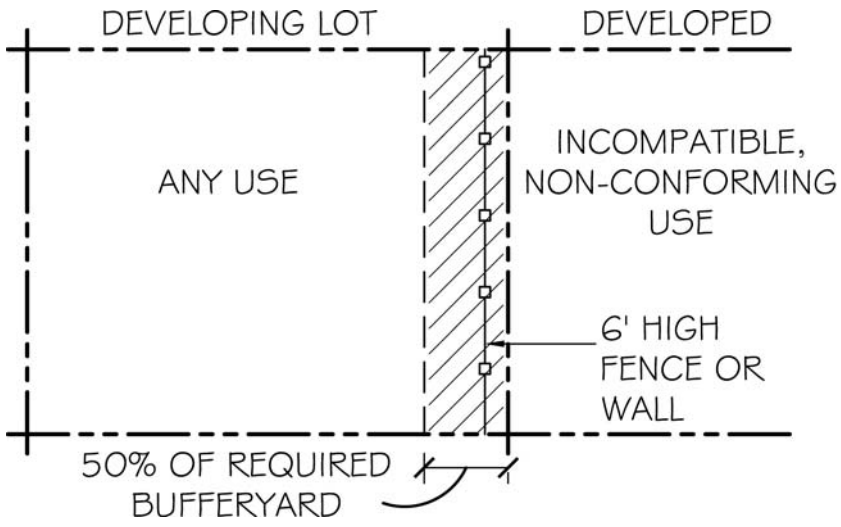


Figure 4.7-7 Developing Property Adjacent to Incompatible, Nonconforming Use

(7) Developing Lots Adjacent to Historic Sites

(A) If a developing lot adjoins a designated historic site (except underground archeological sites) located within the Developed Tier, a Center, or a Corridor Node, the developing lot shall provide a Type "D" buffer along the entire shared property line (see Table 4.7-3, Bufferyard Types). 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)).

(B) If a developing lot adjoins a designated historic site (except underground archeological sites) and is located within the Developing or Rural Tier, the developing lot shall provide a Type "E" buffer along the entire shared property line (see Table 4.7-3, 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).

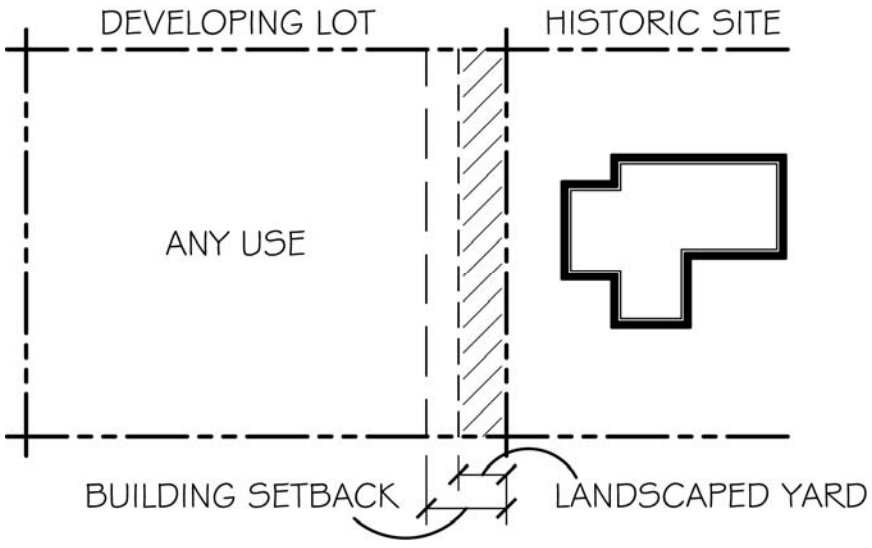


Figure 4.7-8 Developing Property Adjacent to Historic Site

(d) Demonstrating Compliance

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

Sample Schedule 4.7-1

Buffering Incompatible Uses Requirements

1)	General Plan designation:	_____Developed Tier, Corridor Node or Center _____Developing or Rural Tier	
2)	Use of proposed development:	_____	
3)	Impact of proposed development:	_____	
4)	Use of adjoining development:	_____	
5)	Impact of adjoining development:	_____	
6)	Minimum required bufferyard (A, B, C, D or E):	___A ___B ___C ___D ___ E	
7)	Minimum required building setback:		_____ feet
8)	Building setback provided:		_____ feet
9)	Minimum required width of landscape yard:		_____ feet
10)	Width of landscape yard provided:		_____ feet
	(The required setback and landscape yard may be reduced by fifty percent (50%) in the Developed Tier, Corridor Node or Center when a six (6) foot high fence or wall is provided.)		
11)	Linear feet of buffer strip required along property line and right-of-way:		_____ linear feet
12)	Percentage of required bufferyard occupied by existing trees:		_____ %
13)	Is a six (6) foot high fence or wall included in bufferyard?	_____ yes	_____ no
	(The required plant material may be reduced by fifty percent (50%) when a six (6) foot high fence or wall is provided.)		
14)	Total number of plant units required in buffer strip:		_____ p.u.
15)	Total number of plant units provided: shade trees	_____ x 10 p.u.=	_____ p.u.
	evergreen trees	_____ x 5 p.u.=	_____ p.u.
	ornamental trees	_____ x 5 p.u.=	_____ p.u.
	shrubs	_____ x 1 p.u.=	_____ p.u.
		Total	_____ p.u.

4.8 Landscape Requirements in a Regional Urban Community

(a) Purposes and Objectives

Establish regulatory guidelines for landscaping within a Regional Urban Community.

(b) Requirements

The landscape requirements for a Regional Urban Community shall be determined at the time of the conceptual site plan pursuant to Section 27-544 of the Zoning Ordinance or, where appropriate, at the time of the comprehensive design plan pursuant to Section 27-480 of the Zoning Ordinance. The requirements, at a minimum, shall include:

(1) Residential Requirements

(A) All one-family detached lots that are smaller than nine thousand, five hundred (9,500) square feet shall be planted with a minimum of one (1) shade tree or one (1) ornamental tree.

(B) For one-family attached, one-family semi-detached, two-family and three-family dwellings, a minimum total of one (1) shade tree and one (1) ornamental or evergreen tree per every two (2) units shall be provided. These trees may be planted either on individual lots or on public or private open space.

(C) For multifamily units, one (1) major shade tree per two thousand, four hundred (2,400) square feet of green area provided shall be required. The number of trees may be satisfied on a two-to-one (2:1) basis by the use of ornamental trees or evergreen trees, not to exceed one quarter (1/4) of the number of shade trees.

(2) Screening Requirements:

(A) Screening materials shall consist of evergreen trees and shrubs, walls, and fences.

(B) At the time of installation or planting of screening materials, screening must occupy seventy-five percent (75%) of a vertical, rectangular plane, excluding driveways, sufficiently tall and wide to accomplish the required screening.

(C) All loading areas consisting of loading spaces, loading docks, adjacent vehicular lanes, and service or maintenance areas shall be screened from residential areas (containing one-family detached and attached dwelling units) and all adjacent public roads.

(D) All dumpsters, trash pads, trash/recycling collection, or storage areas shall be carefully located and oriented on the site to be as inconspicuous as possible.

(E) All mechanical equipment and meters shall be screened to prevent excessive noise and visual impacts on surrounding properties.

(F) Screening options may include:

(i) Six (6) foot high, sight-tight fence.
(ii) Architecturally decorative walls.
(iii) Evergreen screen (height, spacing, and variety to be determined by size and location of area to be screened).

4.9 Sustainable Landscaping Requirements

(a) Purposes and Objectives

(1) Promote sustainable landscaping as an environmentally sensitive design approach.

(2) Incorporate regionally native plants into landscape design.

(3) Prohibit the planting of invasive species, and manage existing invasive species.

(4) Prohibit the planting of trees on steep slopes.

(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.

(4) The landscape design should include a diversity of native plants with a wide variety of environmental benefits and should not include invasive species that negatively affect regional ecosystems.

(5) Invasive species present in vegetated areas to be retained according to the requirements of the landscape manual should be removed in order to allow for long-term sustainability 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 the requirements.

(c) Requirements

(1) A 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:

Shade trees	50%
Ornamental trees	50%
Evergreen trees	30%
Shrubs	30%

(2) Native plant material shall be identified as such in the planting schedule on the landscape plan.

(3) 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).

(4) 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.

(5) 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

1) Percentage of native plant material required in each category:

Shade Trees:	total _____ x 50% =_____total number required	
	total number provided_____=_____% native	
Ornamental Trees:	total _____ x 50% =_____total number required	
	total number provided_____=_____% native	
Evergreen Trees:	total _____ x 30% =_____total number required	
	total number provided_____=_____% native	
Shrubs:	total _____ x 30% =_____total number required	
	total number provided_____=_____% native	

2) Are invasive species proposed? _____yes _____no

3) Are existing invasive species on-site in areas that are to remain undisturbed? _____yes _____no

4) 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

5) Are trees proposed to be planted on slopes greater than 3:1? _____yes _____no

4.10 Street Trees Along Private Streets

All public rights-of-way are governed by the Department of Public Works and Transportation, State Highway Administration, 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; however, all proposed street trees within public rights-of-way should be shown on all landscape plans for informational purposes.

(a) Purposes and Objectives

(1) Ensure that street trees along private streets are selected and planted in a manner that will enhance private streets both visually and environmentally.

(2) Define the private street as a unified space that connects distant and sometimes disparate uses.

(3) Establish human scale, and promote pedestrian activity by fostering a safe, pedestrian-friendly streetscape along private streets.

(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 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 and subdivide 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 private street. Plans should provide species diversity corresponding to the street character by planting different streets with different trees.

(c) Requirements

(1) Street trees shall be located in a space not less than five (5) feet wide between the street curb or edge of paving and the sidewalk.

(2) Shade trees, two and one-half (2-1/2) to three (3) inch caliper in size, shall be planted along each private 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.

(3) 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 thirty (30) linear feet, excluding driveway openings.

(4) Street trees shall be located a minimum thirty-five (35) feet from the point of curvature of an intersection of two (2) streets.

(5) Street trees shall be located a minimum ten (10) feet from the point of curvature of residential driveway entrances.

(6) Street trees shall be located a minimum twenty (20) feet from the point of curvature of commercial driveway entrances.

(7) Street trees shall be located a minimum fifteen (15) feet from street light poles.

(8) Street trees shall be located a minimum ten (10) feet from water meters.

(9) Street trees shall be located a minimum ten (10) feet from storm drain inlets, hydrants, or manholes.

(10) Soil surface area provided shall be a minimum of one hundred fifty (150) square feet per tree for isolated trees and a minimum of one hundred twenty (120) square feet per tree within a continuous open landscape strip. These requirements may also be met through the use of bridged slab, structural soil, or other techniques clearly indicating a minimum of three hundred and seventy-five (375) cubic feet of soil or three hundred (300) cubic feet of soil for each tree, respectively. Details and specifications of such techniques shall be provided on the landscape plan (see Figure 4.10-1).

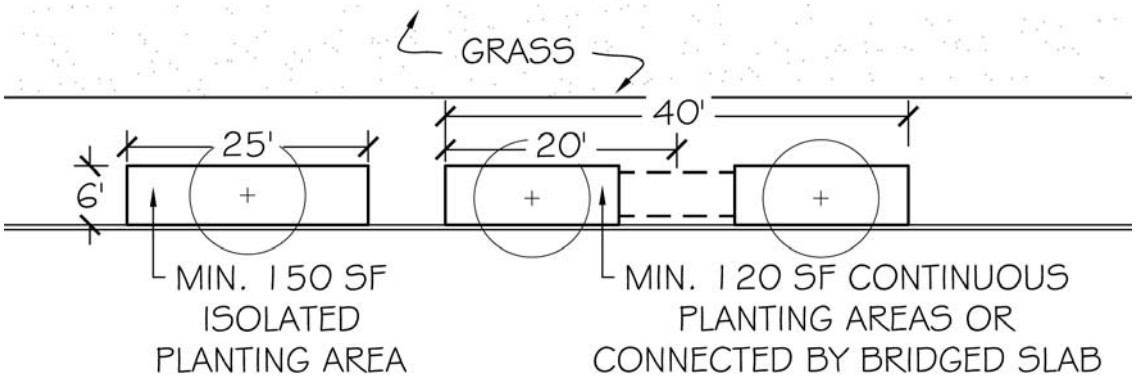


Figure 4.10-1 Minimum Soil Surface Area Required

(d) Demonstrating Compliance

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

Sample Schedule 4.10-1
Street Trees Along Private Streets

1)	Number of street trees required (1 tree per 35 linear feet of frontage excluding driveway openings):	_____street trees	
2)	Number of street trees provided:	_____street trees	
3)	If ornamental trees are used, are they spaced on average 30 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 5 feet wide?	_____ 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 5 - GLOSSARY OF TERMS

The definitions contained in this glossary are distinct to this manual. For the definitions not contained herein, reference should be made to Part 2, Division 1, Section 107.01 of Subtitle 27 of the 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.

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.

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 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).

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) evergreen tree = Five (5) plant units
One (1) ornamental tree = Five (5) plant units
One (1) shrub = One (1) plant unit

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 24-128(b)(9) to avoid potentially hazardous or dangerous traffic situations, for easements utilized pursuant to Section 24-128(b)(10), for opportunity housing, or for right-of-way easements in an integrated shopping center pursuant to Section 24-128(b)(15) 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 Conservation and Wildlife Habitat Ordinance*.

Appendices

The following appendices may be revised and/or updated by the Planning Board or the planning director (or designee).

Appendix Number	Appendix Name
1	Alternative Compliance Submittal Checklist
2	Plant Substitution Request Form
3	Plant Lists
4	Landscape Planting Specifications and Planting Details

Appendix 1

Alternative Compliance Submittal Checklist

(1) Completed application form.

(2) Application Fee:

(a) In conjunction with a permit (fee).

(b) In conjunction with companion case (no fee).

(3) Underlying permit case or underlying companion case number on application form.

(4) Section of Landscape Manual from which Alternative Compliance is requested.

(5) 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.

(6) One (1) zoning sketch map.

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

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

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

(10) One (1) Site Plan demonstrating the following:

(a) North arrow and scale.

(b) Property lines.

(c) Zoning and use 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.

(d) Name, location, existing right-of-way width, ultimate right-of-way width, and all existing and proposed improvements within all abutting streets.

(e) Natural features, such as existing two (2) foot contour topography, ponds, lakes, and streams.

(f) Delineation of regulated environmental features, such as one hundred (100) year floodplain, non-tidal wetlands, regulated streams, and associated buffers.

(g) Existing and proposed stormwater management facilities.

(h) Required bufferyard depths/widths (i.e., building setbacks and landscape yards from all lot lines).

(i) 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).

(j) Proposed grading in two (2) foot contours, with any slope steeper than three-to-one (3:1) labeled.

(k) Location of existing and proposed utilities, including water, storm drain, and sanitary sewer pipes; overhead wires; utility poles and boxes; and signs.

(l) Location of existing and proposed easements, including, but not limited to, access easements and utility easements.

(m) Location, size, and description of all elements that are required to be screened by Section 4.4, Screening Requirements.

(11) One (1) Landscape Plan in accordance with Section 2, Plan Preparation.

Appendix 2

Plant Substitution Request Form

DATE: _____

TO: Urban Design Supervisor

FROM: Applicant Name: _____

Phone: _____ Fax: _____

E-mail: _____

Address: _____

_____

Signature: _____

SUBJECT: Case Name: _____ Case #: _____

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

Plant Approved on Landscape Plan Botanical/Common Name	Qty	Size	Native Status* (yes/no)	Proposed Plant Substitution Botanical/Common Name	Qty	Size	Native Status* (yes/no)

*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

Plant Lists

1. Table A-3(a) Recommended Shade Trees
2. Table A-3(b) Recommended Minor Shade Trees
3. Table A-3(c) Recommended Ornamental Trees
4. Table A-3(d) Recommended Evergreen Trees
5. Table A-3(e) Trees Not Recommended For General Use
6. Table A-3(f) Recommended Shrubs
7. Table A-3(g) Prohibited Trees
8. Table A-3(h) Prohibited Shrubs, Grasses, and Ground Covers

Table A-3-1

Recommended Shade Trees

Trees from the following list must be used to fulfill the requirements of the Landscape Manual unless acceptable alternatives have been approved in advance by the planning director (or designee).

Botanic Name	**Common Name**	**Comments**
Acer rubrum and its cultivars	Red Maple	
Fagus grandiflora	American Beech	Beech trees not desirable as street trees due to surface roots.
Fagus sylvatica	European Beech	
Ginkgo biloba ‘Princeton Sentry’	Male Ginkgo (graft)	
Gleditsia triacanthos inermis Selected cultivars: ‘Imperial’ ‘Moraine’ ‘Shademaster’ ‘Skyline’	Thornless Honeylocust	Webworm
Gymnocladus dioicus	Kentucky Coffee Tree	
Liquidambar styraciflua	Sweetgum	Fruit can be a maintenance problem.
Metasequoia glyptostroboides	Dawn Redwood	
Nyssa sylvatica	Black Gum	Tap root. Difficult to transplant.
Platanus acerifolia ‘Bloodgood’	Bloodgood London Planetree	
Platanus occidentalis	Sycamore	
Quercus alba	White Oak	
Quercus bicolor	Swamp White Oak	
Quercus coccinea	Scarlet Oak	
Quercus falcata	Southern Red Oak	
Quercus michauxii	Swamp Chestnut Oak (Basket Oak)	
Quercus palustris	Pin Oak	Cultivars without drooping branches recommended.

Botanic Name	Common Name	Comments
Quercus phellos	Willow Oak	
Quercus prinus	Chestnut Oak	
Quercus rubra (borealis)	Red Oak	
Quercus velutina	Black Oak	
Sophora japonica ‘Regent’	Japanese Pagoda Tree	
Taxodium distichum	Baldcypress	
Tilia americana	American Linden	
Tilia cordata ‘Greenspire’ Linden	Greenspire Littleleaf	
Tilia euchlora	Crimean Linden	
Tilia tomentosa	Silver Linden	
Ulmus hollandica ‘Groenveldt’	Groenveldt Elm	
Ulmus parvifolia	Chinese Elm	
Zelkova serrata	Japanese Zelkova	

Table A-3-2

Recommended Minor Shade Trees

Botanic Name	Common Name	Comments
Acer buergerianum	Trident Maple	
Acer capestre	Hedge Maple	
Betula nigra	River Birch	
Carpinus betulus ‘Fastigiata’	European Hornbeam	
Cladrastis lutea	Yellowood	
Eucommia ulmoides	Hardy Rubber Tree	Drought resistant.
Ostrya virginiana	Ironwood	Prefers better planting sites.
Prunus sargentii	Sargent Cherry	
Sassafras albidum	Sassafras	
Tilia mongolica	Mongolian Linden	
Ulmus rubra	Slippery Elm	

Table A-3-3

Recommended Ornamental Trees

Botanic Name	Common Name	Comments
Amelanchier canadensis	Serviceberry	
Carpinus caroliniana	American Hornbeam	
Cercis canadensis	Redbud	
Chionanthus virginicus	Fringetree	
Cornus kousa	Kousa Dogwood	
Crataegus phaenopyrum	Washington Hawthorne	Thornless varieties are available.
Crataegus viridis ‘Winter King’	Winter King ‘Green Hawthorne’	
Lagerstroemia spp.	Crape Myrtle	
Laburnum anagyroides	Goldenchain Tree	
Magnolia spp.	Magnolia	
Oxydendrum arboreum	Sourwood	
Prunus spp.	Flowering Cherry and Plum	
Styrax japonicum	Japanese Snowball	

Table A-3-4

Recommended Evergreen Trees

Botanic Name	Common Name	Comments
Cedrus atlantica glauca	Atlas Blue Cedar	
Cryptomeria japonica	Japanese Cryptomeria	
Cupressocyparis leylandi	Leyland Cypress	
Ilex equifolium cultivars	English Holly	
Ilex opaca cultivars	American Holly	
Ilex x attenuata	Foster Holly	
Juniperus virginiana	Eastern Red Cedar	
Picea spp.	Spruce	
Pinus spp.	Pine	
Pseudotsuga menziesii	Douglas Fir	
Thuja spp.	Arborvitae	
Tsuga canadensis	Canadian Hemlock	Hemlock wooly adelgid

Table A-3-5

Trees Not Recommended for General Use

Botanic 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.
Ginkgo biloba female	Female Ginkgo	Very bad smelling fruit.
Gleditsia triacanthos	Thorny Honeylocust	Dangerous thorns.
Fraxinus pensylvanica ‘Marshall’s Seedless’	Marshall’s Seedless Green Ash	Borers a problem.
Maclura pomifera	Osage Orange	Messy fruit. Large thorns.
Morus spp.	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.
Quercus alba	White Oak	Extremely susceptible to gypsy

Botanic Name	Common Name	Comments
		moths.
Sorbus spp.	Mountain Ash	Susceptible to many diseases and insect pests.
Juglans nigra	Black Walnut	Phytotoxins from roots, messy fruit.
Prunus serotina	Black Cherry	Messy fruit.
Ulmus americana	American Elm	Susceptible to elm bark beetle.
Ulmus pumila	Siberian Elm	Invasive.

Table A-3-6

Recommended Shrubs

Botanic Name	Common Name	Comments
Abelia grandiflora	Gossy Abelia	
Azalea spp.	Azalea (in variety)	
Clethra alnifolia	Summersweet	
Cornus alba cultivars	Siberian Dogwood	
Cornus stolonifera	Red-Osier Dogwood	
Euonymus spp.	Euonymus (in variety)	Except Euonymus alatus due to it invasiveness.
Forsythia spp.	Forsythia (in variety)	
Ilex cornuta rotunda	Dwarf Chinese Holly	
Ilex spp. (excl. above)	Holly (in variety)	
Jasminum nudiflorum	Winter Jasmine	
Juniperus chinensis sargenti, conferta, horizontalis, var.	Spreading or Dwarf Junipers (in variety)	
Juniperus spp. (excl. above)	Junipers (in variety)	
Kalmia latifolia	Mountain Laurel	
Leucothoe spp.	Leucothoe	
Mahonia aquifolium	Oregon Grape Holly	
Myrica cerifera	Southern Bayberry	
Myrica pensylvanica	Nothern Bayberry	
Osmanthus spp.	Osmanthus (in variety)	
Pieris Japonica	Japanese Andromeda	
Prunus laurocerasus Schipkaensis	Cherry Laurel	
Pyracantha spp.	Firethorn	
Rhododendron spp.	Rhododendron	
Spiraea spp.	Spirea (in variety)	Except Spirea japonica due to its invasiveness.
Taxus spp.	Yew (in variety)	

Botanic Name	Common Name	Comments
Viburnum spp.	Viburnum (in variety)	
Weigela spp.	Weigela (in variety)	

Table A-3-7

Prohibited Trees

Botanic 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-3-8

Prohibited Shrubs, Grasses, and Ground Covers

Botanic Name	Common Name	Comments
Allium vineale	Wild Garlic	
Alliaria petiolata	Garlic mustard	
Ampelopsis brevipedunculata	Porcelainberry	
Artemisia vulgaris	Mugwort	
Arundo donax	Giant reed, wild cane	
Akebia quinata	Five-leaved akebia	
Bambusa, Phyllostachys, and Pseudosassa	Bamboo	
Berberis thunbergii	Japanese Barberry	
Buddleia	Butterfly Bush	
Carduus acanthoides	Plumeless Thistle	
Carduus nutans	Musk Thistle	
Cirsium arvense	Canada 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	
Euonymus fortunei	Creeping euonymus	
Hedera helix	English Ivy	
Hemerocallis fulva	Common daylily	
Heracleum mantegazzianum	Giant hogweed	
Humulus japonicus	Japanese Hops	
Lespedeza cuneata	Chinese lespedeza	
Ligustrum (spp.)	Privit	
Lonicera	Honeysuckle	
Lythrum salicaria	Purple loosestrife	

Botanic Name	Common Name	Comments
Microstegium vimineum	Japanese stiltgrass	
Miscanthus sinensis	Chinese Silver Grass	
Murdannia keisak	Marsh dewflower	
Perilla frutescens	Perilla	
Phragmites australis	Common reed	
Polygonum cuspidatum	Japanese Knotweed	
Polygonum perfoliatum	Mile-a-minute	
Pueraria montana v. lobata	Kudzu	
Ranunculus ficaria	Lesser celandine	
Rhodotypos scandens	Jetbead	
Rubus phoenicolasius	Wineberry	
Vinca minor	Periwinkle	
Wisteria sinensis, W. floribunda	Wisterias, exotic	

Appendix 4
Landscape Specifications and Planting Details

Landscape Specifications

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 the American Nursery and Landscape Association (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.

(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.

(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 horticulturalist/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 in 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, American Nursery and Landscape Association.

(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.

(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 1994 *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 Environmental Planning Section, Countywide Planning Division of The Maryland-National Capital Park and Planning Commission.

The Maryland-National Capital Park and Planning Commission
Prince George's County Planning Department
14741 Governor Oden Bowie Drive
Upper Marlboro, MD 20772
www.pgplanning.org

Cover Photo: Rob Meintjes
Location: University of Maryland in Prince George's County, Maryland
Trees: Willow Oaks (Quercus Phellos), the Prince George's County Official Tree