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5 **HOWARD COUNTY**

6 **LANDSCAPE MANUAL**

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ADOPTED February 2, 2026 as CR 19-2026

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1 Chapter 1 Introduction and General Information

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3 1.1 Introduction



HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
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Introduction

I am pleased to present the updated Howard County Landscape Manual, the first comprehensive revision since 2010. Over the past decade, our community has grown and changed, and so have our needs for sustainable, attractive, and resilient landscapes. This updated manual reflects the latest best practices in urban design, environmental stewardship, and community well-being, while remaining clear and usable for residents, developers, and design professionals alike.

The Howard County Landscape Manual is the County's technical manual for preparing development landscape plans. It sets the minimum standards for the amount and type of planting required, identifies suitable landscape materials, and outlines alternative methods to meet these requirements. Prepared by the Department of Planning and Zoning and adopted by the County Council, the manual works hand-in-hand with the Howard County Zoning and Subdivision and Land Development Regulations. Together, these tools help ensure that landscaping on all new developments meets the County's goals for beauty, safety, and environmental performance.

Landscaping now carries even greater significance as we plan for a changing climate. This update aligns with County initiatives—including the Climate Action Policy, the Green Infrastructure Network, and our pollinator program—by recognizing the environmental services that healthy landscapes provide. By integrating these strategies into development, we are building resilience while enhancing the daily experience of residents, visitors, and businesses alike.

I would like to extend my sincere appreciation to all who contributed to this update of the Howard County Landscape Manual. This effort was made possible through the collaboration of multiple County departments, dedicated focus groups, and engaged community members who shared their insights, experiences, and expertise. Their commitment to improving our built environment and shaping a healthier, more vibrant County is reflected throughout this manual. DPZ would also like to recognize and thank our consultant, Site Resources, Inc. for their collaboration and contributions throughout the three phase process from focus groups to research and to drafting the updated manual.

Special thanks to:

- *Howard County Department of Public Works*
- *Howard County Department of Recreation and Parks*
- *Howard County Office of Transportation*
- *Howard County Office of Community Sustainability*
- *Benchmark Engineering, Inc.*
- *Bohler Engineering*
- *Daft McCune Walker, Inc.*
- *Fisher, Collins & Carter, Inc.*
- *Gutschick, Little & Weber, P.A.*
- *Mildenberg Boender & Associations, Inc.*
- *Hord Coplan Macht*
- *KCI Technologies, Inc.*
- *Morris & Ritchie Associates, Inc.*
- *Sill Engineering Group, LLC*
- *St. John Properties, Inc.*
- *CARES Members from (Columbia Village, Harper's Choice*
- *Columbia Association*
- *Columbia Association Weed Warriors*
- *Howard County Bee City*
- *Howard County Master Gardeners*
- *Master Watershed Steward*
- *OMI Green Team*
- *Yards Alive*

Lynda Eisenberg, AICP, Director

Howard County Department of Planning and Zoning

Howard County Government, Calvin Ball County Executive

www.howardcountymd.gov

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5 1.2 Version History

6 First Edition – March 12, 1993

7 Amendment to First Edition – March 2, 1998

8 Updates – July 1, 2010

9 Updated – 2025

10 *Enactment Date & Bill Number*

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1 1.3 Applicability

2 Landscaping requirements are established in the Howard County Subdivision and Land Development
3 Regulations, Zoning Regulations, the Howard County Forest Conservation Manual, and the Howard County
4 Landscape Manual. The basic landscaping requirements are established in Section 16.124 of the Howard
5 County Subdivision and Land Development Regulations.

6 A landscape plan must accompany all Final Plans or Site Development Plans. Landscape requirements
7 must also be identified schematically in preliminary plan and preliminary equivalent sketch plan
8 submissions.

9 Refer to [Section 2.5](#) for exemptions.

10 1.4 Purpose & Intent

11 1.4.1 Purpose statement

12 The Howard County Landscape Manual is the technical manual used to establish minimum standards of
13 performance for preparing landscape plans, including the amount of landscape plantings required,
14 suitable landscape materials, and alternative means of meeting the regulations. The Landscape Manual
15 and amendments to it are prepared by the Department of Planning and Zoning and adopted by resolution
16 of the County Council.

17 The Howard County Zoning and Subdivision and Land Development Regulations and the Landscape
18 Manual establish the requirements for landscaping of all new **developments** within the County. The
19 purposes of these requirements are to:

- 20 • Protect, preserve and enhance the appearance and value of neighborhoods, and provide a
21 safe environment.
- 22 • Buffer potentially incompatible land uses from one another and to screen undesirable views.
- 23 • Prevent the unnecessary removal of vegetation during the land **development** process.
- 24 • Provide **parking lots** with landscaped areas that facilitate movement of traffic, break up large
25 areas of impervious surfaces, provide shade, and **buffer** or **screen parking lots** from
26 adjacent properties and roadways.
- 27 • Promote energy conservation through the cooling and wind buffering effects of trees.
- 28 • Contribute to the processes of air purification, oxygen regeneration, water absorption, and
29 the reduction of glare and heat.
- 30 • Protect the health, safety and welfare of the general public.

31 Additionally, the Landscape Manual furthers Howard County policies and goals, including those set forth
32 in the Climate Action Plan, the Green Infrastructure Network, and the County's pollinator initiative Howard
33 County Bee City. In addition to aesthetic and functional objectives, landscaping in the built environment
34 serves as a climate adaptation and mitigation strategy by:

- 35 • providing shade
- 36 • reducing urban heat island effects
- 37 • sequestering carbon
- 38 • supporting **biodiversity**
- 39 • improving stormwater management

1 1.4.2 Using the Landscape Manual

2 Chapters 2 and 3 of this manual describe the requirements for preparation of landscape plans, the
3 submission of landscape plans as part of the **development** process, and the general and specific
4 standards for landscape requirements in Howard County.

5 Chapter 3 – Landscape Requirements is divided into two sections.

- 6 o **Section 3.1** – Intent by Land Use / Development Type describes the intent and guidelines, as
7 related to landscape character and the requirements of this manual, for various land use types.
8 This section should serve as a guide during application of the landscape requirements and may
9 be consulted when proposing alternative methods to meet the landscape requirements.
- 10 o **Section 3.2** – Landscape Edges & Site Conditions outlines the standard landscape requirements
11 applicable to various site conditions.

12 a. Terminology

13 Throughout the manual, terms that are defined in the landscape manual's glossary and those that
14 can be found in the Zoning and Subdivision and Land Development Regulations are noted by
15 **bold & italicized text**.

16 b. General Calculation Standards

17 Plant material requirements are based on linear feet of property line or other applicable boundary
18 as described for each site condition in **Section 3.2**.

19 Calculations of required plant quantities shall be rounded up to the next whole number.

20 c. Elective Landscaping

21 Proposed landscaping beyond what is required by this manual is encouraged, however it is
22 considered elective or amenity landscaping and should not be part of the approved landscape plan
23 sheets.

24 Landscape plans shall include the requirements in this manual and landscaping required by other
25 County approval processes including but not limited to conditional use approvals, DAP
26 endorsements, Planning Board approvals. Landscaping beyond what is required by this manual
27 and by other County requirements should not be included in the plans submitted for review and
28 approval.

29 Additional amenity landscaping proposed may be shown on a separate exhibit that is not part of
30 the approved set. Submitted amenity landscape exhibits are informational only and are not
31 reviewed or approved by the County.

32 d. References, Links and Resources

33 Within the manual, hyperlinks (shown as **Section 2.1.2**, for example) are provided to connect
34 directly to referenced sections.

35 External resources mentioned in the manual will be provided as companion documents on DPZ's
36 Landscape Manual webpage. Keeping links to external resources outside the adopted manual is
37 intended to facilitate updates as websites change, move or dissolve.

38 Plant Lists are provided as companion documents on DPZ's Landscape Manual webpage.

39 Citations of code refer to the Howard County Maryland Code of Ordinances Title 16 – Planning,
40 Zoning and Subdivision and Land Development Regulations, Subtitle 1 – Subdivision and Land
41 Development Regulations.

1 Chapter 2 Landscape Plans & Development Process

2 2.1 Qualifications to Prepare Plans

3 2.1.1 Preparation of Plans

4 All landscape plans must be prepared and sealed by a landscape architect registered in the State of
5 Maryland, or by any other registered or licensed professional who is authorized by the State to prepare
6 landscape plans.

7 The Department of Planning and Zoning may approve the preparation of a landscape plan by an
8 experienced landscape designer under the following circumstances:

- 9 • Landscape planting plans for small commercial sites and small residential developments.
- 10 • Landscape plans prepared as an exhibit to a waiver petition that requests a waiver to the
11 requirement to submit a site development plan.

12 A qualified landscape designer should meet one or more of the following criteria:

- 13 • Have a degree or certificate from a recognized program in horticulture landscape design or a
14 related field, and have two years experience preparing planting plans and landscape construction
15 drawings.
- 16 • Have five years experience in preparing planting plans and landscape construction drawings.

17 2.1.2 Certified Professional Horticulturist OR Chesapeake Bay Landscape 18 Professional

19 Landscape plans accompanying the following plan types may be prepared by a Certified Professional
20 Horticulturist or a Chesapeake Bay Landscape Professional (Level 1):

- 21 • Minor subdivision
- 22 • A resubdivision of a previously approved subdivision that results in four or fewer buildable lots
- 23 • Site Development Plan for a single existing residential lot

24 A Certified Professional Horticulturalist (CPH) must be certified by the Maryland Nursery, Landscape and
25 Greenhouse Association, Inc. and hold a valid certification at the time of each landscape plan submission.

26 A Chesapeake Bay Landscape Professional (CBLP) must be certified by the Chesapeake Bay Landscape
27 Professional Program and hold a valid Level 1 certification at the time of each landscape plan submission.

28 2.2 Development Process Overview

29 As administrator of the subdivision and Site Development Plan review process, the Department of Planning
30 and Zoning is responsible for the review and approval of landscape plans.

31 The type of plan submission required depends on the zoning, type of **development** proposed, and number
32 of units created. Subdivision is required for the creation of any new lots. Landscape plans are required as
33 part of the Subdivision and Site Development Plans. A typical standard plan submission may progress
34 through these submission steps:

35 Environmental Concept Plan → Sketch Plan* → Preliminary Plans → Final Plans → Site Development Plan
36 Refer to the Department of Planning and Zoning website for current and more detailed **development**
37 process information.

1 2.3 Types of Landscape Plans Required by Plan Submission

2 2.3.1 Schematic Landscape Plans

3 Landscape requirements shall be considered in the earliest stages of plan preparation. Landscape
4 requirements must be identified schematically on the preliminary plan or preliminary equivalent sketch
5 plan. The intent of the schematic landscape plan is to ensure landscape requirements are considered
6 early in the design process and are an integral part of the development.

7 The following must be included on Preliminary Plans or Preliminary Equivalent Sketch Plans:

- 8 • Required landscape edges and the type of plantings for each edge should be identified.
- 9 • Identify preservation of existing vegetation, proposed plantings, or other alternative solutions.
10 Tabulate in a series of landscape notes and tables. Use appropriate schedules for each site
11 condition proposed on the project and include all applicable schedules on the Landscape Plan.
- 12 • Identify whether the developer or builder will be responsible for installation of specific elements
13 of the overall landscape plan.

14 The landscape information provided on a Preliminary Plan or Preliminary Equivalent Sketch Plan is not
15 unconditionally binding and may be revised during later stages in the planning process to respond to
16 **development** plan revisions or to unique site or program elements.

17 Refer to the Department of Planning and Zoning checklists for each plan type submittal.

18 2.3.2 Complete Landscape Plan

19 The Landscape Plan shall be part of a Final Plan or Site Development Plan submission. In general,
20 landscaping requirements that shall be part of each type of plan are as follows:

21 Final Plan

- 22 • Street trees
- 23 • Perimeter landscaped edges, if the responsibility of the developer
- 24 • Stormwater management areas
- 25 • **Parking lot** landscaping for single family attached projects
- 26 • Soil preparation and maintenance specifications

27 Site Development Plans

- 28 • Perimeter landscaped edges, if the responsibility of the builder
- 29 • Parking and loading area perimeter edges
- 30 • **Parking lot** internal planting
- 31 • Stormwater management areas
- 32 • Internal planting for mobile homes, single family attached units and apartments
- 33 • Soil preparation and maintenance specifications

34 Original Final Plans and original Site Development Plans shall include original Landscape Plans as part
35 of the original plan submissions and shall include required signature blocks.

36 Use appropriate schedules for each site condition proposed on the project and include all applicable
37 schedules on the Landscape Plan.

38 The Landscape Plan may be shown on a separate sheet or superimposed on another sheet within the
39 set of original plans. When combined with other sheets, notes should be clear regarding which elements
40 of the sheet are prepared and sealed by the Landscape Architect.

41 Separate planting plan sheets that include street trees and on-site landscaping must include Department
42 of Public Works and Department of Planning and Zoning signature blocks.

1 Landscaping that is required for a Final Plan shall be shown on the Road and Storm Drain construction
2 drawings. Planting required for minor subdivisions shall be shown on a supplemental sheet that shall be
3 submitted with the Final Plat.

4 Refer to the Department of Planning and Zoning checklists for each plan type submittal.

5 Refer to [Appendix D](#) and [Appendix E](#) for landscape installation and maintenance guidelines.

7 2.4 Other Design Manuals & New Town Zoning District

8 2.4.1 Other Design Manuals

9 Where discrepancies occur between requirements outlined in the Howard County Design Manuals and
10 Guidelines and requirements described in the Landscape Manual, requirements of the Design Manuals
11 and Guidelines prevail. Refer to the Department of Planning and Zoning website for current Manuals and
12 Guidelines.

13 2.4.2 New Town Guidelines and Additional Review

14 Property in the New Town Zoning District may be subject to review rights beyond that of Howard County
15 Department of Planning and Zoning. Please refer to the Architectural Review Committee (ARC) Review
16 Map maintained on the ProjectDox Plan Submittal Portal. As part of the plan submittal, projects subject
17 to ARC Review require a letter from Howard Research and Development (HRD), the Village Board
18 Architectural Review Committee (ARC), or other association(s) identified on the Howard Research and
19 Development ARC Review Rights Map stating that the plan has been prepared in accordance with their
20 guidelines.

21 There are also areas of New Town focused for redevelopment that are subject to additional landscape
22 requirement. The Downtown Columbia Plan identifies a boundary for downtown revitalization
23 redevelopment and increase density. There is the Downtown-wide Design Guidelines that include general
24 landscaping design standards that should be considered throughout the Downtown Columbia area. Six
25 neighborhoods are identified in the Downtown Columbia Plan. As Final Development Plans (FDPs) are
26 approved for the neighborhoods (neighborhoods may fall under multiple FDPs), they are included with
27 additional planning documents including Neighborhood Specific Design Guidelines to complement the
28 conceptual vision for individual areas for redevelopment. The Downtown-wide Design Guidelines and the
29 Neighborhood Design Guidelines can be found in the Community Planning - Community and Master
30 Plans webpage.

31 New Town Village Centers that are submitted for redevelopment are subject to additional zoning criteria.
32 For Major Village Center Redevelopment as defined in the Zoning Code, approval by the Zoning Board
33 is required. Landscape concepts and design guidelines are included in the Zoning Board case files.
34 Please see Section 125.0 of the Howard County Zoning Regulations for additional information.

35 Properties not subject to ARC review, Downtown design guidelines, or Major Village Center
36 Redevelopment should meet the requirements outlined in the Landscape Manual.

37 Surety for New Town planting shall be based on the approved landscape plan.

38 2.5 Exemptions

39 A landscape plan must accompany all preliminary, preliminary equivalent sketch, final or Site Development
40 Plans, with the following exemption:

41

- Resubdivisions and/or **revision plats** that create no new lots or parcel divisions

42 Partial exemptions to the landscape requirements apply to the expansion of existing uses under certain
43 criteria:

- 1 • Resubdivisions involving an existing dwelling(s) are required to provide landscaping for only the
2 new buildable lots.
- 3 • Expansion of an existing **parking lot** or loading area that increases the area or number of spaces
4 by 50% or more shall be required to provide landscaping for the entire **parking lot** or loading area
5 in accordance with these regulations. Expansions of less than 50% shall be required to provide
6 landscaping for the additional **development** only.
- 7 • Expansion to existing **development** shall be required to provide landscaping in accordance with
8 this manual as follows:
 - 9 ◦ Residential **development** that increases the number of built dwelling units shall be required
10 to provide perimeter landscaping for the project area. This requirement shall also apply to
11 redevelopment of existing lots meeting the definition of a recorded subdivision as defined
12 in the Subdivision and Land Development Regulations.
 - 13 ◦ A non-residential building that increases the existing floor area by 50% or more shall be
14 required to provide landscaping for the entire site. Expansion of less than 50% shall be
15 required to provide landscaping for the additional **development** only.
 - 16 ◦ A mixed-use **development** that increases the existing building footprint by 50% or more
17 shall be required to provide landscaping for the entire site. Expansion of less than 50%
18 shall be required to provide landscaping for the additional **development** only.

19 2.6 Installation, Surety & Inspections

20 Plant installation must conform to the current industry standards. Landscape Architects should be familiar
21 with current best practices cited in reputable trade publications such as the "Landscape Specification
22 Guidelines" published by the Landscape Contractors Association MD DC VA, and the American Standard
23 for Nursery Stock published by AmericanHort.

24 Sample plant installation guidelines and details can also be found in [Appendix D](#). To ensure a thriving
25 landscape, Landscape Architects should provide customized details and specifications based on the unique
26 conditions of each site and proposed plantings.

27 2.6.1 Posting of Surety & Inspection

28 Bonding or posting of other surety for required landscaping is mandatory. Surety is placed for total
29 required plantings, not the plantings provided after credit taken for existing individual trees. Existing
30 Forest Conservation easements are credited as a reduction in the linear feet of a perimeter and do not
31 result in added surety.

32 Surety may be posted as follows:

- 33 • Developer's Agreement for road and storm drain improvements (Final Supplemental and Road
34 Drawings) or for the Site Development Plan (SDP).
- 35 • When there is no Developers Agreement, landscape surety may be posted with the grading
36 permit agreement.
- 37 • In some instances, such as redline revision, when there is no Developers Agreement or Grading
38 Permit, a surety may be required through another process.

39 If the responsibility for landscape installation is transferred from the developer to another party, the surety
40 information attached to the Developer's Agreement or Grading Permit shall be amended to reflect this
41 change. It is the responsibility of the Developer or applicant that entered the agreement and posted the
42 surety to transfer the responsibility with the appropriate County agency.

43 Surety for landscaping shall be based on the total number of required plantings (shade trees, small
44 deciduous trees, evergreen trees, and shrubs) or comparable elements shown on the landscape plan.

1 Unit prices to be used for establishing surety requirements are approved by the County Council and are
2 subject to change each year. Refer to the Department of Planning and Zoning website for current
3 Landscape Inspection Fees and Surety amounts.

4 The Department of Planning and Zoning (DPZ) shall coordinate inspections with the authorized County
5 Landscape Inspector. Upon inspection, DPZ will notify the surety holder of the inspection results. Release
6 of surety will not be granted until:

- 7 • All landscaping shown on the approved Final Plan or Site Development Plan has been completed
8 in accordance with the approved landscape plan.
- 9 • A copy of the one-year warranty has been provided to DPZ
- 10 • The bond holder provides documentation on how the developer(s) has formally transferred long-
11 term responsibility for the required landscaping to the owner, tenant, homeowners association,
12 or other agent responsible for long-term maintenance of the **development** per [Section 2.6.2](#).

13 2.6.2 Owners and tenant responsibility after release

14 The developer is responsible for maintenance of the landscaping during construction and is responsible
15 for obtaining a 1-year warranty for the installed plant materials. The developer is responsible for
16 transferring responsibility for the required landscaping to the owner, tenant, homeowner's association, or
17 other agent responsible for maintenance.

18 Maintenance responsibilities include, but are not limited to, pruning, fertilizing, watering, mowing,
19 mulching, weeding, and other such activities necessary for the planting to thrive.

20 Plantings, **berms** or other landforms, fences and walls installed as part of the landscape requirements
21 shall be permanently maintained in good condition and, whenever necessary, replaced or repaired.

22 To ensure public safety, plant material should not be allowed to encroach on rights-of-way and easements
23 and impede motorists' vision of vehicular traffic. See [Section 3.2.3.g](#) for guidance on planting in sight
24 triangles and maintaining appropriate sight lines.

25 Review of redline revisions to Site Development Plans (SDP) or final plans (supplemental and/or road
26 plans) will include verification that the site is in conformance with the approved SDP or Final Plan.
27 Redlines will not be approved for modifications or changes in use until the site is brought into compliance
28 with the approved SDP. DPZ may approve a redline revision when the landscaping is not in compliance
29 if the revision clearly indicates the deficiencies and the owner signs a note on the plan certifying the
30 landscaping will be brought into compliance within one year. Inspection fees shall be paid. Failure to
31 restore missing plantings may delay processing by DPZ of building or grading permit applications, or in a
32 notice of violation.

33 2.7 Other Options to Meet the Regulations

34 Unique site conditions or a specific set of project design criteria may justify approval by the Department of
35 Planning and Zoning of an alternative proposal that meets the intent of the landscape requirements.

36 Examples of conditions which justify alternatives include situations where:

- 37 • Topography, soil, vegetation or other site conditions that make full compliance impossible or
38 impractical; or when improved environmental quality would result from the alternative.
- 39 • Space limitations, unusually shaped lots, and existing conditions on adjacent properties, or
40 redevelopment of sites in older communities.
- 41 • Expansion or change of use on an existing site requires a larger **buffer** or **screen** than is feasible
42 due to the lack of available space.
- 43 • Safety considerations.

1 The proposal must be equal to or better than standard compliance in terms of quantity, quality,
2 effectiveness, durability, and ability to fulfill the intent of the regulations and the Manual.

3 2.7.1 Options within Manual

4 Acceptable alternative methods to meet standard landscape requirements are included in the applicable
5 site condition sections.

6 Alternative methods proposed in lieu of standard requirements shall be noted on the landscape plan and
7 included in applicable required Schedules (e.g. Schedule A for perimeter landscape edge requirements).

8 2.7.2 Landscape Architect Proposed Alternative Landscape Plan

9 Landscape Architects may propose alternative plans that meet the intent of the Subdivision and Land
10 Development Regulations and Landscape Manual Intent as stated within. The landscape architect shall
11 request consideration of an alternative proposal by including a request letter to the Department of
12 Planning and Zoning (DPZ) with the plan submittal. The request must include written justification and plan
13 exhibits illustrating how the alternative better meets the intent of the regulations. Include sufficient written
14 and graphic explanation for evaluation by DPZ. Follow up meetings and discussions with DPZ may be
15 appropriate as DPZ evaluates the request.

16 Approval of alternate proposals shall be limited to the specific project under consideration and shall not
17 establish precedents for acceptance in other cases.

18 Alternatives proposed by professionals other than a Landscape Architect will not be considered or
19 evaluated by DPZ.

20 If approved, include a narrative note on the landscape plans summarizing the request and final approval
21 decision by DPZ.

22 2.8 Deferring

23 Projects requesting deferral of the landscape plan to a later plan submittal stage will still be required to
24 meet the full on-site landscape requirements outlined in the Landscape Manual. The granting by the
25 Department of Planning and Zoning of a deferral of landscape requirements to a future plan submittal shall
26 not be construed as justification for altering or eliminating landscape requirements.

27 When deferring landscape requirements to a future plan stage, the **development** team shall consider that
28 any design decisions that do not address the landscape requirements may risk future, additional design
29 modifications to previously approved plans. Additional review cycles may be necessary for the project to
30 meet the regulations and achieve approvable status.

31 Chapter 3 Landscape Requirements

32 3.1 Intent by Land Use / Development Type

33 This section includes the intent and guidelines for each land use type as they relate to landscape character
34 and requirements. These expectations should be referenced when proposing an alternative landscape plan
35 as discussed in [Section 2.7.2](#) of this manual.

36 3.1.1 Residential

37 Residential land use spans a wide range of density levels and required landscaping should be for the
38 specific project and scaled to the density and character of the residential zone and surrounding built
39 and/or natural environment. For example, subdivisions with large lot sizes should establish a more open
40 feel with views when compared to those with higher densities. Smaller lot subdivisions and many single
41 family attached or apartment communities may warrant landscapes designed for a more urban context.

1 The following are objectives for all residential land uses:

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- Preserve existing vegetation, particularly non-invasive healthy trees and shrubs
- Vary the location of trees as necessary to provide the best design for each lot, while meeting the intent of the landscape regulations
- Screen public view of private yard space and provide attractive views from the street, particularly on corner lots
- Shield side and rear yards from visual impacts from streets
- Design **open space** as amenity open space for use by neighborhoods and communities, rather than a fragmented mix of leftover green areas

10 For SFD and SFA developments, landscaping should be provided to help define public and private spaces
11 as well as reduce the visual impact of the streets, sidewalk and driveway pavement. Street trees are an
12 important feature of this intent and placement should be prioritized and coordinated with the individual
13 driveways, utility meters, grinder pumps, and other utilitarian features. Eliminating street trees is
14 discouraged.

15 In addition to these objectives, refer to the following sections for more guidance based on the project's
16 type of residential land use.

17 a. Single Family Detached

18 Low-to-medium density residential areas should include naturalistic landscape edges to create a
19 balance between residential communities and their natural surroundings, while also allowing the
20 opportunity for lawns and gardens surrounding single family detached buildings. Residents may
21 have the option to use trails or sidewalks to access their neighborhood's **open space**.

22 b. Single Family Attached

23 Medium-to-high-density residential areas that may be within or adjacent to mixed-use zones
24 should provide consistent tree plantings along sidewalks and streets to encourage livability
25 among its single-family-attached residents. The narrow street network with wide sidewalks,
26 shallow to medium building setbacks, and substantial tree coverage allows residents to
27 experience a sense of place and safety.

28 In addition to the objectives listed above:

29

30

- Provide inviting landscaped common areas such as entrances to common buildings,
walking paths, courtyards, playground and picnic areas

31 c. Apartments

32 High-density residential areas located in mixed-use zones should have street trees along
33 sidewalks and plantings along apartment buildings to enhance the overall experience of
34 pedestrians. Additionally, low-to-medium density residential areas may provide apartment
35 buildings with walking paths leading to landscaped **open space** areas, such as in playgrounds
36 and courtyards, that encourage residents to create a sense of community amongst neighbors.

37 In addition to the objectives listed above:

38

39

- Provide inviting landscaped common areas such as entrances to apartment buildings,
walking paths, courtyards, playground and picnic areas

40 d. Mobile Homes

41 Low-density residential within or adjacent to rural areas should provide mobile home
42 **developments** with landscape design that allows for both privacy and flexibility to promote a
43 sense of place while allowing occasional removal and replacement of mobile homes.

1 3.1.2 Open Space & Recreation Open Space

2 **Open space** should be designed with intention to provide useable, landscaped, and attractive space that
3 serves as an amenity for the community.

4 Landscaping of these areas can further this goal by:

- 5 • Clearly identifying these areas as common public spaces
- 6 • Separating the public space from private or utilitarian spaces such as private patios and refuse
7 collection areas
- 8 • Enhancing the visual quality of the neighborhood or **development**
- 9 • Providing a **buffer** from active recreation areas/facilities (such as play areas or tennis courts) to
10 residential rear or side yards and adjacent properties
- 11 • Providing amenities for office and commercial employees, retail shoppers, residents of high-
12 density, multifamily housing, and the public such as casual dining or eating areas
- 13 • Defining the entrances to and specific features of **open space** areas with plantings and other
14 landscape elements to create a sense of place
- 15 • Providing comfortable areas for active recreation spectators and passive recreation users
- 16 • Providing visibility and pedestrian access into **open space** areas from streets and **parking areas**
17 to encourage use and safety

18 Stormwater management (SWM) facilities, such as micro-bioretention, should be landscaped, located,
19 and integrated into the site design in such a way as to positively impact the **development** beyond the
20 required purpose of managing stormwater. When treated as an integral feature of the practical and
21 aesthetic site design, SWM facilities can become community amenities by supporting passive recreation,
22 bird watching, providing pollinator habitat, etc.

23 Additionally, landscape plans should encourage future residents to participate in other county initiatives
24 by providing **open space** designated for a Homeowners Association (HOA) or similar community groups
25 to use for future plantings. For example, the Bee City Program may provide grants and/or planning
26 assistance to create pollinator gardens in the **open space**. Notes should be included on the landscape
27 plan encouraging future HOAs or community members to contact the Bee City Coordinator in the Office
28 of Community Sustainability for more information and guidance on current programming. Refer to
29 development plan checklists for required and suggested general notes.

30 3.1.3 Ground-mount Solar Collectors

31 The intent of landscape requirements for ground-mounted solar collectors at small and large scales is
32 primarily focused on **buffering** views from adjacent roads and properties. Creating native pollinator
33 habitat as a component of solar facilities is highly encouraged.

- 34 • Use landscape design in a coordinated manner to buffer/screen ground-mounted solar collectors
35 and associated mechanical equipment from public view
- 36 • Locate and screen ground-mounted solar collectors in a manner that cannot be readily seen from
37 the public right-of-way or adjacent properties in residential or office-residential districts
- 38 • Screen with a principal or accessory structure, fence, wall, landscape elements, or a combination
39 thereof to enclose or block the view of ground-mounted solar collectors and associated
40 mechanical equipment
- 41 • Support climate forward initiatives with the use of native pollinator-friendly plants and
42 groundcovers in lieu of regularly mowed turf grass for the vegetative cover at solar facilities when
43 possible

1 3.1.4 Commercial

2 Low-to-medium density commercial uses at the transition between urban and rural areas should use
3 landscape edges to soften transitional uses between zones. Medium-to-high-density commercial
4 **development**, particularly in urban areas, should provide consistent tree plantings along sidewalks and
5 streets with additional plantings alongside buildings. Landscape should consist of hardy plant species
6 tolerant of soil compaction and minimal space.

7 Site and landscape design for commercial **developments** should address the following objectives:

- 8 • Provide landscape to enhance the economic vitality of commercial **development** along travel
9 ways, by softening views rather than **screening**
- 10 • Allow views into retail properties to assist wayfinding while softening **parking lots** from public
11 space/sidewalks
- 12 • Provide tree lines along the main travel routes that connect people from work, school, and
13 shopping to their homes
- 14 • Provide formal rows of trees along travel ways to define travel ways, create a green edge, and
15 provide continuity and scale
- 16 • Provide landscape areas between commercial properties to allow coordinated planting schemes
- 17 • Design landscaping to emphasize shading/cooling for pedestrians and patrons
- 18 • Screening of undesirable views such as service, trash and loading areas

19 3.1.5 Industrial

20 The intent of landscape requirements for industrial **developments** is primarily focused on **buffering**
21 incompatible adjacent land uses. Industrial land uses include heavy to light industrial, manufacturing,
22 auto repair and similar, and of all the non-residential land use types, industrial uses are least compatible
23 with residential uses, institutional uses, and public rights-of-way.

24 Site design shall use a coordinated combination of landscape elements to meet the following objectives:

- 25 • Provide a compatible transition or **buffer** between residential, commercial, or office uses and
26 more intense industrial uses
- 27 • Mitigate the environmental impacts associated with incompatible land uses, for example, **berms**
28 and sound walls are encouraged when sound is a concern or potential concern
- 29 • Shield residential uses, HOA **open space** and public **open space** from industrial uses and
30 associated nuisances – both real and perceived – regarding views, light trespass, odors, and
31 noise
- 32 • Screening of undesirable views such as service, trash and loading areas

33 3.1.6 Mixed Use, Institutional and Government Uses

34 Medium-to-high-density mixed-use, institutional, and government uses within urban areas should provide
35 consistent tree plantings along sidewalks and streets with planting alongside buildings. Landscape should
36 consist of hardy plant species tolerant of soil compaction and minimal space. Additionally, institutional
37 and government uses in lower density areas should use landscaping to provide appropriate transitions
38 between surrounding residential and/or commercial areas. The connections from mixed-use, institutional
39 and government **developments** to public **open space** can be highlighted by required landscaping and
40 encourage legitimate users.

41 Consider the following objectives during design:

- Ensure green areas, streets and drive aisles, and the spaces around and between buildings are attractively landscaped
- Promote green infrastructure, species diversity, and tree canopy in these areas
- Establish an enhanced visual relationship between civic, institutional, commercial, mixed-use, and industrial structures and their surrounding environments
- Landscape for passive energy conservation
- Reduce the negative effects of reflection and glare from paving, structures, or direct light from the sun, headlights, streetlights, etc.
- Enhance the aesthetic appearance of civic, institutional, and commercial areas and concentrations of industrial uses to increase economic viability for the surrounding neighborhoods
- Enhance the quality of public spaces and streets, especially in civic, institutional, mixed-use, and commercial **development**, to be pedestrian-friendly and engaging to the public
- Use Crime Prevention Through Environmental Design (CPTED) principles to increase safety by designing spaces that are more clearly visible and inviting to a wide range of uses, activating spaces and encouraging legitimate uses.

3.1.7 Historic Structures & Areas

Howard County's Historic Preservation Commission has review authority over Historic Properties. When conflicts arise between Landscape Manual requirements and HPC Design Guidelines and/or requirements, those of HPC prevail. Refer to the Historic Preservation Commission resources page found on the DPZ webpage for more information.

For properties of all land use types that are adjacent to historic properties, the historic character of adjacent historic properties should be respected when applying the landscape requirements in this manual. The following objectives should be considered during site and landscape design:

- Preserve the setting and frame significant views of historic properties and unique scenery from the road
- **Buffer** and **screen** historic structures from new **development** to separate incompatible uses visually and physically
- Retain significant landscapes and vegetation associated with historic properties

1 3.1.8 Scenic Roads

2 The Howard County Scenic Road regulation intent is to preserve the scenic character of the landscape
3 and the features of the road right-of-way that contribute to the road's character. Because scenic
4 landscapes vary greatly, design solutions for **development** will vary and should:

- 5 • Minimize tree and vegetation removal, emphasize the protection of healthy and contributing
6 vegetation adjacent to the **scenic road**, as well as mature trees and hedgerows visible from the
7 road
- 8 • Replace invasive and low value shrub and hedgerows with appropriate planting to enhance and
9 improve the scenic quality
- 10 • Use vegetation commonly found on the site or in the area for landscaping
- 11 • Minimize grading; retain existing slopes along the **scenic road** frontage
- 12 • Maintain visual character and minimize impacts to scenic views. For areas with open views,
13 preserve the foreground meadow, pasture or cropland and place **development** in the
14 background as viewed from the road. For areas with forested or wooded views, preserve and
15 enhance **buffers** of existing forest or wooded area between the **scenic road** and new
16 **development**.

17

1 3.2 Landscape Edges & Site Conditions

2 This section includes the description of and requirements for a range of landscape edge types and the
3 landscape requirements for various site conditions. Rates and calculations for the requirements are
4 provided within each site condition listed, including any applicable variations to required rates based on
5 different land uses or **development** type.

6 These requirements stipulate the quantity of plant materials that shall be provided to meet the requirements
7 of the regulations. Alternative methods to meet the intent are provided – refer to specific site conditions for
8 any applicable alternatives.

9 Landscape Plans shall include the Schedule(s) applicable to each site condition required for the project
10 site. See [Appendix B](#).

11 3.2.1 Landscape Edges

12 Several site conditions outlined in the following subsections require landscape edge plantings. The
13 purpose of the required landscape edge types is to provide varying levels of **buffering** and **screening** to
14 adjacent uses.

15 a. Landscape Edge Types

16 The planting requirements for each landscape edge type call for planting a specific minimum
17 number of shade trees, evergreen trees and/or shrubs.

18 Table 1 identifies the range of landscape edge treatments, from **buffer** to **screen**. All landscape
19 edge types require planting shade trees. In many categories evergreen trees are also required.
20 Shrub planting is required in Edge Types C, D and E. Designers are encouraged to provide **plant**
21 **communities** and increase **biodiversity** where possible using the plant substitutes options
22 provided in [Table 2](#).

23 **Table 1 – Landscape Edge Types**

Edge Type	Description	Shade Trees / Linear Feet	Evergreen Trees / Linear Feet	Shrubs / Linear Feet
A	Light Buffer	1:60	0	1:8
B	Moderate Buffer	1:50	1:40	1:8
C	Heavy Buffer	1:40	1:20	1:8
D	Screen	1:60	1:15	1:8
E	Parking Adjacent to Roadway (buffer)	1:40	0	1:4

1 a.1 Plant Type Substitutions

2 Except as otherwise noted within this manual, the following plant type substitutions may
3 be proposed for up to 50% of the requirements listed in **Table 1** provided the
4 substitutions meet the intent of the regulations:

Table 2 – Landscape Edge Plant Type Substitutions	
Required Plant Type	Substitution
1 Shade tree	2 Small deciduous trees, or 2 Evergreen trees, or 10 Shrubs
1 Evergreen tree	5 Shrubs
1 Shrub	3± perennial grasses*, or 5± herbaceous perennials*

* Minimum 1 gallon or #1 container installation size; ± quantities may be adjusted according to selection with justification or explanation from the Landscape Design professional

5 b. Calculations & Plant Spacing Guidelines

6 Plant material requirements are based on linear feet of property line or other applicable site
7 condition.

8 Calculations of required plant quantities shall be rounded up to the next whole number.

9 When the property line is crossed by a right-of-way, use-in-common access area or non-residential
10 **driveway**, the width of these areas shall not be computed as part of the total linear footage of the
11 required **perimeter landscape edge** (see **Section 3.2.2**). No more than 15% of the required strip
12 shall be covered with an impervious surface for pedestrian circulation or use.

13 Examples of landscape edge calculations and illustrations of planting schemes that fulfill the
14 requirements of the regulations are provided in **Appendix A**.

15 Plant materials should be chosen and located to achieve the desired level of **buffer** or **screen** per
16 the edge type descriptions in Table 1.

17 Guidelines for plant spacing to achieve an effective **screen** or **buffer** is as follows:

- 18 • Planting requirements listed in Table 1 are not spacing requirements; they are the means
19 to calculate the quantities required.
- 20 • Plant materials may be clustered in groups or planted in rows.
- 21 • To create an effective dense **screen**, evergreen trees should generally be 10-15 feet on
22 center unless a particularly narrow species or cultivar is used. Trees should be clustered
23 in locations that are the most effective in **screening** undesirable views.
- 24 • Shade trees create a light buffer, open at ground level but with canopies that may
25 eventually touch if clustered at a spacing of 25 feet on center.
- 26 • Clusters of small deciduous trees are generally an effective buffer when planted 15-20
27 feet on center.

28 Required planting in any landscape edge may be transferred to another area elsewhere within the
29 project boundary, if such transfer meets the intent of the regulations. This method may be
30 evaluated and approved on a project-by-project basis by the Department of Planning and Zoning.

1 c. Plant Size Requirements

2 The size of required plants at the time of installation shall be as follows:

- 3 • Shade trees must be a minimum of 2-1/2" **caliper**.
- 4 • Small deciduous trees (single-stem and multi-stem species) must be at least 8' height at
5 installation. Single stem species must also be a minimum of 1-1/2" **caliper**.
- 6 • Small deciduous trees used to meet street tree requirements must be single-trunk
7 specimens and a minimum of 2-1/2" **caliper**.
- 8 • Small deciduous trees provided as a 1:1 substitution for internal landscape requirements
9 must be a minimum of 2-1/2" **caliper**.
- 10 • Most evergreen trees must be at least 6' height at installation. Refer to the recommended
11 plant list maintained on the DPZ website for updates to accepted variations in size
12 requirements.
- 13 • Shrub plantings for Landscape Edge Type E must be a minimum of 24" height at
14 installation.
- 15 • Shrub plantings proposed as a substitute for required trees for all Landscape Edge
16 Types, must be a minimum of 24" height.
- 17 • Minimum shrub sizes must be provided in accordance with the requirements of the site
18 conditions outlined in the following subsections. Where a Site Condition does not specify
19 a minimum shrub size, a minimum size of 24" height shall be provided.

20 Plant sizes shall be in accordance with ANSI Z60.2 *American Standard for Nursery Stock*, latest
21 edition.

22 3.2.2 Perimeter Landscape

23 **Perimeter landscape edges** are required for all land uses and **development** types. This section
24 describes the standard requirements and alternative methods for meeting the landscape requirements
25 for a project's perimeter landscape plantings.

26 a. Standard Requirements

27 **Perimeter landscape edges** are required along the outside boundary of a property or
28 development. The regulations do not require landscape edges between **internal lots or parcels**
29 **within the same development**. However, perimeter landscaping is required for the redevelopment
30 of internal lots within recognized subdivisions (as defined in Section 16.108(b)(44)(iii)¹ of the
31 Subdivision and Land Development Regulations) that were recorded prior to the Howard County
32 approval requirements as defined in subsection (i) and (ii) of Section 16.108(b)(44).

- 33 • For cluster subdivisions in the Rural Conservation and Rural Residential districts, the
34 **perimeter landscape edge** shall be located at the perimeter of the cluster subdivision,
35 not at the perimeter of the entire parcel. It is not intended that the preservation parcel be
36 buffered or screened from adjacent properties.

37 **Perimeter landscape edges** for **buffering** or **screening** and their required edge type are based
38 on land use. The type of required **buffer** or **screen** is determined by the degree of compatibility
39 between the site uses and adjacent land uses.

¹ See also Section 2.5 of this Manual. Expansions to existing developments that increase the number of residential units shall be required to provide perimeter landscaping between the proposed development and existing residential development.

- 1 Where possible, the **perimeter landscape edge** should be planted within the required
2 setbacks established by the County Zoning Regulations.
- 3 Buildings, parking, loading areas, stormwater management facilities, utility easements,
4 storm drainage channels, play areas, drive aisles, parking spaces and similar uses may
5 not be located in **perimeter landscape edges**.
- 6 Necessary pedestrian circulation, utility easements and access **driveways** may cross
7 the **perimeter landscape edges** perpendicularly. Site design should create a balance
8 between the required and proposed elements.
- 9 Upon approval of the Department of Planning and Zoning and the Department of Public
10 Works, necessary utility or other easements may overlap with up to 25% of the required
11 edge, provided that the required landscaping may be placed in the reduced area.

12 b. Tables – Perimeter Adjacencies

Table 3 – Landscape Edge Adjacent to Roadways		
Land Use ¹	Orientation of Structure or Use to Roadway	Landscape Edge Type ²
Single Family Detached (SFD)	Front Side / Rear	None B
Single Family Attached (SFA) & Mobile Homes	Front Side / Rear	None C
Apartments	All Sides	B
Non-Residential	Front / Side Rear Rear – if Loading	B C D
Parking	N/A	E

¹ Residential **open space** and unbuilt areas of a non-residential **development** are considered to have the same land-use as the principal use.

² Landscape Edge Types are provided in Table 1.

Table 4 – Landscape Edge Adjacent to Perimeter Properties		
Land Use ^{1,2}	Adjacent Land Use ^{1,2}	Landscape Edge Type
Single Family Detached (SFD)	All Uses	A
Single Family Attached (SFA), Mobile Homes & Apartments	SFD SFA & Mobile Homes All Other Uses	C B A
Non-Residential (Commercial ³ , Institutional) & Mixed Use	Residential All Other Uses	C A
Non-Residential (Industrial)	Residential Public Open Space All Other Uses	C C A
Loading	Residential All Other Uses	D C

¹ Residential **open space** and unbuilt areas of a non-residential **development** are considered to have the same land-use as the principal use.
² Rural Preservation Easements are considered residential uses
³ Commercial solar facilities require a type D buffer, see [Section 3.2.10](#)

1 c. Native Plants & Biodiversity requirement

2 Plantings required for **perimeter landscape edges** shall meet the Native Plants & Biodiversity
3 requirements outlined in [Section 4.1](#).

4 Creating **plant communities** within **perimeter landscape edges** by including layers of
5 herbaceous perennials and grasses is encouraged. See permitted substitutions provided in [Table](#)
6 2.

7 d. Alternative Methods

8 A variety of landscape treatments other than the planting stipulated in [Table 1](#) may satisfy
9 landscaping requirements. Alternative methods that may satisfy the landscape requirements
10 include:

11 d.1 Preserving Existing Trees

12 The landscape planting requirement may be met by preserving existing trees, except for
13 **invasive species**. Individual trees may be credited toward meeting part or all of the
14 landscape edge requirements. The existing trees under consideration for preservation shall
15 be an equivalent tree type as required in the applicable landscape edge table. An existing
16 landscape **buffer** may completely satisfy the landscape edge requirements if the existing
17 **buffer** contains an equal number and type of trees as required in the applicable landscape
18 edge table. Existing trees intended to satisfy the landscape edge requirements must be in
19 good or excellent condition (as determined by a licensed arborist, forester, Certified
20 Professional Horticulturist or Landscape Architect) and must not be an **invasive species**.

21 Please note that the existing trees / trunks of the tree must be fully within the legal property
22 boundary to be credited and to ensure they remain as part of the approved plan.

23 Existing trees proposed for credit shall be shown and labeled on the landscape plan and
24 planting schedules for clarity in the plan review and for landscape inspection purposes.
25 The species, condition, and **caliper** of the existing trees must be provided to receive credit.

1 The critical root zone of the existing trees must also be protected prior to and during
2 construction with the current best practices for tree preservation. Include protection details
3 and specifications on the landscape plans and in the sequence of construction in the
4 grading and sediment and erosion control plan sheets.

5 As part of an approved plan, existing trees must be maintained and replaced as necessary
6 in perpetuity.

7 **d.2 Development adjacent to Existing Forest Conservation Easement**

8 An existing retention forest conservation easement located along the property boundary
9 may meet **perimeter landscape edge** requirements. The easement may be off-site
10 along the shared property line and must be recorded and in good standing (i.e. has no
11 issues with bond, no complaints, and no unresolved violations).

12 **d.3 Proposed Forest Conservation Easement**

13 Tree plantings proposed to meet Forest Conservation reforestation and/or afforestation
14 requirements may be used to meet **perimeter landscape edge** requirements provided
15 that:

- 16 • The proposed easement is within the project area and not an off-site planting
17 area
- 18 • Tree size at time of installation is a minimum of 2-1/2" **caliper**
- 19 • Tree plantings meet location criteria described in the Landscape Manual
- 20 • Tree plantings meet surety requirements
- 21 • Tree plantings are located in a Forest Conservation Easement proposed to be
22 recorded and bonded with the proposed subdivision or development

23 **d.4 Berm or Grade Change**

24 A **berm** that is a minimum of 3 feet high, or a change in grade that causes a **parking lot**
25 to be located lower than the adjacent roadway by 3 feet or more, may be substituted for
26 100% shrub planting in a Type E landscape **buffer**. **Berms** may be substituted for
27 evergreen trees or shrubs in meeting the intent of other perimeter landscaping
28 requirements. In general, **berms** that **buffer** new **development** from an adjacent
29 roadway should be a minimum of 3 feet high if the front or side of the structure(s) abut
30 the roadway, and a minimum of 6 feet high if the rear of the structure or a loading area
31 abuts the roadway. **Berms** between similar uses (i.e. residential to residential or non-
32 residential to non-residential) should be a minimum of 3 feet high. Non-residential uses
33 adjacent to residential properties should provide **berms** that are a minimum of 6 feet high
34 to obtain a credit towards provision of required plant materials. In no instances will
35 **berms** be substituted for required shade tree plantings.

36 **d.5 Fence, Wall or Hedge**

37 A fence, wall or **hedge**, even when provided along the entire length of the perimeter, may
38 only be credited towards meeting up to 50% of the required **perimeter landscape edge**
39 plantings, except as noted below.

40 A fence, wall or **hedge** may be credited towards meeting up to 100% of the required
41 **perimeter landscape edge** plantings in the following conditions:

- 42 ○ Site access areas
 - 43 ○ When the **driveway** can not provide required 10' width landscape area.
44 See Section 16.120 of the Subdivision and Land Development
45 Regulations.
 - 46 ○ When a change in use for an existing lot from residential to another non-
47 residential approved use (either by right or through conditional use

1 approval) requires additional screening and the existing conditions
2 restrict planting areas.

3 o When used as screening between residential and commercial use, a privacy
4 fence may be proposed when plantings might restrict the usable back yard area.
5 Applicable to single family detached or single family attached development only.

6 A fence, wall or hedge may be credited towards a reduction of the required *perimeter*
7 *landscape edge* plantings in the following conditions:

8 o Apartments and multifamily developments may have a fence along a perimeter
9 between the residential development and a non-residential development. In this
10 case, the perimeter requirement shall include a shade tree every 40 feet. No
11 substitutions without justification from the development team and approval by the
12 Department of Planning and Zoning. The intent is to offer a visual buffer between
13 the residential and non-residential uses when viewed from upper stories of
14 apartment or multifamily buildings.

15 If walls, **hedges** and fences are proposed in lieu of some or all of the required landscape
16 plantings, the designer shall provide written justification for the substitution for review and
17 approval by Department of Planning and Zoning (DPZ) on a plan by plan basis.

18 DPZ may require at least 1 tree per 40-60 linear feet of wall or fence or one shrub or vine
19 per 10 linear feet of wall or fence. Where walls or fences abut a public or private road
20 right-of-way, the planting should be on the street side of the wall.

21 A masonry wall or solid fence at least 5 feet high must be provided between adjacent
22 land uses or where rears of residential buildings or loading areas abut-roadways. A wall
23 or fence at least 3-1/2 feet high is needed where **parking lots** abut roadways or where
24 the fronts or sides of buildings abut roadways. In the latter case a solid or semi-
25 transparent fence or wall may be approved.

26 Design professionals are advised to consult the Zoning Regulations to verify proposed
27 fences meet the setback requirements.

28 3.2.3 Street Trees (Public & Private Roads)

29 Street tree requirements must be met in addition to the requirements for perimeter and internal
30 landscaping required in Section 16.124 of the Howard County Subdivision and Land Development
31 Regulations. **Street tree requirements must be calculated separately from all other landscape**
32 **requirements.**

33 Street trees should be located in the road right-of-way either adjacent to the road pavement or within a
34 landscaped median – see [Section 3.2.3.f](#) for more location guidance and requirements.

35 Street trees must be provided for public and private rights-of-way in all districts and shall be at least 2-
36 1/2 inch **caliper** at time of installation.

37 Required rate and spacing of street trees:

38 o **1 shade tree per 40 linear feet of right-of-way**
39 o **1 small deciduous tree per 30 linear feet of right-of-way (when proposed as a substitute**
40 **for shade trees)**

41 Refer to [Section 3.2.3.e](#) for streetscape layout and alternative street tree spacing.

42 Refer to [Section 4.2](#) for Street Tree Selection Criteria.

1 a. Existing trees

2 Roadway alignments should seek to preserve existing forest, stands of mature trees, and
3 specimen trees on all **development** sites. The preservation of these types of vegetation adjacent
4 to public rights-of-way is encouraged. The Forest Conservation Manual, arborists and tree
5 specialists should be consulted for appropriate methods of tree preservation. Credit for up to
6 100% of the street tree planting requirement may be granted for preservation of existing trees,
7 except for **invasive species**, immediately adjacent to the right-of-way.

8 b. Maintenance easements

9 If utilities cannot be configured to provide sufficient space for street tree planting within the right-of-
10 way, the Department of Planning and Zoning may approve a location in a street tree maintenance
11 easement adjacent to the right-of-way. The typical street tree maintenance easement is 10 feet
12 wide.

13 c. Interaction with perimeter landscape edge plantings

14 Trees required to satisfy perimeter landscaping requirements may be planted within the public right-
15 of way if approved by the Department of Planning and Zoning and the Department of Public Works.
16 Street trees planted adjacent to the right-of-way may be clustered with existing trees or proposed
17 perimeter landscaping to provide a more effective **buffer** or **screen** to satisfy the intent of the
18 ordinance. This option must also be approved by the Department of Public Works and the
19 Department of Planning and Zoning.

20 d. Interaction with parking lot plantings

21 In single family attached or apartment **developments** where **internal roads** are designed as part
22 of the **parking lots**, internal **parking lot** landscaping provided in accordance with the requirements
23 of Section 16.124 of the Howard County Subdivision and Land Development Regulations and
24 [Section 3.2.5](#) of the Landscape Manual shall satisfy street tree obligations.

25 Internal parking lot landscaping will be allowed to fulfill street tree requirements only for those
26 segments of the roadway that are lined with parking spaces perpendicular to the roadway.

27 e. Typical Layout vs. Informal Clustering

28 A typical street tree layout results in regular spacing of trees at the required 30 or 40 feet on center,
29 depending on tree type. Slight variations to this regular spacing may be required due to utility
30 conflicts, access easements, private **driveways** and roads – see [Section 3.2.3.f](#) for more
31 guidance.

32 However, if the number of street trees provided in a subdivision or **development** meets the intent
33 of the spacing requirements, the Department of Public Works and the Department of Planning and
34 Zoning may approve clustering of street trees.

35 Clustering of street trees could result in the location of trees within the right-of-way and in street
36 tree maintenance easements adjoining the right-of-way. Spacing of trees in clusters could result in
37 the spacing of small deciduous trees at 15-20 feet apart and the spacing of shade trees at 25-30
38 feet apart. In such cases, gaps between clusters could be double the spacing required above.
39 [Appendix A, Figure 4](#) depicts typical street tree layout and informal clustering of street trees.

40 f. Street Tree Location Requirements

41 Trees shall be placed a minimum of 30 feet from all signs and intersections when planted between
42 sidewalk and curb and be located with consideration of underground utilities and structures.

43 When trees are planted within 8 feet (96 inches) of curb, roadway, sidewalk or other pavement,
44 tree **root barrier** or other physical barrier proposed to prevent root intrusion and heaving is

1 required. Root barrier is also required when planting trees between a sidewalk and road and for
2 trees otherwise surrounded by impervious pavement. Refer to [Appendix D.6](#) for more information.

3 [Appendix A, Figure 5](#) illustrates required adjustments to the layout of street trees. The following
4 standards shall govern the placement of street trees in public rights-of-way:

5 f.1 Street trees at roads with no sidewalk

6 Trees shall be planted 6 feet behind the curb.

7 f.2 Street trees at roads with sidewalk and required buffer zone

8 Refer to the applicable street type in the current Howard County Design Manual –
9 Volume III, Complete Streets and Bridges for the required **buffer zone** width.

10 When the distance between the curb and sidewalk meets the required **buffer zone** width,
11 trees shall be located within the right-of-way and shall be centered between the curb and
12 the sidewalk.

13 f.3 Street tree at roads with sidewalk and less than required buffer zone

14 Refer to the applicable Complete Streets street type for the required **buffer zone** width.

15 When the distance between the curb and the sidewalk is less than the required **buffer**
16 **zone** width, trees may be planted 3 feet from the sidewalk in the direction away from the
17 road. A 10 foot wide tree maintenance easement shall be required if the right-of-way is
18 limited.

19 f.4 Street tree at open space access point

20 Street trees may not be planted within 5 feet of an **open space access point**.

21 g. Sight Triangles

22 g.1 Private driveways and roadways abutting public roadways

23 Street trees shall not be located within 10 feet of a **driveway**.

24 When a **driveway** or private roadway intersects a public right-of-way or when the site
25 abuts the intersection of two or more public rights-of-way, all landscaping within the sight
26 triangle areas shall provide unobstructed across-visibility.

27 g.2 Landscape must be unobstructed across-visibility within sight triangle

28 Nothing at an elevation greater than the top of curb plus two (2) feet shall be allowed in
29 any sight triangle area except single-trunk trees, provided that the lower branches are
30 pruned provide visibility from the ground to a height of seven (7) feet.

31 h. Scenic Roads

32 Hedgerows, existing mature trees and/or forest along the rights-of-way and edges of **scenic roads**
33 shall be preserved to the maximum extent practical. Refer to the current Howard County Design
34 Manual – Volume III, Complete Streets and Bridges Manual and Howard County Code Section
35 16.125 for additional guidance on landscaping and maintenance along **scenic roads**.

36 Where sufficient and acceptable vegetation does not exist or cannot be preserved, street trees and
37 **perimeter landscape edge** plantings proposed to meet requirements along rights-of-way
38 designated as a “**scenic road**” shall:

- 39 • be a **native species**, commonly found on the site or in the surrounding area
- 40 • be planted to mimic and enhance the existing character of the **scenic road**

1 3.2.4 Utility Easements and Overhead Power Lines

2 a. Small deciduous trees required below overhead power lines

3 Whenever possible, proposed trees should be located a sufficient distance away from existing
4 overhead power lines to allow trees to mature without disturbance from standard vegetation
5 maintenance typically associated with existing overhead power lines. However, when locating trees
6 under overhead power lines is unavoidable the following requirements apply.

7 Landscape policies for trees located below or within close vicinity of overhead wires are based on
8 BGE's recommendations, which advise the following:

9 o Trees planted within 20 feet on either side of pole-to-pole power lines shall have a mature
10 height of 25 feet or less.
11 o Trees with mature heights greater than 25 feet should be planted at a distance away from
12 overhead wires that is equal to or more than the expected mature height of the tree.

13 The following guidelines stipulate the maximum allowable size of trees located near overhead
14 power lines for three defined zones.

Table 5 – Maximum Height of Trees near Overhead Power Lines		
Zone	Distance from BGE power line	Maximum height of mature tree
Green	Up to 20 feet	25 feet
Yellow	20 feet – 40 feet	40 feet
Red	Beyond 45 feet	> 40 feet

15 When requirements for shade trees are located within 20 feet of existing overhead wires,
16 substitutions for the use of small deciduous trees in lieu of shade trees will be accepted at
17 a 1:1 ratio versus the typical 2:1 ratio.

18 b. Underground utilities and utility easements

19 Trees shall not be planted in utility easements or within 5 feet of a storm drain inlet structure.

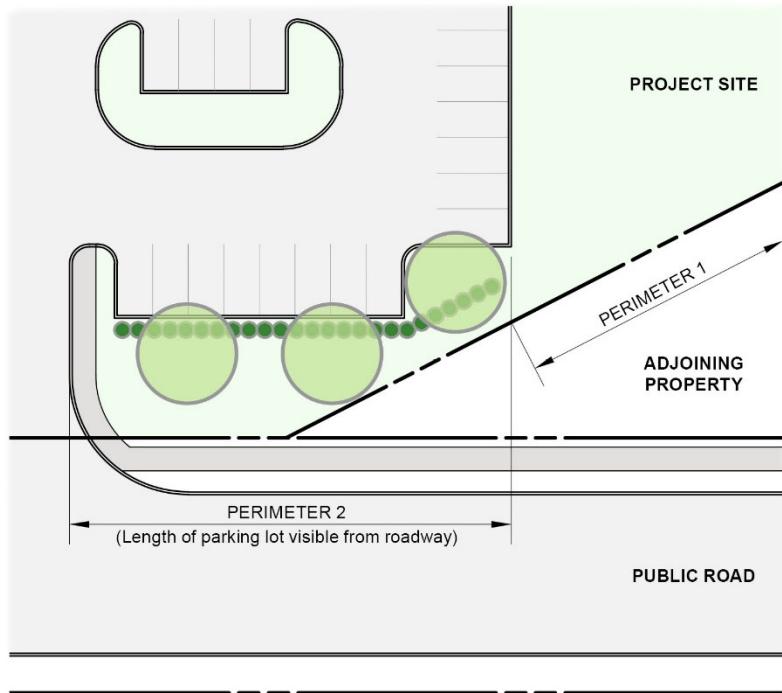
20 3.2.5 Parking Lots

21 Landscape requirements for **parking areas** should be designed not only to improve aesthetics and traffic
22 flow but also to reduce the urban heat island effect, manage stormwater, and increase climate resilience;
23 and when possible, support other County initiatives and programs such as the Bee City program.
24 Landscaped islands should be prioritized as opportunities to plant large-canopy native trees that
25 maximize shading of impervious surfaces and create a multi-layer **plant community**. These areas can
26 also be designed to function as stormwater bioretention features that reduce runoff and filter pollutants.

27 a. Parking Lot Perimeter

28 Requirements for **buffering** of **parking areas** are intended to reduce the visual impact of
29 automobiles and large expanses of paving from adjacent roadways and from abutting properties.

30 Typically, adjacent and abutting means the project boundary shares a boundary with the road right-
31 of-way (ROW). However, in cases where a property is oddly shaped and does not technically share
32 the ROW boundary, but the parking is visible from the roadway, the perimeter measurement should
33 include the entire visibly adjacent parking. See example in Image 1 below.



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Image 1

Requirements for ***parking lot*** perimeters are as follows:

For parking lots adjacent to roadways, a Type E landscape edge is required.

The combination of low shrubs and shade trees is intended to partially screen parked cars from adjacent roadways, while still allowing for some visibility into the site. The public safety goal of this treatment is to prevent headlight beams from reaching the travel lanes of the adjacent roadway.

The intent of the Type E landscape edge requirement for this site condition is to create a minimum **buffer** height of 3 feet through the use of shrubs, or an alternative method, such as a change in grade, a **berm**, a fence or wall. The alternative methods for **perimeter landscape edges** can be applied to required landscape edges for ***parking lots*** adjacent to roadways – see [Section 3.2.2.c.](#)

For parking lots adjacent to adjoining properties, use the required perimeter landscape edge type specified in [Section 3.2.2.a.](#)

Perimeter ***parking lot*** landscape requirements may exceed those specified in the landscaping regulation for:

- 16 ○ special exception uses approved by the decision and order issued by the Board of Appeals
- 17 ○ plans approved with modifications by the Planning Board
- 18 ○ plans requiring other approval processes

a.1 Commercial areas

In most commercial areas, the desire to identify buildings from the roadway requires that eye level sight lines be preserved. Thus, the use of evergreen trees or small deciduous trees with low canopies may not be desirable.

However, for commercial ***parking lots*** adjacent to residential land uses, required planting should be clustered in the areas where it is most needed to **buffer** or **screen** objectionable views. In such instances, it may be appropriate to substitute evergreen trees, small deciduous trees or shrubs for the required perimeter shade trees.

1 a.2 Residential areas

2 In residential areas, the preservation of existing vegetation as a **buffer** between **parking**
3 **areas** and roadways or other perimeter land uses is strongly recommended.

4 Substitution of evergreen trees or small deciduous trees for required shade trees may be
5 appropriate to **buffer** residential communities from surrounding roadways.

6 For residential **parking lots** adjacent to other residential properties, clustering of
7 evergreen trees or use of dense mixed plantings between the **parking areas** and the
8 property perimeter is recommended.

9 b. Internal Landscaping

10 All **parking lots** must provide permanently landscaped areas consisting of planted islands,
11 peninsulas, or medians within the interior of the lot. Landscaped areas should divide lots into groups
12 of parking spaces to relieve the monotony of large expanses of paving and contribute to efficient
13 and safe circulation of traffic in the **parking areas**.

14 Expansion of an existing **parking lot** or loading area that increases the area or number of spaces
15 by 50% or more shall be required to provide landscaping for the entire **parking lot** or loading area
16 in accordance with these regulations. Expansions of less than 50% shall be required to provide
17 landscaping for the additional **development** only.

18 Required **buffering** along the perimeter of any **parking lot** cannot be credited as part of the interior
19 landscaping requirements. Moreover, where a **parking lot** abuts buildings on the site, plantings
20 adjacent to those buildings shall not be considered as part of the interior landscaping requirements.

- 21 • Landscaped islands shall be minimum of 12 feet in width (face of curb to face of curb)
22 and a minimum of 200 square feet.
- 23 • The island should be completely curbed or otherwise protected from vehicle traffic. Curbs
24 may be constructed to include curb cuts or areas of flush curb allowing stormwater runoff
25 to flow into the landscape island when it also serves as a stormwater management
26 biorientation area.
- 27 • Walkways located within a landscaped island are permitted, but shall not be counted as
28 part of the minimum width or area of the island.
- 29 • The primary trees to be used in **parking lots** shall be shade trees. Trees that produce
30 large fruits or nuts, such as oak trees, are prohibited in parking areas.
- 31 • Small deciduous trees or evergreen trees may be used if it can be demonstrated that
32 they will not inhibit visibility and safe circulation of pedestrians and vehicles. When
33 allowed, small deciduous trees and evergreen trees must be substituted for shade trees
34 at a 2:1 ratio, up to a maximum of 50% of the required shade trees.
- 35 • Use of shrubs, perennials and grasses is encouraged to create **plant communities**,
36 however, substitution for required shade trees does not meet the cooling intent and is
37 not accepted unless the substitutions area proposed as part of a **parking lot** proposing
38 solar canopies. Refer to [Section 3.2.10.b](#) for **parking lots** with existing or proposed
39 solar canopies.

40 b.1 Standard Calculation

41 Internal parking lot landscaping shall be shown on the Site Development Plan, and
42 Landscape Plans shall include Schedule C (see [Appendix B](#)).

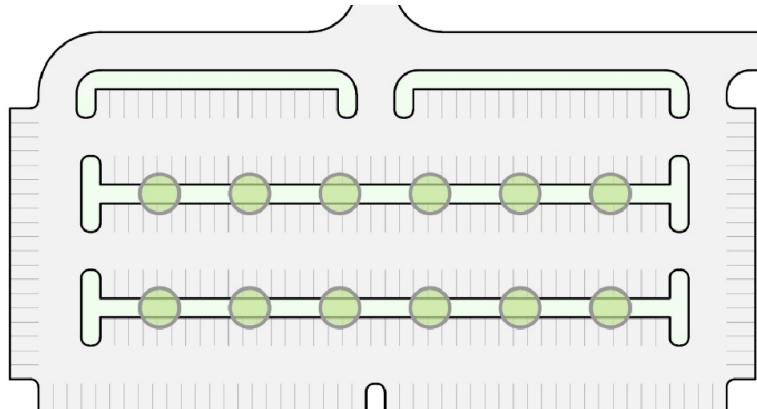
Table 6 – Parking Lot Internal Landscaping			
Land Use	Landscaped Islands (ratio)	Shade Trees	Max. grouping of parking spaces without island
Residential: Single Family Attached, Apartments	1:10 spaces	1:10 spaces	12 spaces
Non-Residential	1:20 spaces	1:20 spaces	24 spaces

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2 b.2 Alternate Calculation
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11 For **parking lots** with islands between bays of parking spaces that create long
12 contiguous planting areas with trees, groups of parking spaces without islands may
13 exceed the maximum grouping listed in Table 6.

14
15 When this option is used the requirements for shade trees shall be **1 shade tree per 60**
16 **linear feet of parking lot island between parking bays.**

17
18 For example, as shown in Image 2, if the parking lot island separates two parking bays
19 with groups of forty (40) 9-foot-wide parking spaces (360 linear feet), 6 shade trees are
20 required, totaling 12. Using the standard calculation in Table 6, based on 280 parking
21 spaces, 14 trees would have been required.



12
13 Image 2

14 b.3 Residential Parking Lots
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17 **Parking lots** for single family attached and apartment dwelling units shall have 1
18 landscaped island per 10 parking spaces and 1 shade tree per 10 parking spaces. This
19 requirement does not necessarily mean that an island with a shade tree must occur every
20 10 spaces; the requirement is a means of calculating planting requirements. Grouping of
21 parking spaces should generally not exceed 12 in a row for residential land uses.

22 Landscaped areas in residential **parking lots** may be internal islands and peninsulas,
23 perimeter corner green areas formed where two rows of parking spaces abut or
24 peninsula areas formed where **parking areas** and access roads or entrance **driveways**
25 abut. Trees provided to meet internal planting requirements may be located in internal
26 landscaped areas, perimeter corner areas or entrance area peninsulas. See **Appendix**
27 **A, Figure 6.**

28
29 As described in **Section 3.2.3 Street Trees**, internal parking lot landscaping provided in
30 single family attached **developments** will satisfy the street tree obligations for internal
31 public rights-of-way. In such cases, plantings within the public right-of-way need not be

1 shown on the road construction drawings, but must be included on the Site Development
2 Plan.

3 **b.4 Non-Residential Parking Lots**

4 **Parking lots** for office, industrial, retail, institutional and related commercial uses shall
5 have 1 landscaped island per 20 parking spaces and 1 shade tree per 20 parking spaces.
6 This requirement is a means of calculating planting obligations.

7 Grouping of parking spaces should generally not exceed 24 in a row for commercial and
8 institutional lands uses but may be permitted at up to 30 in a row for large regional
9 shopping centers and malls. In large **parking lots**, the creation of large islands that
10 permit the planting of groups or rows of trees is encouraged. A large island should be the
11 equivalent square area of four 200 SF islands and break up a double row of parking
12 strips.

13 Landscaped areas may be internal islands and peninsulas. Trees provided to meet
14 internal planting requirements must be located in internal landscaped areas except when
15 displaced by parking lot solar canopies (refer to [Section 3.2.10.b](#)). See [Appendix A](#),
16 [Figure 7](#) for non-residential parking lot example.

17 **3.2.6 Parking Structures**

18 Landscape requirements for parking structures are intended to screen view of cars at the ground level
19 and minimize view of monotonous building mass. Masonry walls and ground level plantings should
20 provide screening between column supports where the ground level is occupied by vehicle storage.

21 Where parking structures are located along public streets, landscaping the area between the sidewalk
22 and the face of the structure with a second row of street trees and ground level plantings is encouraged
23 where possible.

24 Where parked vehicles can occupy the ground level and would be visually open to the street:

25 **Provide Type E landscape edge plantings in addition to street trees required in**
26 **Section 3.2.3.**

27 **3.2.7 Loading & Service Areas**

28 Loading and service areas include dumpster and compactor areas, residential trash collection pads, truck
29 loading facilities, dock areas, drive-in loading bays and at grade service entrances to structures.

30 An enclosure shall be provided for dumpsters or trash bins, except for dumpsters internal to an industrial
31 **development** that will not be seen from the public road or adjacent non-industrial uses. Enclosures shall
32 be primarily opaque and may consist of fencing, brick or masonry walls; additionally, enclosures may be
33 extensions of the building architecture with consistency of materials, color and design.

34 For loading and service areas adjacent to roadways or residential properties:

35 **Provide a Type D landscape edge between the loading or service area and any public**
36 **or private road, residential structure or lot.**

37 For loading and service areas adjacent to perimeter boundaries other than those specified above:

38 **Provide a Type C landscaped edge**

39 Permitted plant type substitutions for loading and service areas include only small deciduous trees,
40 evergreen trees, and shrubs. Herbaceous perennials and grasses are not suitable substitutions for
41 **screening** loading and service areas.

42 The linear feet of landscape edge shall be measured along all portions of the perimeter of the loading
43 and/or service area facing the adjacent property or roadway. **Screen** or **buffer** plantings shall be
44 designed and located in a manner that does not impair sight distances at intersections.

1 Landscape requirements for loading areas may exceed those specified in the landscaping regulation for:

2 o special exception uses approved by the decision and order issued by the Board of Appeals
3 o plans approved with modifications by the Planning Board
4 o plans requiring other approval processes

5 a. **Community Refuse Pad for Private Access Place Street**

6 When a developer creates a Private Access Place street in a residential community, an area must
7 be designated on the construction plans for a 4' x 10' community refuse pad. The refuse pad shall
8 include a landscaped **buffer** and/or fence along the perimeter of the pad.

9 The **buffer** shall consist of evergreen shrubs of a height of 3 to 4 feet minimum, and with spacing
10 every 3 feet or so. The desired effect is that of an evergreen **hedge**. The surety for these shrubs
11 and any related fence should be posted with that of the Private Access Place landscape "street"
12 trees.

13 b. **Residential Community Trash & Recycling Pads**

14 Trash and recycling rules and regulations require collection pads be placed within 5 feet of the
15 public roadway. Residential community trash and recycling pad placements should be located
16 within the County right-of-way to comply with the regulations. Landscaping shall not be located on
17 the side of the trash pad facing or oriented towards the public road to allow for ease of pick-up
18 and accessibility for the trash collection service. However, landscaping is allowable on the ends
19 and back side of the trash pad facing or oriented towards the residential **development** unless
20 Subdivision Review Committee (SRC) comments prohibit the landscaping. The placement of
21 community trash pads and landscape **screening** will be reviewed on a case-by-case basis on
22 subdivision and Site Development Plans. Where landscape **screening** cannot be provided to
23 allow for full and open access and pick-up services for trash and recycling collection, comments
24 received from SRC agencies indicating that landscaping should not be allowed shall supersede
25 the landscape requirements.

26 **3.2.8 Residential Development Internal Landscaping**

27 Internal landscaping is required within all new single family attached, mobile home, and apartment
28 **developments**. Expansion to existing **development** that increases the number of single family attached
29 units or apartments by 50% or more shall be required to provide landscaping for the entire site in
30 accordance with these regulations. Expansion of less than 50% of the number of existing units shall be
31 required to provide landscaping for the additional **development** only.

32 In addition to the requirements outlined in Table 7:

33 **A landscaped area with a minimum width of 15 feet shall be provided between
34 common parking areas and any adjacent residential structure.**

Table 7 – Residential Development Internal Landscaping		
	Required Plantings	Placement
Single Family Attached, Mobile Homes	1 Shade Tree ^{1,2} per 2 units	<ul style="list-style-type: none"> open space other on-site locations meeting the intent of regulations residential lots
Apartments (1-4 stories)	1 Shade Tree ^{1,2} per 3 units	<ul style="list-style-type: none"> open space other on-site locations meeting the intent of regulations
Apartments (5+ stories)	1 Shade Tree ^{1,2} per 3 units (a mix of shade trees, ornamental trees and shrubs is encouraged using substitutions below)	<ul style="list-style-type: none"> open space building edge / foundation other on-site locations meeting the intent of regulations

¹ Small deciduous or evergreen trees may be substituted for shade trees at a 1:1 ratio. Shrubs may be substituted for shade trees at 10:1. No more than 50% of the required shade trees may be substituted.

² Shall be ***native species***

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Landscape planting requirements shall be shown on the Site Development Plan. Landscape Plans shall include Schedule E (see [Appendix B](#)).

4

See [Appendix A, Figure 8](#).

5

a. Native Plants & Biodiversity requirement

6

Plantings required for Residential Development Internal Landscaping shall meet the Native Plants & Biodiversity requirements outlined in [Section 4.1](#).

7

3.2.9 Recreation Open Space

8

Per Section 16.121 of the Subdivision and Land Development Regulations, the ***open space*** required for residential and mixed-use ***developments*** is intended to protect environmental resources and provide for recreation or public use. The ***open space*** regulations also describe the suitability of proposed ***open space*** areas, which supports the landscape manual's intention for the ***open space*** to be an amenity to the ***developments*** and their surrounding communities and not simply an aggregation of left over spaces. Refer to Section 16.121(a) of the Subdivision and Land Development Regulations for the required amount of ***open space*** and recreation open space.

9

Recreation open space should provide additional landscaping and opportunities for the ultimate HOA or other named owners group (such as a condominium association) to add landscaping.

10

Landscape requirements for recreation open space apply to developments with 5,000 square feet of required recreation open space, or greater, and shall be provided as follows:

11

100 square feet of plant bed area for the first 5,000 square feet of required recreation open space, and

12

100 square feet of plant bed area for each additional 1,000 square feet of required recreation open space

13

The minimum provided plant bed area shall be 300 square feet.

1 ○ For example, for 5,000-7,999 SF of required recreation open space, 300 square feet
 2 of plant bed area shall be provided. For 8,000 square feet of required recreation
 3 open space, the provided plant bed area shall be 400 square feet.

4 **The maximum required plant bed area is 1,200 square feet.**

5 **If multiple beds are proposed to meet the requirements, the minimum for each bed
 6 shall be 300 square feet.**

7 The plant beds may be located within the recreation open space and should be placed to allow
 8 **active recreation activities.** The beds may also be adjacent to or just outside the recreation
 9 open space, or provided with an entry sign feature, along sidewalks and other areas that meet
 10 the intent.

11 For the purpose of calculating required plant bed area, use the required recreation open space
 12 for the project prior to deducting any allowed amenity credits (e.g. gazebos, patios, etc.)

13 Plant beds shall be reasonably planted and can have a significant portion of the bed available for future
 14 Bee City plantings. Notes on the landscape plans shall identify these optional opportunities for the benefit
 15 of the HOA and include reference to the resources available through the Office of Community
 16 Sustainability. Refer to the Howard County **Bee City USA** program for more resources.

17 **Generally, plant beds for recreation open space areas shall include a minimum of 4
 18 native shrubs per 300 square feet of planting bed in addition to required internal
 19 landscape plantings. Surety shall be place for the required shrubs.**

20 Trees required for residential **development** internal landscaping may be located in recreation open space
 21 plant beds.

22 Plant beds shall be prepared planting beds – refer to **Section D.4 of Appendix D** for plant bed
 23 preparation guidelines.

24 a. **Plant Type Substitutions**

25 The following plant type substitutions may be provided in lieu of the requirements listed above for
 26 recreation open space requirements, provided the substitutions meet the intent of the regulations:

Table 8 – Recreation Open Space Plant Type Substitutions	
Required Plant Type	Substitution
1 Shrub	<p>Herbaceous perennials* and/or perennial grasses*</p> <p>Plan preparer may propose an appropriate substitution rate of perennials and/or grasses based on specific proposed species to meet the intent of the regulations</p>

* Minimum 1 gallon or #1 container installation size; only allowed as a substitution for up to 50% of shrub requirement

27 b. **Native Plants & Biodiversity requirement**

28 Plantings required for Recreation Open Space shall meet the Native Plants & Biodiversity
 29 requirements outlined in **Section 4.1.**

1 3.2.10 Ground-Mount Solar Collectors

2 a. Commercial Facilities

3 A Type D perimeter landscape edge is required for all commercial solar collector facilities,
4 Solar collector facilities and **buffers** should address adjacent property views to provide maximum
5 screening potential of the proposed solar facility. Parameters for the **perimeter landscape**
6 **edges** for solar projects that are between 1 MW and 2 MW as well as 5 MW and larger projects
7 subject to the **PSC** CPCN process are based on requirements outlined in the 2025 Renewable
8 Energy Certainty Act (HB1036) and are as follows:

9 The landscape **buffer** shall be a minimum of 10 feet and a maximum of 35 feet wide. The **buffer**
10 shall:

- 11 o Be provided along all property lines,
- 12 o Be provided along locations of the exterior boundary for the solar energy generating
13 station where existing wooded vegetation of 50 feet or more in width does not exist; or
- 14 o An alternative location within the boundary for the solar energy generating station if the
15 owner demonstrates that the alternative locations would maximize the visual **screening**

16 A landscape **buffer** or vegetative **screen** that provides four-season visual **screening** of the solar
17 energy generating station (solar collector facility) shall be provided between any fencing and the
18 public view and includes multi-layered staggered rows of overstory and understory trees and
19 shrubs that are:

- 20 o A mixture of evergreen and deciduous vegetation
- 21 o Predominantly native to the region
- 22 o More than 4 feet in height at planting
- 23 o Are designed to provide **screening** or **buffering** within 5 years of planting

24 **Berms** are not required; however, **berms** are permitted in addition to the required landscape
25 plantings. A **berm** may not be proposed in lieu of any plantings required for solar collector
26 facilities.

27 Proposed landscape plantings should be located at a sufficient distance from existing overhead
28 power lines to allow plantings to mature and avoid disturbance from standard vegetation
29 maintenance typically associated with existing overhead power lines.

30 Planting requirements shall be shown on the Site Development Plan. Landscape Plans for solar
31 collector facilities shall include Schedule A (see [Appendix B](#)).

32 a.1 Native Plants & Biodiversity requirement

33 Plantings required for landscape **buffers** / vegetative **screening** shall meet the Native
34 Plants & Biodiversity requirements outlined in [Section 4.1](#).

35 Creating **plant communities** within the landscape **buffers** or vegetative **screening** in
36 support of Howard County's Bee City initiatives is desired. Using the substitution chart
37 shown in [Table 2](#) as a guideline, designers are encouraged to include layers of
38 herbaceous perennials and grasses in addition to trees and shrubs to create a robust
39 **plant community**.

40 a.2 Pollinator-friendly Meadow Plantings

41 Creating and managing native pollinator-friendly meadows amid the solar collector facility
42 is encouraged. Meadows require less frequent mowing and provide more ecological

1 value than turf grass by increasing **biodiversity** and creating habitat that supports native
2 pollinating insects and other wildlife.

3 Pollinator-friendly meadow plantings are not required as part of the landscape plan and
4 will not be reviewed by the County. No surety will be required. If the project proposes
5 meadow planting, the intent should be indicated with a note in the landscape plan notes.
6 For example, "In addition to the required landscaping shown on this plan, the landscaped
7 areas between and/or beneath the ground-mount solar collectors will be planted as a
8 meadow and not turf grass in support of the County's Bee City program initiatives."

9 Refer to the Howard County Bee City USA program for more resources.

10 b. Solar Canopies over Parking

11 The following **parking lot** internal landscape requirements apply to existing **parking lots**
12 retrofitted to add solar canopies over parking spaces and to new **development** proposing solar
13 canopies over parking spaces or proposing a **parking lot** that will receive solar canopies in the
14 future ('**solar-ready**' **parking lots**).

15 Plantings required for Solar Canopies over Parking shall meet the Native Plants & Biodiversity
16 requirements outlined in [Section 4.1](#).

17 When plantings are located or proposed under solar canopies by the designer:

- 18 ○ The landscape plan shall detail how plantings will receive sufficient water (e.g. gutter
19 system for the canopy that outfalls to planted islands, proposed grades that direct
20 rainwater to the planting areas, etc.).
- 21 ○ Plant selection must address available light with details depicting canopy height and
22 calculated available light that will reach the planted areas

23 b.1 For existing parking lots that add solar canopies over a portion of or all
24 parking spaces:

25 Landscaped islands that are part of the previously approved plan that will be displaced by
26 new solar canopies as part of the retrofit work must be replaced at a 1:1 rate elsewhere
27 within the **parking lot**.

- 28 ○ Trees and plantings that are part of the approved plan that will be displaced by
29 the solar canopies must be replaced at a 1:1 rate elsewhere in the **parking lot**
- 30 ○ Proposed location of replaced landscaping must meet the intent of its original
31 location
- 32 ○ Substitutions may be used following the substitution chart shown in [Table 9](#), for
33 up to 100% of the displaced landscaping.

34 b.2 For new development proposing parking lots with solar canopies over a
35 portion of or all parking spaces and for '**solar-ready**' **parking lots**:

36 The islands and trees required shall be calculated based on [Section 3.2.5.b](#)

37 Using the required area (SF) of islands and quantities as a base:

- 38 ○ Trees and islands may be located elsewhere within the **parking lot**
- 39 ○ Substitutions may be used following the substitution chart shown in [Table 9](#), for
40 up to 100% of the displaced landscaping.

41 A planted landscape island is required at all ends of the solar canopy rows.

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b.3 Plant Type Substitutions

For **parking lot** internal landscaping where solar canopies are over parking spaces, the following plant type substitutions may be provided in lieu of shade trees, provided the substitutions meet the intent of the regulations:

Table 9 – Solar Canopies over Parking Plant Type Substitutions	
Required	Substitution
1 Shade tree	1 Small deciduous tree AND 3 Shrubs AND Optional herbaceous perennials* and/or ornamental grasses*
1 Shade tree	5 Shrubs AND Optional herbaceous perennials* and/or ornamental grasses*
1 Shade tree	3 Shrubs AND 3-7 herbaceous perennials* and/or ornamental grasses*

* Minimum 1 gallon or #1 container installation size

6 Stormwater Management Facility Landscape Edge

7 Landscape edge requirements for stormwater management (SWM) facilities apply to new or expanded
8 or replaced structural water quality stormwater BMPs, including but not limited to ponds and extended
9 detention facilities. These requirements are not applicable to ESD practices, such as micro-bioretention
10 facilities, rain gardens, etc. Refer to the current Maryland Department of the Environment Maryland
11 Stormwater Design Manual for descriptions of structural (BMP) and ESD practices.

12 These requirements apply to all zoning districts with some exceptions for parcels zoned M-1 and M-2, as
13 described below.

14 For SWM facilities that have an internal location within the development:

- 15 ○ Type B landscape edge shall be provided between the SWM facility and any adjacent
16 structure or internal residential lot.
- 17 ○ Perimeter length is calculated along the lot or easement boundary.
- 18 ○ Internal landscape edges shall be reflected in Schedule H (see [Appendix B](#)) and
19 included on the Landscape Plan

20 For SWM facilities adjacent to roadways or perimeter properties:

- 21 ○ Type B landscape edge shall be provided, unless a Type C landscape edge is
22 required in [Tables 3 or 4](#).
- 23 ○ Landscape edge type(s) for SWM facilities shall be reflected in the Schedule A (see
24 [Appendix B](#)) included on the Landscape Plan.

25 See [Appendix A, Figure 9](#) for illustrations / examples.

1 a. M-1 and M-2 zoning districts

2 SWM areas not adjacent to residential zoning or a public road are exempt from these
3 requirements.

4 For SWM areas adjacent to a public road, the required **buffer** should be calculated based on the
5 entire pond perimeter within view of the public road.

6 The required **buffer** should create or provide habitat for native pollinators. Additional plantings
7 may be required by DPZ to enhance the view of the SWM facility from residential uses.

8 Alternative methods of meeting the regulations may be proposed and approved.

9 b. Plant Type Substitutions

10 The following plant type substitutions may be provided in lieu of the requirements listed above for
11 SWM landscape edge requirements, provided the substitutions meet the intent of the regulations:

Table 10 – SWM Landscape Edge Plant Type Substitutions

Required	Substitution
1 Shade tree	For up to 50% of required shade trees: 2 Small deciduous trees, or 2 Evergreen trees
1 Shade tree	For up to 25% of required shade trees: 10 Shrubs

12 Existing trees used for credit must meet the requirements outlined in [Section 3.2.2.d.1](#).

13 c. Location Requirements for SWM Landscape Edge Plantings

14 Plantings within the landscape edge may not encroach on maintenance access to the facility as
15 required by the Department of Public Works.

16 Planting will not be allowed on any SWM facility dam/**berm** or in any other location that could
17 threaten the structural integrity of the facility. Refer to Maryland Department of the Environment
18 Stormwater Design Manual Appendix A.1 for more information.

19 These restrictions do not supersede perimeter landscaping requirements. Stormwater
20 management facilities must be located to avoid conflict with **perimeter landscape edge** plantings.

21 d. Plantings within a SWM facility

22 Planting within SWM facility basin shall be in accordance with the most current Maryland
23 Department of the Environment (MDE) manual.

24 e. Native Plants, Biodiversity, Plant Communities

25 Plantings required around SWM areas shall meet the Native Plants & Biodiversity requirements
26 outlined in [Section 4.1](#). Plants that are associated with stream, pond or wetland habitat provide an
27 attractive character for such facilities but should be used only if suited to site conditions.

28 Additionally, creating **plant communities** with SWM plantings and SWM landscape edge plantings
29 is encouraged. Include layers of herbaceous perennials and grasses using the substitution chart
30 shown in [Table 2](#) in addition to trees and shrubs to create a robust **plant community**.

1 3.2.11 Historic Structures and Areas

2 For **developments** adjacent to or adjoining historic properties:

3 o A Type D landscape edge may be required.

4 Evergreen trees create solid **buffers** between proposed **developments** and adjoining existing historic
5 properties. Layout of required planting should respond to the site's and adjoining property's historic
6 context, and designers should consider whether a staggered or naturalistic design or a formal **hedge** is
7 more appropriate.

8 Supplemental planting may be required, particularly when there are modifications to the historic
9 environmental setting. Preservation of existing specimen trees, **hedge** rows, woods, and terrain
10 contribute to the setting of a historic property.

11 Chapter 4 Plant Selections

12 Plant material selected should be appropriate to the specific environmental conditions created and/or existing on
13 project sites, including site specific microclimates, and should survive environmental stresses of their proposed
14 location. Additionally, plant materials may be selected to provide **screening** of potentially objectionable views
15 (e.g. from residential properties), to provide barriers to potentially undesirable relationships (e.g. to pedestrian
16 circulation), or used to enhance an amenity feature. In the first case, evergreen trees may be preferred; in the
17 second case, dense shrubbery might be provided; in the latter case, plants with ornamental characteristics would
18 be preferred.

19 4.1 Native Plants & Biodiversity

20 Native plants and plant **biodiversity** are important factors in supporting a wide range of animal species and
21 influencing vital ecosystem functions like biomass production and soil health.

22 Native plants are well-adapted to the local environment, which makes them crucial for maintaining
23 **biodiversity** and supporting the health of the ecosystem. Prioritizing native plants can help with things like:

24 • **Supporting Wildlife:** Native plants provide food and shelter for local wildlife, such as pollinators
25 (bees, butterflies) and other animals.

26 • **Soil Health:** Native plants help maintain soil structure and prevent erosion. Their root systems can
27 improve water retention and nutrient cycling in the soil.

28 • **Invasive Species Control:** Encouraging the growth of native plants can help reduce the spread of
29 **invasive species** that often disrupt local ecosystems.

30 • **Climate Resilience:** Native plants are better suited to handle local climate conditions, making them
31 more resilient during changes like droughts or heavy rainfall.

32 The purpose of the following requirements is to increase the use of native plants and to support botanical
33 **biodiversity** in Howard County.

34 DPZ recognizes that there may be some projects for which strict adherence to these requirements may not
35 be feasible or practical. The plan preparer may propose an alternative that will be reviewed by DPZ on a
36 project-by-project basis. See **Section 2.7.2** of this manual.

37 4.1.1 Native Plants Requirements

38 **Native plant species are required for the following site conditions:**

39 • Perimeter Landscape Edges (**3.2.2**)
40 • Residential Development Internal Landscaping (**3.2.8**)

1 • Recreation Open Space ([3.2.9](#))
 2 • Ground-Mount Solar Collectors ([3.2.10](#))
 3 • Stormwater Management Facilities ([3.2.11](#))

4 **Landscape Plan plant schedules shall identify the proposed plant species that meet the native**
 5 **requirements.**

6 Refer to [Section 4.1.3](#) for guidance on determining acceptable *native species*.

7 Refer to [Section 4.5](#) and [Section 4.6](#) for strictly prohibited *invasive species* and *non-native species*
 8 that are not suitable for certain conditions.

9 a. Percentage of plant palette required to be native

10 Requirements are as follows:

Table 11 – Minimum percentage of plants required to be native species	
Plant Type	Percentage Native
Shade Trees	70%
Small Deciduous Trees	70%
Evergreen Trees	40%
Shrubs	60%
Herbaceous Perennials/Grasses	80%

11 4.1.2 Species Diversity Requirements

12 By providing a greater number of unique species in a project's proposed plant palette, this requirement
 13 is intended to support plant **biodiversity** and help reduce the negative impacts of monocultures.

14 Some genera (e.g. *Acer spp.*, *Ilex spp.*) include several native and *non-native species*. In cases where
 15 a single genus dominates the proposed plant palette, DPZ may require that some species be exchanged
 16 with those of another genus.

17 These requirements are not intended to discourage appropriate design decisions (i.e. plant massing,
 18 cohesive plant palettes, repetitions, etc.)

19 Requirements for all land use / development types:

Table 12 – Species diversity, Trees	
Number/Qty of Plants per Plant Type - Trees	Maximum Percentage of one species
1-10	100%
11-30	50%
31-60	40%
61-100	25%
101+	20%

Table 13 – Species diversity, Shrubs	
Number/Qty of Plants per Plant Type - Shrubs	Maximum Percentage of one species
1-10	100%
11-50	50%
51-100	30%
100-250	15%
250+	10%

1

2 4.1.3 Native Plants Selection

3 For the purpose of the Landscape Manual, native plants are generally defined as:

4 **5 plant species that occur naturally in their ecoregion and habitat where, over the course of
6 evolutionary time they have adapted to physical conditions and co-evolved with the other
6 species in the system.**

7 Ecoregions are identified by the US EPA Level IV & III Ecoregions, refer to DPZ Landscape Manual
8 webpage for supporting documents and reference links.

9 While straight species of native plants is preferred, to meet the requirements for native plant species per
10 **Section 4.1.1**, cultivars of natives as defined above may also be used. However, recommendations for
11 choosing cultivars are as follows:

- 12 • Prioritize straight species: It is recommended to use straight species of native plants, especially
13 those sourced locally, and it is highly recommended to do so for ecological restoration projects.
- 14 • Choose wisely: If using cultivars, select those that are as close to the original **native species** as
15 possible in terms of traits that affect wildlife (e.g., flower color, bloom time).
- 16 • Balance species and cultivars: When using cultivars in designed landscapes, include a mix of
17 both cultivars and straight species to provide a range of benefits for wildlife.
- 18 • Research specific cultivars: Before planting, research the specific cultivar to understand its
19 potential impact on wildlife and the environment.
- 20 • Consider local ecotypes: If possible, prioritize plants from local ecotypes (geographic origins) as
21 they are likely to be best adapted to the local environment.
- 22 • Encourage nurseries to stock straight species: Support nurseries that offer straight species of
23 native plants

24 Resources for and lists of native plants that generally meet the definition above can be found on the DPZ
25 Landscape Manual webpage.

26 4.2 Street Tree Selection Criteria

27 Please also refer to the Howard County Design Manual, Volume III, Complete Streets and Bridges. Criteria
28 here is not intended to conflict or replace the requirements in the Design Manual. Where conflicts are noted,
29 the Complete Streets Design Manual prevails. The following criteria must be addressed when selecting
30 street trees for a particular location:

- 31 • Trees must fit the space limitations when mature. The species, ultimate size of the tree and the
32 canopy desired should be appropriate to the size of the right-of-way and the road classification (i.e.,
33 local, collector or arterial road).

- 1 • Trees should be selected to survive the environmental stresses of the proposed location. The
2 recommended street tree list includes trees selected for appropriate branching habits, tolerance of
3 local environmental conditions such as soil and rainfall, and have relatively low susceptibility to
4 pests and disease.
- 5 • Shade trees are preferred as street trees.
- 6 • Street trees shall be selected and located to minimize conflict between tree canopy/limbs and tall
7 trucks and buses.
- 8 • Small trees may be desirable to provide variety in the streetscape. However, small trees are not
9 permitted in situations where they inhibit sight distance, conflict with pedestrian circulation or create
10 maintenance problems.
- 11 • Small trees will be permitted under the following conditions and in the following locations:
 - 12 ○ Within street rights-of-way when:
 - 13 ■ no sidewalk is required;
 - 14 ■ the distance between the curb and the sidewalk is 8 feet or greater; or
 - 15 ■ the tree may be pruned to 8 foot clear trunk without destroying the shape of the crown
16 of the tree.
 - 17 ○ In street tree maintenance easements adjacent to the right-of-way.
 - 18 ○ In median strips of divided highways, provided that trees are located a minimum of 20 feet
19 from the nose of the median island and will not interfere with travel lanes when mature.
- 20 • Small trees, with a mature height of 25 feet or less, must be selected for planting under power lines
21 when planting beneath the power lines cannot be avoided.
- 22 • No needle evergreen trees will be permitted in a public right-of-way.
- 23 • No thorn bearing trees or trees with rigid, sharply pointed leaves (such as holly trees) will be
24 permitted adjacent to sidewalks.
- 25 • Every effort shall be made to diversify species and cultivars of species of trees planted on different
26 streets or between blocks on very long streets. This practice provides for long term survival of the
27 landscape, should one species suffer a blight or infestation of an introduced pest.
- 28 • Street trees should be selected so that the County's roadway network exhibits a variety of species
29 with differing colors, textures and forms.

30 4.3 Recommended Street Trees

31 The Recommended Street Trees list is not comprehensive and is not intended to limit proposed street trees
32 to the species on this list. Other plant species or cultivars may be considered for street tree planting upon
33 a request for approval from the Department of Planning and Zoning (DPZ) and the Department of Public
34 Works (DPW).

35 Refer to [Section 3.2.3.f](#) for street tree spacing requirements for guidance and [Section 3.2.4](#) for locating
36 street trees beneath overhead wires.

37 Recommended Street Tree List can be found on the DPZ Landscape Manual webpage.

38 4.4 Recommended Plants

39 The Recommended Plants list is not comprehensive and is not intended to limit landscape architects or
40 other approved design professionals from choosing plant material not included in this list. The
41 recommendations are provided for guidance only. Professionals are encouraged to create the best designs
42 for each unique project that meet the intent of the landscape regulations.

1 Recommended Plants List can be found on the DPZ Landscape Manual webpage.

2 4.5 Prohibited & Limited Plants

3 **Invasive species** per [Section 4.6](#) of the Landscape Manual are prohibited. For convenience, the
4 Prohibited and Limited Plants list highlights several exotic invasive trees and shrubs that have been
5 historically used and/or are commonly found in the landscape.

6 Additionally, the Prohibited and Limited Plants list includes plants that are prohibited or strictly limited for
7 planting use because of their associated problems with disease, pests, undesirable characteristics,
8 maintenance issues and liability concerns.

9 Prohibited & Limited Plants List can be found on the DPZ Landscape Manual webpage.

10 These lists are not comprehensive and are subject to change. Landscape Architects and design
11 professionals are expected to maintain relevant continuing education and training requirements that will
12 inform plant selection without reliance on lists from DPZ.

13 4.6 Invasive Species

14 **Invasive species** are prohibited and shall not be used on **development** projects. Any existing tree
15 proposed to meet Landscape Manual requirements shall not be an **invasive species**.

16 Additionally, existing vegetated areas to be retained that contain **invasive species** should conform to the
17 requirements of the Landscape Manual. **Invasive species** found on site should be removed to allow for
18 long-term health of the landscape, and in some cases, eradication may be required.

19 **Plantings proposed to meet landscape requirements shall not include species identified by the**
20 **Maryland Department of Agriculture's "Maryland Invasive Plants Prevention and Control" program**
21 **and/or species identified in "Invasive Species of Concern in Maryland" by the Maryland Invasive**
22 **Species Council (as updated periodically).**

23 Please see Links and Resources on the DPZ Landscape Manual webpage for referenced resources and
24 additional information.

25 4.7 Substitutions

26 The Landscape Architect or design professional should indicate on the landscape plans if prior approval is
27 necessary for substitutions made at the time of installation and clarify if the approval should be sought from
28 the Design Professional or the Department of Planning and Zoning. Examples of when prior approval by
29 DPZ is required include, but is not limited to, the following:

- 30 • A Landscape Plan that was part of an approval for a Conditional Use plan
- 31 • Landscape Plan modifications made a part of the Planning Board approval
- 32 • Additional Landscaping recommended through Design Advisory Panel (DAP) motions and
33 endorsements
- 34 • Creation of a Zoning overlay approved by the Zoning Board
- 35 • A Landscape Plan meeting other Design Manual criteria

36 When permitted, minor plant substitutions may be made to an approved planting plan at time of installation
37 within the following limits:

- 38 • The number, size and location of plants has not changed.
- 39 • The general type of plant remains the same (shade tree, evergreen tree, small deciduous tree) and
40 the substitute plant is included in the recommended plant lists.
- 41 • The **biodiversity** requirements outlined in [Section 4.1.2](#) are maintained.

1 When equal substitutions are made, no prior approval is needed from the Department of Planning and
2 Zoning; however, a revised plant list must be submitted with the required 1 year plant warranty prior to
3 release of surety. If changes in the general type of plant material are to be made or if a change in an optional
4 treatment is proposed, written authorization must be requested from the Department of Planning and
5 Zoning. In such a case, the Department may require the landscape plan to be revised utilizing the "red-line
6 revision process."

7 Chapter 5 Glossary

8 * As defined in referenced regulations and manuals

9 **Active recreation activities** – for the purpose of the open space landscape requirements, a variety of activities
10 that require sufficient unobstructed space to perform comfortably; examples include frisbee, yoga or tai chi, playing
11 catch or tag, lawn games, etc.

12 **Bee City USA** – a national program, run by the Xerces Society for Invertebrate Conservation, that mobilizes
13 communities to protect pollinators by creating pollinator-friendly habitats, reducing pesticide use, and engaging
14 residents through educational events. The program provides a framework for cities, towns, and counties to become
15 certified affiliates by making commitments to conservation. Howard County's Bee City program is administered
16 through the Office of Community Sustainability.

17 **Berm** – an earthen mound designed to buffer adjacent uses, screen undesirable views, reduce noise, etc.

18 **Biodiversity** – the variety and variability of plant life within a specific region, encompassing the different species of
19 plants, their genetic diversity, and the ecosystems they inhabit. Plant biodiversity is crucial for a healthy ecosystem.
20 Diverse **plant communities** support a wide range of animal species, provide essential resources like food and
21 medicine, and contribute to ecosystem stability.

22 ***Buffer Zone** – see Howard County Design Manual, Volume III, Complete Streets and Bridges

23 **Buffer / Buffering** – the use of landscape materials to lessen the visual impact of a use, or to visually or physically
24 separate uses, while not necessarily shielding a structure or use from view (see "Screen").

25 **PSC**-Maryland Public Service Commission is a regulatory body that oversees the public utilities and infrastructure
26 projects.

27 **CPCN** – Certificate of Public Service Convenience is a mandatory State approval required for the construction of
28 significant projects.

29 **Caliper** – tree diameter measured above the root collar in accordance with ANSI Z60.2 *American Standard for*
30 *Nursery Stock*, latest edition.

31 **Deciduous** – a plant with foliage that is shed annually.

32 **DPZ** – the Howard County Department of Planning and Zoning.

33 **Development** – the establishment of a principal use of a site; a change in a principal use of a site; or the
34 improvement or alteration of a site by the construction, enlargement, or relocation of a structure; the provision of
35 stormwater management or roads; the grading of existing topography; the clearing or grubbing of existing
36 vegetation; or any other non-agricultural activity that results in a change in existing site conditions, including
37 increasing number of dwelling units.

38 ***Driveway** – see Subdivision and Land Development Regulations Sec. 16.108(b)(18.1)

39 **Evergreen** – a plant with foliage that persists and remains year-round.

40 ***Forest** – see Planning, Zoning and Subdivisions and Land Development Regulations Subtitle 12 Forest
41 Conservation Sec. 16.1201(g)

42 ***Forest Conservation** – see Planning, Zoning and Subdivisions and Land Development Regulations Subtitle 12
43 Forest Conservation Sec. 16.1201(h)

44 ***Forest Conservation Plan** – see Planning, Zoning and Subdivisions and Land Development Regulations Subtitle
45 12 Forest Conservation Sec. 16.1201(j)

46 **Hedge** – a linear boundary or 'live fence' formed by shrubs, or sometimes small trees or a combination of trees and
47 shrubs, planted very close together and trained to form a barrier, provide privacy, or mark the boundary of an area,
48 such as between neighboring properties

49 **Internal lots or parcels within the same development** – Existing lots internal to a recorded subdivision that
50 received Howard County approval as defined in Section 16.108(b)(44)(i)&(ii) of the Subdivision and Land

1 Development Regulations which have not been reconfigured or resubdivided and where the number of dwelling
2 units has not increased. Note that when an increase in dwelling units is proposed, the development is subject to
3 perimeter landscape requirements.

4 **Internal Road** – the portion of a roadway that is primarily intended for access and circulation within a **development**
5 and is a minimum of 30 feet in length. An internal road is not a **parking lot** aisle, mini-warehouse service lane,
6 passenger/parcel pickup lane or drive-thru service lane.

7 **Invasive Species** – For purposes of this manual, invasive species are those identified in (1) Invasive Species of
8 Concern in Maryland (as updated periodically by the Maryland Invasive Species Council), or (2) Plant Invaders of
9 Mid-Atlantic Natural Areas, published by the National Park Service, U.S. Fish and Wildlife Service (as updated
10 periodically). See DPZ Landscape Manual webpage for links to referenced resources.

11 **Maintenance Agreement** – a legally binding agreement to ensure the survivability of all sites afforested, reforested
12 or landscaped.

13 **Native Species (Native Plant)** – plant species that occurs naturally in its ecoregion and habitat where, over the
14 course of evolutionary time it has adapted to physical conditions and co-evolved with the other species in the
15 system. Ecoregions as identified by the US EPA Level IV & III Ecoregions.

16 **Non-native Species (Non-native Plant)** – (also called non-indigenous, alien, or exotic) a plant that was introduced,
17 accidentally or purposefully, into an ecosystem through human activities and did not evolve in or migrate to a specific
18 area. Non-native species can come from other continents, other countries and other parts of the United States.

19 ***Open Space** – a separate lot or area which provides for protection of the environment, for recreation or for public
20 use, including public facilities such as schools, libraries, fire stations and parks as shown on the general plan or
21 hiking, biking, and equestrian trails. (16.108(b)(33))

22 **Open Space Access Point** – refer to Section 16.121 (e) of the Subdivision and Land Development Regulations

23 ***Parking Area** – see Zoning Regulations (Section 103.0 – Definitions)

24 ***Parking Lot** – see Zoning Regulations (Section 103.0 – Definitions)

25 **Parking Lot, 'Solar-Ready'** – a parking lot intentionally designed to have solar canopies installed over a portion of
26 or all the parking spaces in a future design and/or construction phase

27 **Perimeter Landscape Edge** – the area around the perimeter of a **ent** reserved for buffer or **screen** plantings. In
28 certain developments or uses, there may be a minimum width required.

29 **Plant bed** – a designated area where shrubs, herbaceous perennials and perennial grasses, and sometimes trees,
30 are grouped together and separated from the lawn or other surrounding landscape surface; mulched and edged or
31 raised to provide better definition and ease of maintenance

32 **Plant community** – an assemblage of plants that co-exist in a similar environment. Different communities are
33 defined by their structure, form, and species composition. Plant communities are both spatially and temporally
34 dynamic. For the purpose of requirements in this manual, a plant community should consist of overstory and
35 understory trees and shrubs combined with herbaceous perennials and grasses that are compatible and
36 complementary to each other in providing wildlife habitat and forage opportunities.

37 **Revision plat** – a legal document that makes changes to an existing, recorded subdivision plat. It is used for minor
38 or major corrections, such as adjusting lot lines, consolidating lots, creating or moving easements, without creating
39 new lots.

40 **Root barrier** – a physical barrier, often made of materials like high-impact plastic, polypropylene, or geotextile
41 fabrics, installed vertically into the ground, to protect structures like foundations, driveways, and sidewalks from
42 potential damage caused by tree or plant roots by blocking, deflecting or redirecting roots away from hardscapes

43 ***Scenic Road** – see Planning, Zoning and Subdivisions and Land Development Regulations Subtitle 14 Scenic
44 Roads (Sec. 16.1402)

45 **Screen** – a type of buffer used to substantially shield a structure or use from view.

46 **Shrub** – a woody plant, smaller than a tree, which consists of a number of small stems from the ground or small
47 branches near the ground. May be deciduous or evergreen.

48 ***Sidewalk** – see Subdivision and Land Development Regulations Sec.16.108(b)(50)

49 **Sight Triangle** – a triangular zone at intersections and **driveways** that must be kept clear of any obstructions to
50 provide drivers with an unobstructed line of sight. Refer to Howard County Design Manual Volume III Complete
51 Streets and Bridges for more information regarding intersection sight distance.

52 **Solar Canopy over Parking** – a ground-mount solar collector that is designed to be installed over parking spaces
53 in a parking lot

54 ***Solar Collector Facility, Commercial Ground-Mount** – see Howard County Zoning Regulations Sec. 103.0

1 ***Solar Collector, Accessory Ground-Mount** – see Howard County Zoning Regulations Sec. 103.0
2 **Specimen Tree** – a tree with a diameter at breast height (dbh) of 30 in. (75 cm) or more, or a tree having 75% or
3 more of the diameter of the current state champion for that species. This includes champion trees, which are the
4 largest trees of their species within the United States, the state, county, or municipality as determined by the
5 Maryland Department of Natural Resources.
6 **Street Tree** – a shade tree planted within a public right-of-way or within a street tree maintenance easement
7 adjacent to a roadway with the intent to provide shade over the street or sidewalk and to give the street a sense of
8 spatial definition. The minimum **caliper** of a street tree at time of planting shall be 2½ inches, in accordance with
9 ANSI Z60.2 American Standard for Nursery Stock, latest edition.
10 **Tree** – a large, branched, woody plant having one or several self-supporting stems or trunks that reach a height of
11 at least 20 feet at maturity.
12 **Tree, Evergreen** – an evergreen plant with a mature height typically exceeding 15 feet. Minimum height at planting
13 shall be 6 feet, or size in accordance with the current recommended plant list on the DPZ Landscape Manual
14 supporting documents webpage, in accordance with ANSI Z60.2 American Standard for Nursery Stock, latest
15 edition.
16 **Tree, Multi-stem/Multi-trunk** – tree with multiple stems (trunks) as described in the ANSI Z60.2 American Standard
17 for Nursery Stock, latest edition.
18 **Tree, Shade** – a deciduous (or rarely, an evergreen) tree planted primarily for its high crown of foliage or overhead
19 canopy with a mature height of 30 feet or greater. The minimum **caliper** at time of planting shall be 2½ inches, and
20 the minimum height for multi-stem/multi-trunk trees shall be 12 feet, both in accordance with ANSI Z60.2 American
21 Standard for Nursery Stock, latest edition.
22 **Tree, Small** – a deciduous or evergreen tree that generally does not exceed a height of 30 feet at maturity.
23 **Tree, Small Deciduous** – a deciduous tree planted primarily for its ornamental value (typically flowers), or for
24 screening, and generally does not exceed a height of 30 feet at maturity. The minimum **caliper** for single stem trees
25 at the time of planting shall be 1½ inches, and the minimum height for multi-stem/multi-trunk trees shall be 8 feet,
26 or size in accordance with the current recommended plant list on the DPZ Landscape Manual supporting documents
27 webpage, both in accordance with ANSI Z60.2 American Standard for Nursery Stock, latest edition. A multi-stem
28 small tree must reach a mature height of 15 feet minimum.

29 Chapter 6 Appendices

30 Example Diagrams

31 The diagrams provided herein show examples of how to calculate and apply the standard requirements for
32 several site conditions as outlined in the Landscape Manual. Project sites often have unique site conditions or a
33 specific set of project design criteria that may make strict application of the standard requirements impractical
34 and/or other options may better serve the intent of the landscape requirements. The examples provided do not
35 and cannot address all possible site conditions and are provided for information only.

36 Refer to **Section 2.7** for other options to meet the regulations.

37 Figure 1 Landscape Edges

38 Figure 2 Residential Perimeter Landscape Edge

39 Figure 3 Non-residential Perimeter Landscape Edge

40 Figure 4 Typical Street Tree Layout vs. Informal Clustering

41 Figure 5 Street Tree Location Criteria

42 Figure 6 Residential Parking

43 Figure 7 Non-residential Parking

- 1 Figure 8 Solar Canopies over Parking
- 2 Figure 9 Residential Development Internal Landscaping

3 Appendix A. Schedules

- 4 A completed schedule for each site condition required shall be included on the Landscape Plan.
- 5 Schedule A: Perimeter Landscape
- 6 Schedule B: Street Trees
- 7 Schedule C: Parking Lot Internal Landscaping
- 8 Schedule D: Loading & Service Areas
- 9 Schedule E: Residential Development Internal Landscaping
- 10 Schedule F: Recreation Open Space
- 11 Schedule G: Native Plants & Biodiversity
- 12 Schedule H: Stormwater Management Facilities

13 Appendix B. Requirements for Landscape Plan

14 Note: Refer to the Department of Planning and Zoning checklists for the most current submission requirements
15 per each plan type submittal.

16 **Landscape Plans provided as part of the plan set for Site Development Plans or provided with**
17 **supplemental plans for Final Plans must include the following information:**

- 18 • Existing base information required for the Final Plan or Site Development Plan
- 19 • Proposed grading, structures, parking and loading areas, pedestrian areas, roads, **driveways** and access
20 areas, easements, utilities, storm drains and stormwater management areas, signs, lighting, etc.
- 21 • Location, general type and quality of existing vegetation and specimen trees
- 22 • The location and type of all existing freestanding trees on the property over 6 inches in **caliper** and all small
23 tree groups or hedgerows that do not meet the definition of a forest
- 24 • Existing vegetation to be saved; existing forest areas to be saved in accordance with the forest
25 conservation plan shall be identified
- 26 • Sedimentation and erosion control plan identifying methods and details for protection of exiting vegetation
27 during construction
- 28 • Location and identification by symbol (graphic, letter and/or number) of all proposed plants
- 29 • Plant schedule that includes botanical and common name, quantity, spacing and size at time of planting of
30 all proposed plant materials and other landscaping
 - 31 ○ Plant schedule shall also note which plants are proposed to meet native plant requirements
- 32 • Location, description and necessary details of other landscape improvements, such as earth berms, walls,
33 fences, screens, street furniture, lights and courts or paved areas

- Plant installation details, root barrier details, soil preparation information
- Schedules showing required and proposed quantities of landscape elements. All schedules included in **Appendix B** are based on the landscape types and planting requirements described in **Section 3.2**
- Certification and signature of the owner and signature of the Landscape Architect, Certified Professional Horticulturist or Chesapeake Bay Landscape Professional

6 Appendix C. Landscape Installation Guidelines / Details

7 Landscape Plan preparers should have their own set of landscape installation guidelines, planting details, root
8 barrier details and specifications, and soil preparation specifications, which are customized to the specific project
9 site and conditions. However, in addition to the landscape standards and details (as applicable to the project site)
10 outlined in the Howard County Design Manual, Volume IV, the following guidelines and details are provided for
11 information only and are not meant to replace site specific details and specifications as provided by the
12 Landscape Architect.

13 C.1 General Planting Standards

14 Planting standards must be as outlined below or as specified by best practices in the industry. Any item or
15 procedure not mentioned below may be as specified in the Landscape Specification Guidelines published
16 by the Landscape Contractors Association (latest edition) or as subsequently amended. In addition to
17 meeting the General Planting Standards described below, plantings required by other Howard County
18 manuals may supersede these standards.

19 C.2 Size, Condition, & Quality

- Quality and size of plants, spread of roots, and size of root balls must be in accordance with ANSI Z60.2 *American Standard for Nursery Stock*, latest edition.
- Minimum tree and shrub sizes must be provided in accordance with the Plant Size Requirements as described in **Section 3.2.1.c** of the Landscape Manual.
- Major deciduous trees must have a clear trunk, free of branches, to a minimum height of 6 feet.
- Plants shall not have multiple leaders, unless this is the natural form; multi-stem trees are not acceptable for required street tree planting.
- Plants shall have been grown in a climate with similar conditions to the project location for two years before planting.
- Plants shall be high quality nursery grown. Plants shall be healthy and vigorous, typical of their species and variety; and have well-developed branches, densely foliated, and vigorous root systems.

32 C.3 Installation

- Contact Miss Utility in advance of any digging.
- Dig planting pits and beds, amend soils, backfill planting areas, and install plants only when soil conditions are not wet, and when mixing and backfilling will not adversely affect soil structure.
- The plan preparer of the landscape plan shall include all standard details that apply to a given project as part of the landscape plan submission. Plants must be installed in accordance with the approved planting details.
- Do not handle, move, bind, tie, or otherwise treat plants so as to damage the root ball, roots, trunk, or branches in any way.

- 1 • Plants delivered on site not planted the same day must receive proper care and watering at all
2 times.
- 3 • At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. When
4 the root flare is not visible, the soil on the top of the root ball shall be shaved, without damaging the
5 trunk, to expose the natural flare. The top of the root ball is the level where the natural flare enters
6 the soil.
- 7 • All trees must be set so that the top one-eighth of the root ball sits above the finish grade, or in
8 accordance with the planting details on the approved Landscape Plan.
- 9 • Plants shall rest on undisturbed existing soil in the planting holes. When plantings are proposed in
10 fill areas, a sequence of construction note shall specify:
 - 11 ◦ fill in planting areas shall be compacted in three inch lifts during fill and grading operations
 - 12 ◦ the site shall settle naturally for one year after finish grade and before plant installation.
- 13 • Care shall be exercised in setting all plants vertically and locating street trees in the center of tree
14 pits.
- 15 • All trees must be staked or braced to provide stabilization during the period of establishment. When
16 staking or bracing trees, use the simplest and least restrictive method required to provide
17 stabilization in accordance with best practices of the industry. All staking and bracing shall be
18 completed the same day as planting and shall be removed after one year.
- 19 • Mulch shall be a natural product of 98% shredded hardwood bark and contain less than 2% wood
20 or other debris, with no additives or other treatment. Mulch shall be applied to a uniform minimum
21 depth of 3 inches and shall be so distributed as to create a smooth, level cover over the exposed
22 soil, and should not be mounded at the bases of trees. Do not place mulch within at least 3 inches
23 of trunks or stems to avoid mounding above the root flare.
- 24 • Plants must be watered to saturate each individual planting hole on the same day as planting and
25 every three days after planting for a minimum of 2 weeks. During this period, rainfall does not
26 constitute watering.
- 27 • Continued water and care should be specified by the plan preparer to ensure the plantings establish
28 and thrive.

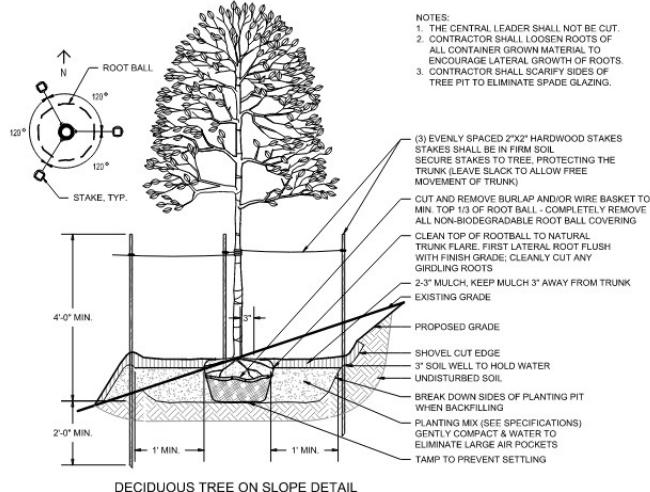
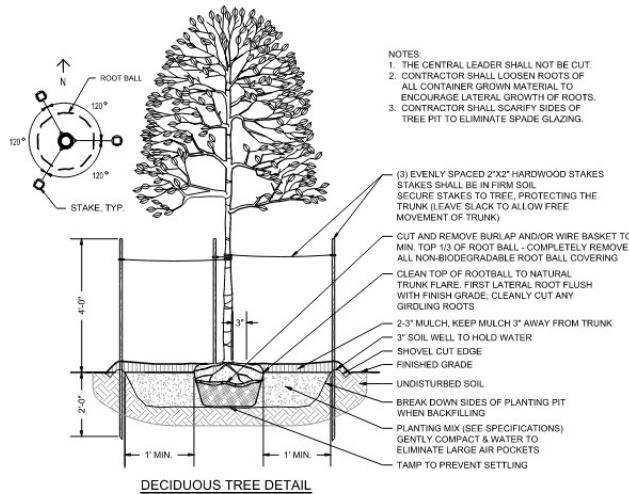
29 C.4 Preparing Plant Beds

30 Any plantings that are proposing shrubs, perennials and grasses shall be planted in prepared planting beds.
31 Trees may be included in planting beds at the designer's discretion. Designers should include specifications
32 for the planting beds that are specific to the site conditions and proposed plantings. In general, the
33 specifications should include:

- 34 • Soil testing to determine requirements for amendments such as organic material, fertilizer, lime and
35 other amendments.
- 36 • Before adding soil amendments, the plant bed shall be free of trash and large debris.
- 37 • Soil amendments, as recommended based on soil test results, shall be incorporated into the plant
38 bed areas as directed by Landscape Architect's specifications. At a minimum, organic matter shall
39 be spread over the bed to a depth of 2" after the soil has been loosened. The organic matter shall
40 then be worked into the bed.
- 41 • Plant beds shall have a shovel-cut or machine cut edge with a depth of 2" to 3".
- 42 • The plant bed shall be slightly raised from the surrounding area as a result of the amendments and
43 not lower, except when the planting area is meant to serve as a SWM facility.

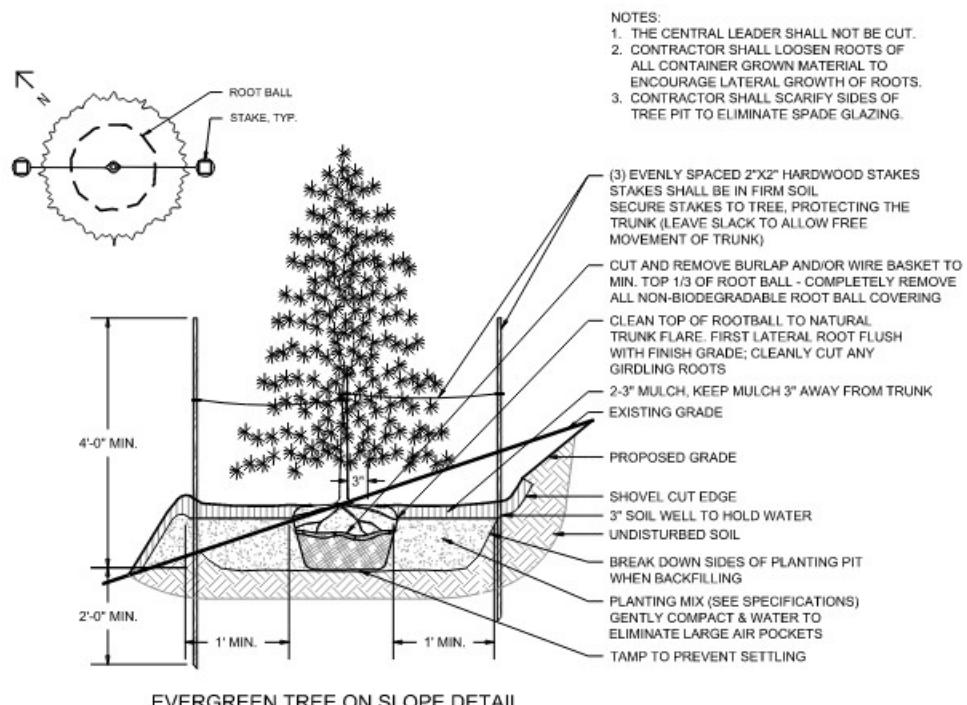
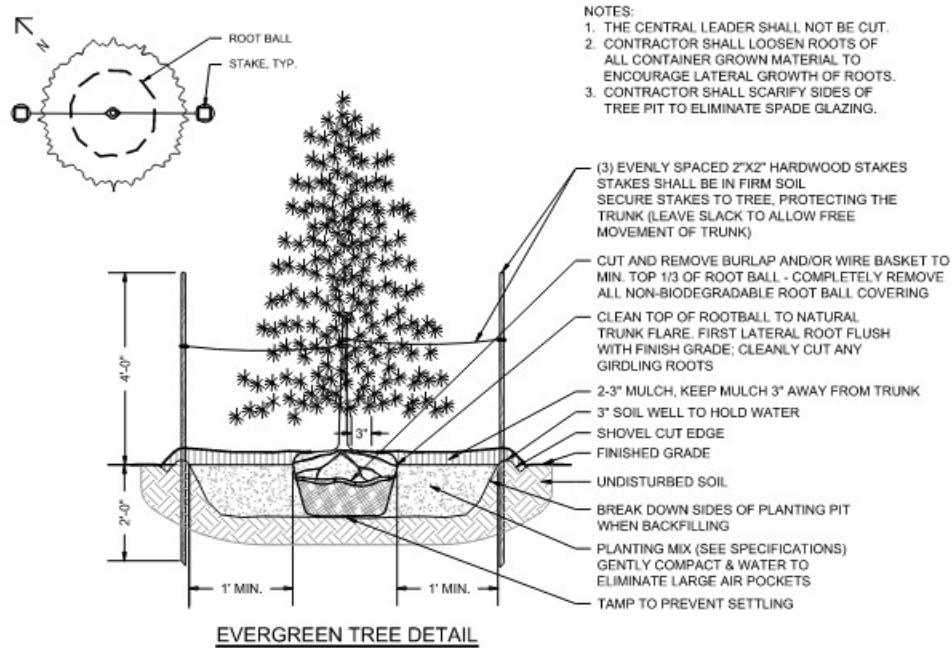
- The entire plant bed shall be mulched after plants are installed and any required top dressings are applied (e.g. fertilizers, pre-emergents, etc.). Mulch shall be a natural product of 98% shredded hardwood bark and contain less than 2% wood or other debris, with no additives or other treatment. Mulch shall be applied to a uniform minimum depth of 3 inches and shall be so distributed as to create a smooth, level cover over the exposed soil and should not be mounded at the bases of trees or shrubs. Do not place mulch within at least 3 inches of trunks or stems to avoid mounding above the root flare.
- If other mulch materials are specified, the landscape professional shall include detailed specifications for use of the materials and any special handling of the plant material required (i.e. additional watering).

C.5 Planting and staking details



GENERAL TREE STAKING NOTES:

1. THE STAKING CAN INCLUDE GALVANIZED TWISTED WIRE WITH HOSE SECTIONS AGAINST THE TRUNK, TIE WEDGING, POLY CARBON-Lock TREE TIE OR OTHER SUITABLE MATERIAL.
2. GUYING, RATHER THAN STAKING, IS APPROPRIATE FOR LARGE CALIPER TREES (LARGER THAN 3" CAL.), LARGE ROOTBALLS (42" DIA. OR LARGER), OR WHEN NECESSARY ACCORDING TO SITE CONDITIONS, SUCH AS EXPOSED AND WINDY SITES OR SITES WITH AN EXCESS FILL CONDITION. LANDSCAPE ARCHITECT SHALL PROVIDE GUYING DETAIL.
3. REMOVE ALL TREE STAKING AND GUYING MATERIALS FROM THE TREE AFTER THE FIRST GROWING SEASON.

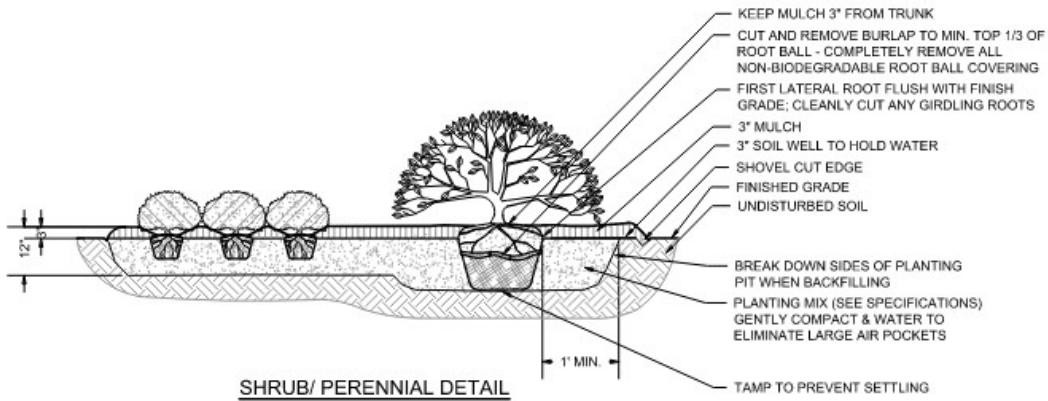


GENERAL TREE STAKING NOTES:

1. TREE STAKING TIES CAN INCLUDE GALVANIZED TWISTED WIRE WITH HOSE SECTIONS AGAINST THE TRUNK, TIE WEBBING, POLY CHAIN-LOCK TREE TIE OR OTHER SUITABLE MATERIAL.
2. GUYING, RATHER THAN STAKING, IS APPROPRIATE FOR LARGE CALIPER TREES (LARGER THAN 3" CAL.), LARGE ROOTBALLS (42" DIA. OR LARGER), OR WHEN NECESSARY ACCORDING TO SITE CONDITIONS, SUCH AS EXPOSED AND WINDY SITES OR SITES WITH AN EXCESS FILL CONDITION. LANDSCAPE ARCHITECT SHALL PROVIDE GUYING DETAIL.
3. REMOVE ALL TREE STAKING AND GUYING MATERIALS FROM THE TREE AFTER THE FIRST GROWING SEASON.

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NOTES:
1. CONTRACTOR SHALL LOOSEN ROOTS OF ALL
CONTAINER GROWN MATERIAL TO ENCOURAGE
LATERAL GROWTH OF ROOTS.
2. CONTRACTOR SHALL SCARIFY SIDES OF
SHRUB PIT TO ELIMINATE SPADE GLAZING.
3. PERENNIALS SHALL BE PLANTED IN 12"
DEPTH



1 C.6 Root barrier details and specifications

2 Details and specifications herein are general in nature and are provided as examples. Landscape Plan
3 preparer shall provide root barrier details and specifications customized to specific project site conditions
4 and product specified.

5 C.6.1 Root barrier product

6 Black, molded, modular panels 24 inches high (deep), 85 mils thick, and with vertical root
7 deflecting ribs protruding 3/4 inch out from panel surface; manufactured with minimum 50 percent
8 recycled polyethylene plastic with UV inhibitors.

9 C.6.2 Root barrier installation

10 Install root barrier where trees are planted within 96 inches of paving or other hardscape
11 elements, such as walls, curbs, and walkways, unless otherwise indicated on Drawings.

12 Align root barrier with bottom edge angled at 20 degrees away from the paving or other
13 hardscape element and run it linearly along and adjacent to the paving or other hardscape
14 elements to be protected from invasive roots.

15 Install root barrier continuously along all paving edges and hardscape elements, unless otherwise
16 approved by Department of Planning and Zoning.

17 • Position top of root barrier according to manufacturer's written recommendations.

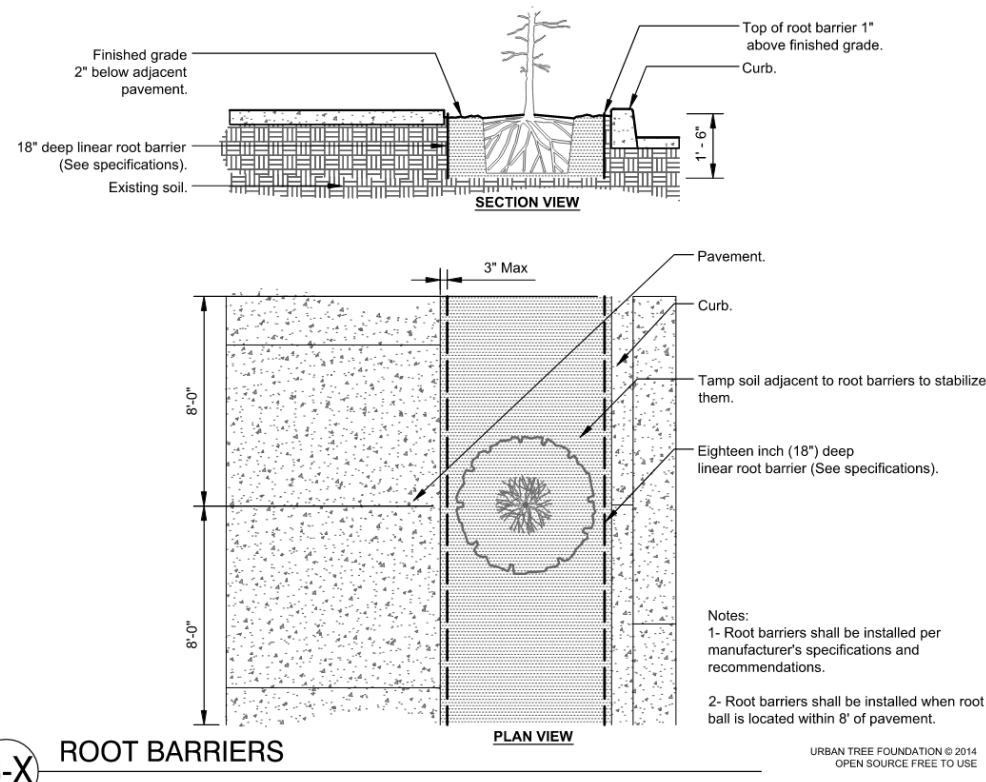
18 • Overlap root barrier a minimum of 12 inches at joints.

19 • Do not distort or bend root barrier during construction activities.

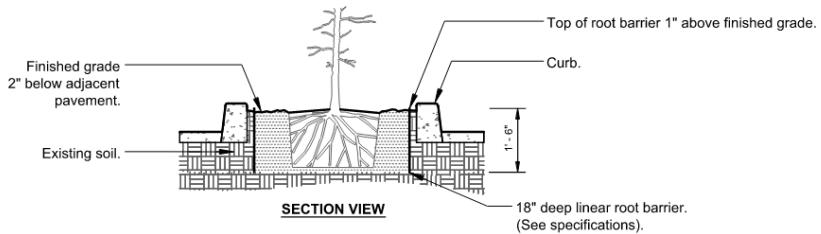
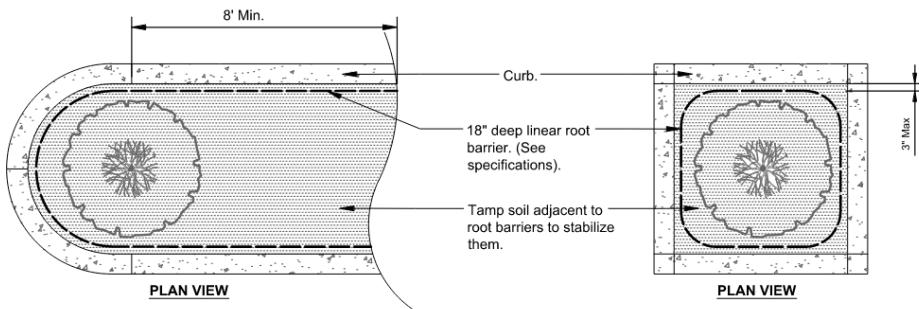
20 • Do not install root barrier surrounding the root ball of tree.

21 Generic root barrier details (per Urban Tree Foundation open-source details)

22 These details are generic in nature. Landscape architect or designer shall provide details specific
23 to project/site conditions. Note: Continuous root barrier is required per Landscape Manual
24 Appendix D.6.2



1



Notes:
1- Root barriers shall be installed per manufacturer's specifications and recommendations.
2- Root barriers shall be installed when root ball is located within 8' of pavement.

URBAN TREE FOUNDATION © 2014
OPEN SOURCE FREE TO USE

2



3 C.7 Soil preparation

4 Landscape Plan preparers must include soil preparation specifications as part of the Landscape Plan
5 submission that are customized to the specific project site and proposed plantings. The following serves as

1 a guide or checklist for minimum standards and are not intended to be copied directly onto the plans by the
2 design professional.

3 **C.7.1 Soil Composition**

4 In general, planting specifications should include the following considerations on all landscape
5 plans:

- 6 • When possible, existing topsoil should be stockpiled separately from subsoil during mass
7 grading to be redistributed at final grade. Topsoil should not be permanently removed
8 from a project site.
- 9 • Using subsoil for planting areas and turf areas should be avoided. When unavoidable,
10 appropriate soil amendments should be provided.
- 11 • Redevelopment of sites no longer in a natural condition should include detailed soil
12 specifications for the site and proposed plantings.
- 13 • Planting soils may be native soils, organically amended existing soil, or a topsoil blend
14 mixed to achieve the specifications on the plans.
- 15 • Minimize compaction of planting areas during construction.
- 16 • Percolation testing and soil composition testing are recommended to inform soil
17 preparation specifications for each site.
- 18 • Soil composition standards - amend existing soil as needed or provide a topsoil mix to
19 achieve required ranges. Ranges shall be determined by landscape professional and be
20 specific to the project and proposed planting.
- 21 • Amend soils and fertilize planting areas and tree pits as needed to remedy specific
22 deficiencies revealed by a soil test. The use of compost or other natural nutrient sources
23 and soil amendments is encouraged.

24 **C.7.2 Soil Volume Standards for Tree Plantings**

25 In order to provide trees an adequate volume of quality soil to thrive, trees planted in parking lot
26 landscape areas and between sidewalks and road rights-of-way or any location surrounded by
27 impervious area, planting details shall include current best practices for providing appropriate
28 planting soil. In urban areas or planting areas contained by impervious surfaces, the
29 specifications for adequate soil volumes shall address site-specific conditions such as sidewalk
30 widths and the presence of utilities.

31 The following should be considered for urban areas and tree planting areas contained by
32 impervious surfaces:

- 33 • The sizing of tree pits and planting areas and the required minimum soil volume per tree
34 or per planting area
- 35 • The use of structural soil
- 36 • The use of larger, continuous planting beds

1 Appendix D. Maintenance Guidelines

2 Landscape architects and designers should include minimum landscape maintenance requirements with the
3 landscape plan that are specific to each project. The information provided here is for information only and not
4 intended to replace the Landscape Architect's specifications.

5 D.1 Plant Maintenance

6 Maintain the required warranty period.

7 Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting
8 saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position,
9 and performing other operations as required to establish healthy, viable plantings.

- 10 • Contractor shall routinely monitor soil moisture and thoroughly water plantings on a weekly basis
11 for the first 30 days. After the initial 30-day period following installation, contractor shall thoroughly
12 water plantings on a bi-weekly basis or as needed to maintain adequate soil moisture. More
13 frequent watering may be needed for plants grown in nursery soil mixes lighter than the end planting
14 mix and in periods of drought.
- 15 • Fill in, as necessary, soil subsidence that may occur because of settling or other processes.
- 16 • Replace decomposed mulch materials and materials damaged or lost in areas of subsidence. Re-
17 mulching of the plant materials is required as necessary, but excessive mulch buildup and creation
18 of mulch volcanoes is not acceptable.
- 19 • Apply treatments as required to keep plant materials, planted areas, and soils free of pests and
20 pathogens or disease. Use integrated pest management practices when possible to minimize use
21 of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage,
22 mechanical controls such as traps, and biological control agents.
- 23 • Protect plants and planting areas from damage.
- 24 • Keep plants healthy, vigorous, trim and neat.
- 25 • Prune to maintain plants in normal growth pattern, only as necessary to remove dead limbs.
- 26 • Keep beds free of weeds.
- 27 • Maintain stakes and guys in taut and rigid state with wires in place and safety flags clearly visible.
28 Remove stakes and guys when no longer necessary for plant establishment after one year.

29 D.2 Repair and Replacement

30 General: Repair or replace existing or new trees and other plants that are damaged by construction
31 operations, in a manner approved by Landscape Architect.

- 32 • Submit details of proposed pruning and repairs.
- 33 • Perform repairs of damaged trunks, branches, and roots within 24 hours, if approved.
- 34 • Replace trees and other plants that cannot be repaired and restored to full-growth status, as
35 determined by Landscape Architect.

36 Remove and replace trees that are more than 25 percent dead or in an unhealthy condition as identified
37 before the end of the corrections period or are damaged during construction operations that Landscape
38 Architect determines are incapable of restoring to normal growth pattern.

- 39 • Provide new trees of same size as those being replaced for each tree of 6 inches or smaller in
40 **caliper** size.

1 • Species of Replacement Trees: Species selected by Landscape Architect and as approved by
2 Department of Planning and Zoning

3 D.3 Cleaning and Protection

4 During planting, keep adjacent paving and construction clean and work area in an orderly condition. Clean
5 wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

6 Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and
7 legally dispose of them off Owner's property.

8 Protect plants from damage due to landscape operations and operations of other contractors and trades.
9 Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged
10 plantings.

11 After installation and before Substantial Completion, remove nursery stakes, tie tape, wire, burlap, and
12 other debris from plant material, planting areas, and Project site.

13 At time of Substantial Completion, verify that tree-watering devices are in good working order and leave
14 them in place. Replace improperly functioning devices.

15 D.4 Maintenance Service

16 Maintenance Service for Trees, Shrubs, Herbaceous Perennials and Grasses: Provide maintenance by
17 skilled employees of landscape installer. Maintain as required in "Plant Maintenance". Begin maintenance
18 immediately after plants are installed and continue until plantings are acceptably healthy and well
19 established, but for not less than maintenance period below:

20 Maintenance Period: 24 months from date of Substantial Completion.

21 Appendix E. Landscape Plan Preparer Professional Statement

22 Include the Professional's Review Statement and the transmittal of drawings/documents with the Landscape Plan
23 submission. A copy of this document can be found on the DPZ ProjectDox website and the Landscape Manual
24 webpage.

The form is a template for a professional statement. It features a blue header bar with the text "Department of Planning & Zoning" and "HOWARD COUNTY MARYLAND GOVERNMENT". Below the header, it lists the address "3430 Court House Drive, Ellicott City, Maryland 21043" and phone numbers "410-313-2350", "www.howardcountymd.gov", "FAX: 410-313-3467", and "TDD: 410-313-2323". The main body of the form is titled "Professionals' Review Statement" and contains a text box for a professional's certification. The text box includes placeholder text: "I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer/landscape architect under the laws of the State of Maryland, License No. [redacted], Expiration Date [redacted].". Below the text box are fields for "[Seal and signature]" and "[Transmittal of drawings/documents: [Include a list of everything that requires a professionals' seal]]".