



*Gaithersburg*  
A CHARACTER COUNTS! CITY



CITY OF GAITHERSBURG

# TREE MANUAL

PLANNING AND CODE ADMINISTRATION  
31 SOUTH SUMMIT AVENUE  
GAITHERSBURG, MARYLAND 20877

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# CITY OF GAITHERSBURG TREE MANUAL

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CITY OF GAITHERSBURG  
**TREE MANUAL**

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## INTRODUCTION

The *City of Gaithersburg Tree Manual* presents methods for preservation of the City's existing trees and forest, as well as the creation of new landscapes, and is specifically designed to adequately offset the negative environmental impacts of urbanization. This manual is a guide for developers, contractors, civil engineers, landscape architects, urban foresters, natural resource specialists, and planners during preparation of plans submitted for review to the Planning and Code Administration and will also assist developers and their contractors in calculating costs associated with proposed development.

The City Code calls for the creation of this manual to outline procedures for compliance with Chapter 22 of the Code. Chapter 22 seeks to preserve, protect, and improve the health and general welfare of the public by promoting the environmental and public benefits of saving, maintaining, and planting trees and forested areas. To this end, Natural Resource Inventory and Forest Conservation Plans are required as a part of the development process, except as specifically exempted in the Code. In addition, Chapter 24, Article XIII, of the Code requires landscaping in compliance with guidelines outlined in this manual. The relevant portions of the Code appear as Appendix C of this manual.

### THE NEW FOREST CONSERVATION PROCESS

Since the last edition of the *Tree Manual*, the City of Gaithersburg has made a change in its forest conservation process. The Forest Conservation Plan continues to be part of the site development process. However, pursuant to the Maryland Economic Growth, Resource Protection, and Planning Act of 1992 as codified in Article 66B, *The Annotated Code of Maryland*, Section 3.05(a)(1)(viii), the Planning Commission has been granted authority to adopt policies and standards designed to protect environmentally sensitive areas from adverse effects of development. Specifically, these areas include: streams and their buffers, 100-year floodplains, habitats of threatened and endangered species, and steep slopes. On November 1, 1995, the City of Gaithersburg Planning Commission adopted the *City of Gaithersburg Environmental Standards*, which mandated creation of a Natural Resources Inventory (NRI) for most development sites. Within the NRI, the applicant must include specific information pertaining to soils, streams, floodplains, steep slopes, threatened and endangered species, existing wildlife, noise, and cultural resources, as well as all the information previously required for a Forest Stand Delineation. Unless specifically exempted, an NRI is to be submitted to the Planning and Code Administration along with annexation petitions and all applications for conceptual site development, rezoning, conditional use permit, special exception, and variance.

The new, comprehensive Natural Resource Inventory replaces the previous stand-alone Forest Stand Delineation in the forest conservation process. As before, a Preliminary Forest Conservation Plan is submitted to the City along with conditional use permit applications, optional method rezoning applications, schematic development plans, and conceptual site development plans. Once this plan is approved by the Planning Commission and the Mayor and Council (depending on the type of application), a Final Forest Conservation Plan must be included with all preliminary and final site development plans, special exception applications and land use permits. The Final Forest Conservation Plan will be reviewed and approved by the Planning Commission.

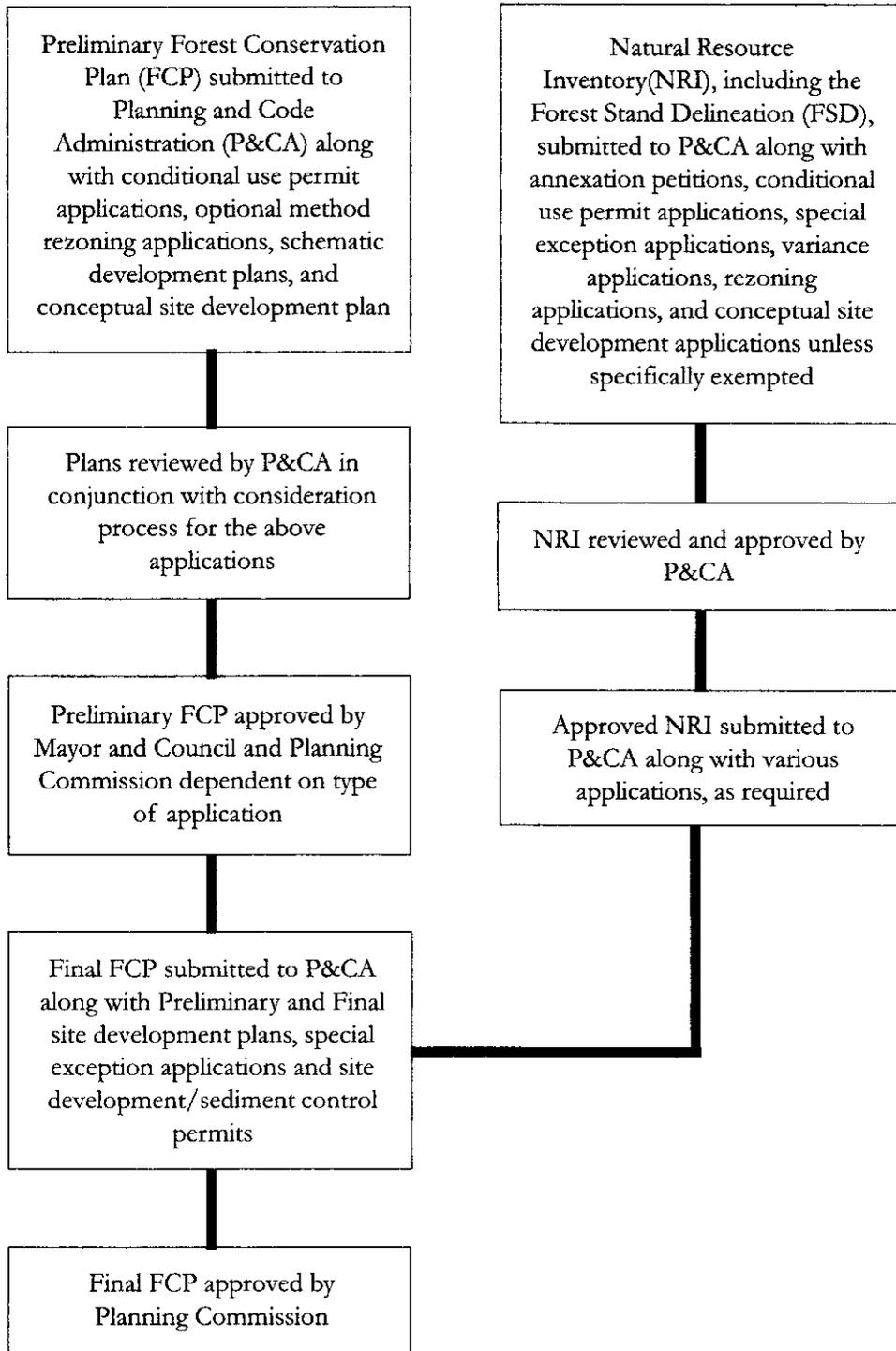
Although there has only been one change in the Forest Conservation process, there have been some modifications to the requirements within this process. This manual will make note of these changes.

#### **ADDITIONAL DOCUMENTATION REQUIRED**

It is important to review the *City of Gaithersburg Environmental Standards* and the *State Forest Conservation Technical Manual (SFCTM)*. The *City of Gaithersburg Tree Manual* has been created as a supplement to the SFCTM, which has been adopted by the City in Chapter 22 of the City Code. The SFCTM is available from Maryland Department of Natural Resources, Forestry Division, Tawes State Office Building, 580 Taylor Avenue, Annapolis, Maryland 21401. The *City of Gaithersburg Environmental Standards* is available from the Planning and Code Administration.

Any questions relating to this manual or other aspects of the development process within the City of Gaithersburg should be directed to the Department of Planning and Code Administration at 301-258-6330 between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday.

**THE FOREST CONSERVATION PLAN  
PROCESS**



## **FOREST STAND DELINEATION**

Previously the City had required only the Forest Stand Delineation (FSD). Now the FSD is incorporated into the Natural Resources Inventory (NRI), which is conducted during the initial stages of development. The purpose of the FSD is to determine the most suitable and practical areas for tree and forest conservation. By providing information on sensitive environmental areas at the beginning of the development process, this component of the NRI can serve as the base plan for the conceptual development plan.

### **LEGISLATION AND APPLICABILITY**

The NRI was a result of the Economic Growth, Resource Protection, and Planning Act of 1992 as codified in Article 66B, *The Annotated Code of Maryland*, Section 3.05(a)(1)(viii). This legislation granted planning commissions the authority to adopt policies and standards to protect sensitive environmental areas from the adverse effects of development. The City of Gaithersburg has incorporated the FSD into the NRI of the development site.

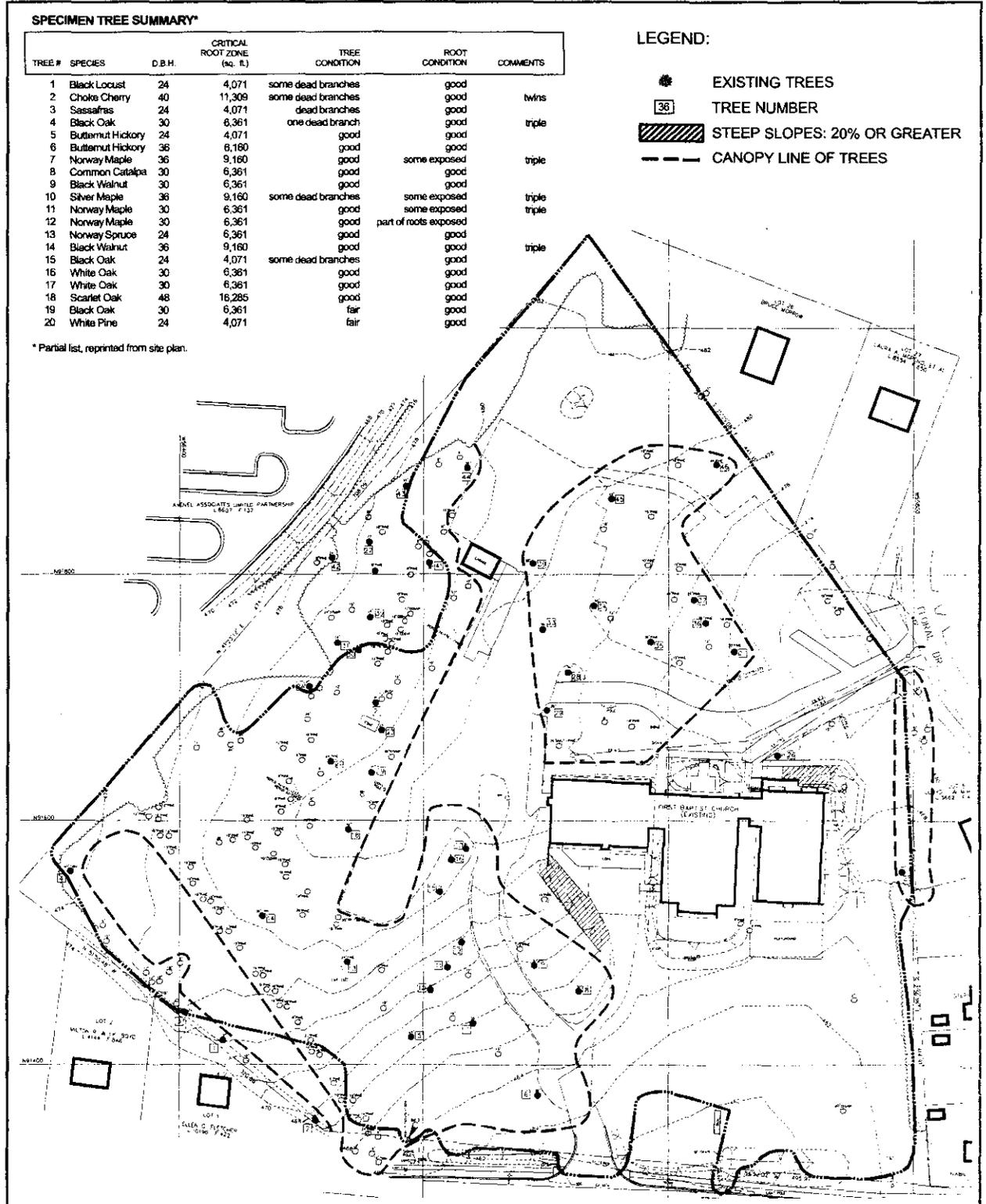
### **WHEN A NATURAL RESOURCE INVENTORY IS REQUIRED**

An NRI is required for:

1. Concept/Preliminary/Final Site Plan Submittal.
2. Amendment to Final Site Plan Application.
3. Special Exception, Conditional Use, and Variance Applications.
4. All Rezoning Applications, including MXD and Optional Method.
5. An Annexation Petition.

### FOREST STAND DELINEATION

Source: Hayes, Seay, Mattern & Mattern, Inc., Baltimore, Maryland, and Washington, D.C.



## PREPARATION OF A FOREST STAND DELINEATION

All environmental information, including a detailed inventory of existing forest, is to be included in the NRI of the development site. Though the FSD has been encompassed by the NRI, **applicants still need to perform all actions required by the Forest Stand Delineation.** For preparation of the NRI see the *City of Gaithersburg Environmental Standards*. The methodology for preparation of an FSD outlined in the *State Forest Conservation Technical Manual* is recommended for use in the City of Gaithersburg. While the City's requirements for the Forest Stand Delineation are almost identical to the State's requirements, there are some important differences. One important difference is in the City's definition of specimen trees to include all trees that:

... are 24-inch in DBH and greater; or are part of a historic site; or have been designated as a champion tree by the State, County or City; or have exceptional canopy shape and beauty; or are rare, threatened, endangered species; or have been individually identified on an approved forest conservation plan.

In addition, categories which are exempt from the forest conservation requirements are very different between the State and the City. Section 22-4 of the City Code, contained in Appendix C of this manual, lists these exemptions.

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## FOREST CONSERVATION PLANS

Section 22-1 of the City Code establishes the purpose of the forest conservation ordinance: “to preserve, protect and improve the health and general welfare of the public by promoting the environmental and public benefits of saving, maintaining and planting trees and forested areas.” The forest conservation section of the *City of Gaithersburg Tree Manual* supplements the requirements of the *State Forest Conservation Technical Manual*. In response to changes in land use, a Forest Conservation Plan is the guide to the preservation of existing trees and forest and the completion of required afforestation and reforestation. A more detailed discussion of the City’s afforestation and reforestation requirements follows this section. In considering forest conservation, the following concepts should be adhered to:

1. Identify forest stands and specimen trees that are most worthy of preservation.
2. Locate roads, building footprints, parking lots, storm water management structures and utility lines so as to minimize their impact on the trees that have been identified as most worthy of protection.
3. Manipulate proposed grading and the limits of disturbance by changing the elevation of building pads, parking lots and streets, or by using small retaining walls, to reduce the impact on trees worthy of protection.
4. Preserve trees in groves or clusters recognizing that survivability is greater for groups of trees than for individuals.
5. Review all construction factors that influence tree survivability.
6. All disciplines should respect the approximate critical root zone in design, realizing some improvements will need to be placed within the root zone.

### APPLICABILITY

Section 22-3 of the City Code establishes the applicability of the forest conservation ordinance to the following activities or applications:

1. Schematic development plans
2. Preliminary subdivision plans
3. Final site plans
4. Special exceptions
5. Sediment control permits for areas 40,000 square feet and larger
6. State-funded projects

### EXEMPTIONS

The City exemptions differ from those established by the State. To qualify for exemption, a request must be made in writing from the applicant to the Planning

and Code Administration. Section 22-4 of the City Code establishes twelve (12) conditions for exemption that are listed below:

1. A single lot zoned residential that has a recorded plat, results in less than 10,000 square feet of forest cleared, does not include forest subject to a previous approved plan, and is subject to a declaration stating that the lot will not undergo additional development within five years.
2. Agricultural activity.
3. Tree nursery.
4. State, County or City highway project.
5. Governmental project covered by state code.
6. Maintenance of utility rights-of-way.
7. Emergency utility work.
8. Electric generating stations.
9. Final site plan or an amendment to a final plan approved prior to December 28, 1992.
10. Preliminary site plan or subdivision approved prior to July 1, 1991.
11. Schematic development plans, zoned MXD, approved prior to January 1, 1992.
12. An amendment to any application or plan approved prior to December 25, 1992 that does not result in the cutting or clearing of any trees shown to be retained on any approved plan.

## FOREST CONSERVATION STANDARDS

The following standards are in addition to those required by the *State Forest Conservation Technical Manual*.

**Afforestation.** Afforestation should be accomplished by either providing forest cover on-site or off-site. Chapter 22 of the City Code also allows for afforestation in the form of tree cover as defined in the Code. Should these options prove unachievable, off-site afforestation can be done along off-site streets or in high priority areas of publicly owned land. A map of these areas is contained within the Sensitive Areas Element of the Master Plan.

**Reforestation.** Reforestation must be accomplished using a minimum of 1-inch caliper trees at 250 per acre planted 15-feet on center or using 2-inch caliper trees at 100 per acre planted at 20-feet on center. Off-site reforestation requires 2-inch caliper trees at 100 per acre. Off-site street trees can be planted by the applicant following plan approval by the City Beautification Committee or the applicant can provide the necessary funding along with a work estimate from a local contractor. Such an estimate must be approved in advance by the Planning and Code Administration.

**Forest Retention.** Areas containing specimen trees and/or groupings of non-specimen trees over 12" in DBH that amount to less than 10,000 square feet in area, can be included as retained forest as long as a minimum of 75 percent of the critical root zones are in areas of 10,000 square feet or greater.

**Forest Protection.** A 36-inch-high chain link fence or super-silt fence is required to protect all forest retention areas during clearing, grading, and construction operations. Silt fence must be incorporated where necessary to block siltation; an earthen dike may be used in lieu of the fabric. The detail on page 15 must be shown on the Final Forest Conservation Plan. Alternative fencing types approved by the Planning and Code Administration can be used where forest retention areas contain very young trees, where the development activity is on higher ground than retention areas, and where no impacts to critical root zones of specimen trees are proposed.

**Conservation Easements.** Two types of conservation easements may be used. A sample easement can be found in Appendix B. These conservation easements must be marked with monuments where they exist on private residential lots. An example of such a monument can be seen on page 16.

**Maintenance and Management Agreements.** Maintenance and management agreements are required for both forest retention areas and reforestation/afforestation areas. This agreement requires certification from a landscape architect, forester, or certified arborist that all planting is done per the submitted reforestation plan. **The maintenance agreement must be placed on the reforestation plan itself.** Additionally, as part of the forest conservation plan, the applicant must submit an annual report on the health of the reforested plants. A sample agreement can be seen in Appendix B.

## PRELIMINARY FOREST CONSERVATION PLAN CHECKLIST

- 1. Clear indication of limit of disturbance line.
- 2. Plan must be at same scale as site plan or grading plan.
- 3. Completed City of Gaithersburg Forest Conservation worksheet (see page 22).
- 4. Locations of all improvements as shown on the site plan.
- 5. General or conceptual locations of all sediment control devices and structures.
- 6. Locations of proposed utilities.
- 7. Clear graphic indication and acreage of all forest conservation areas on the plan including the location, type and size of any specimen trees as shown on the Forest Stand Delineation and the Critical Root Zones for all such trees whose critical root zones are impacted by the Limit of Disturbance.
- 8. Clear graphic indication and acreage of all proposed afforestation/reforestation areas along with a brief description of planting methodology.

*NOTE:* The site plan can be used as a base plan. In addition, the Forest Conservation Plan can be combined with the site plan and/or landscape plan for sites with less than 5 acres of wooded area.

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**FINAL FOREST CONSERVATION PLAN CHECKLIST**

- 1. Items 1 through 7 from the Preliminary Forest Conservation Plan checklist.
- 2. Clear graphic indication of forest conservation areas on the plan, including the location, type and size of any specimen trees greater than 24-inch DBH.
- 3. Location of all the specimen trees using surveying equipment to verify the locations shown on the FSD.
- 4. Critical root zones for all trees to be saved greater than 12-inch DBH that are impacted by the limit of disturbance line.
- 5. Root pruning lines for all critical root zones that are encroached upon by the limit of disturbance line.
- 6. Protective devices with details.
- 7. Afforestation/reforestation areas and acreage of each area.
- 8. Planting plan, pursuant to this manual and the *State Forest Technical Manual*;
- 9. Tree cover summary when using tree cover to meet afforestation requirements.
- 10. Locations of signs identifying all forest conservation, reforestation, and specimen trees and details of sign types.
- 11. Two-year maintenance and management agreement with certification.
- 12. Maintenance schedule for existing specimen trees to be retained, i.e., pruning, deep root fertilization, mulching as needed.
- 13. Locations of all utilities and special utility installation procedures.
- 14. Locations of forest conservation signage as required by this manual.
- 15. Special paving areas with details as needed.
- 16. Locations of aeration systems with details as needed.
- 17. Locations of retaining walls with details as needed.
- 18. Location of all super-silt tree protection fencing:
  - a. The location of all super-silt tree protection fencing must be shown on all Forest Conservation Plans and site plans.
  - b. The applicant must hold a pre-construction meeting with Planning and Code Administration staff to ensure that fence is properly installed.
- 19. The following notes:
  - a. Pre-construction meeting, held on-site to include a presentation of protective measures to construction supervisors, equipment operators, developer's representative, and site and sediment control inspectors.
  - b. Clearing limits shall be rough staked by developer in order to facilitate location for trenching and fencing installation.
  - c. No clearing or grading shall begin in areas where tree treatment and preservation measures have not been completed.

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- d. The sequence of tree treatment and conservation measures shall be:
    - 1) Root pruning trenching.
    - 2) Tree protection fencing.
    - 3) Aeration system installation.
    - 4) Sign installation.
    - 5) Tree pruning and chemical treatment.
    - 6) Mulch treatment.
  - e. Above measures shall be directed in the field by the project forester, arborist, naturalist, ecologist, site engineer or landscape architect.
  - f. Tree protection fencing shall be maintained and repaired by the developer or contractor for the duration of construction and once approved by the city site inspector, must not be altered without prior approval by the city site inspector.
  - g. Access to fenced areas will only be permitted with the prior approval of the owner's representative and the city site inspector;
  - h. Designated aeration zones shall be protected with temporary fencing until final grading.
  - i. Any excavation or grading required within the fenced areas shall be done as directed and approved by the person mentioned in note # 5 and the city site inspector.
  - j. Trees, shrubs, or undergrowth shall be removed from the protected root zone areas only when necessary and shall be removed by hand.
  - k. Refer to tree protection action key for specific treatment of each specimen tree.
  - l. Attachment of signage, fencing, etc., to trees to be saved is prohibited.
  - m. After construction, all temporary barriers, fencing, debris, etc., shall be removed from the site by the contractor.
  - n. No sod or seed shall be planted within the designated root zones for all trees to be saved.
20. Submission of annual report on health of reforested plants.

**FOREST CONSERVATION INSPECTION PROCEDURES**

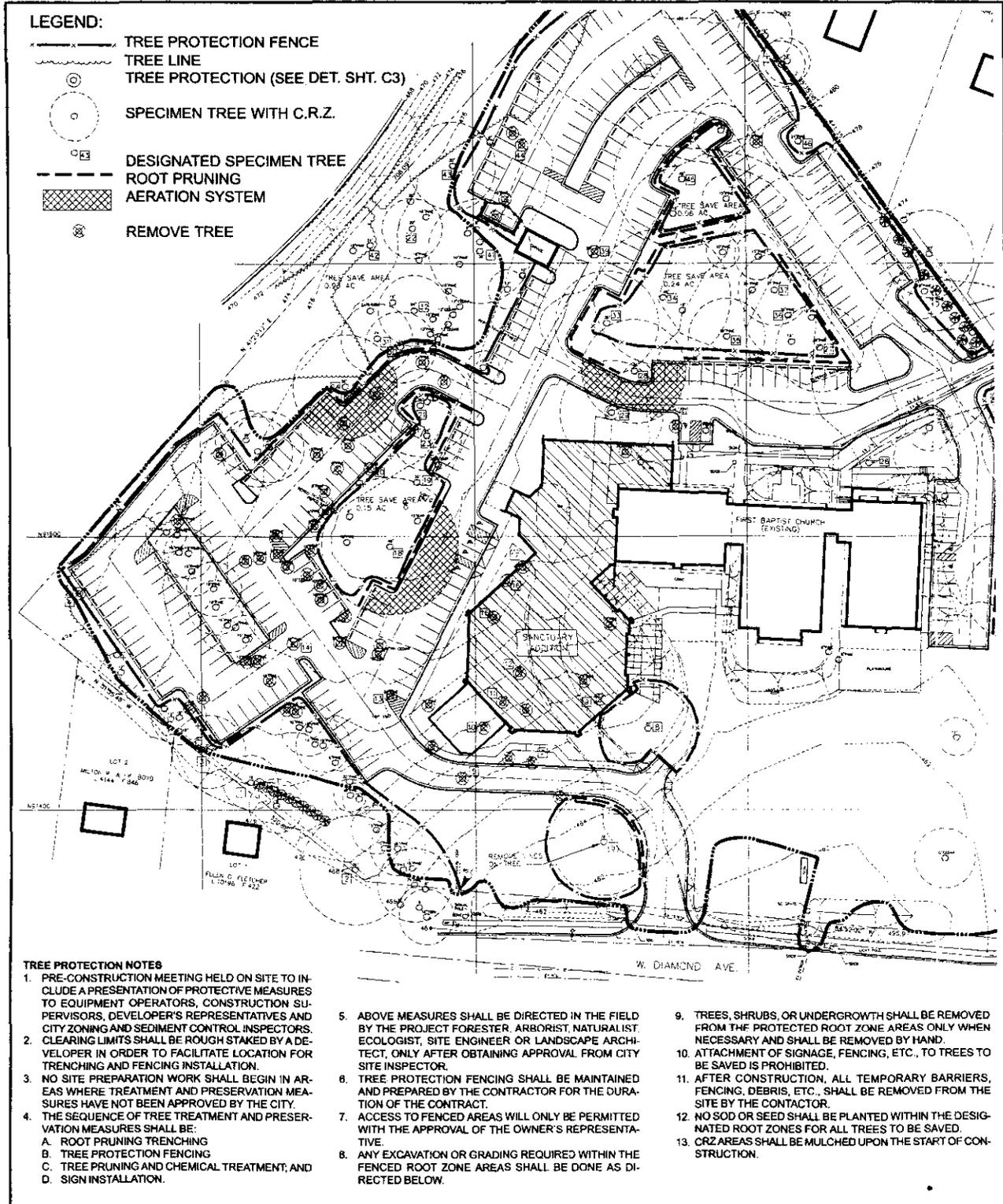
1. Upon permit issuance, the builder/developer must arrange for an engineers' stake out of tree protection in accordance with approved plans. A preconstruction meeting will then be scheduled to determine the location of tree protection devices. The Planning and Code Administration inspector shall adjust tree protection and root pruning in the field as necessary, which may expand or decrease the area being protected. Installation of all tree protection devices should be scheduled and an inspection arranged with the City after all work is complete. The City will issue a punch list for any remaining work needed prior to the start of grading, or issue a report approving the start of grading.
2. Once work begins on-site, the tree protection devices will be reinspected on a biweekly basis, and the builder/developer will be notified of any work that is needed. It shall be the builder/developer's responsibility to maintain all tree protection devices and make any repairs needed.
3. City approval is required prior to removal of any tree protection device or entrance into a tree save area. ***Tree save areas cannot be used for storage of any building materials.***
4. The Planning and Code Administration inspector may require pruning and removal of any tree in the tree save area during construction and prior to bond release. These decisions will be based on the trees' health, proximity to buildings, drainage, or other concerns. Every effort will be made to preserve those trees in the tree save area.
5. The City will require mitigation of trees lost during construction in accordance with the Forest Conservation Ordinance. Mitigation will be required prior to bond release, and all replacement trees must be inspected by the City after installation. These replacement trees shall have a one-year guarantee in accordance with the industry standards. The City may also allow the developer to escrow monies for mitigation to satisfy their obligation, which will be used by the City to purchase and install the replacement trees.
6. For mitigation and afforestation, City inspection is required after the plantings have been made. The maintenance period, one year or as stated in the maintenance agreement, will not begin until this inspection has been made. Quarterly reports to the City, if required, on the health of the trees in the save area should also be made, and any recommendations implemented. It shall be the builder/developer's responsibility to maintain these plantings until they are accepted by the City. A final inspection by the City will be made prior to the end of the maintenance period, and a punch list developed for any trees that

need to be replaced. The City may allow the developer to escrow monies to satisfy their obligation for any further planting required, which will be used by the City to purchase and install the replacement trees.

7. It shall be the builder/developer's responsibility to satisfy all requirements and conditions of the Forest Conservation Plan and/or any maintenance agreement. In the event of a violation, the City will take enforcement action in accordance with the Trees and Forest Conservation Ordinance (Chapter 22) of the City Code. This may include correction notices, civil citations, or collection of the bond guaranteeing this work.

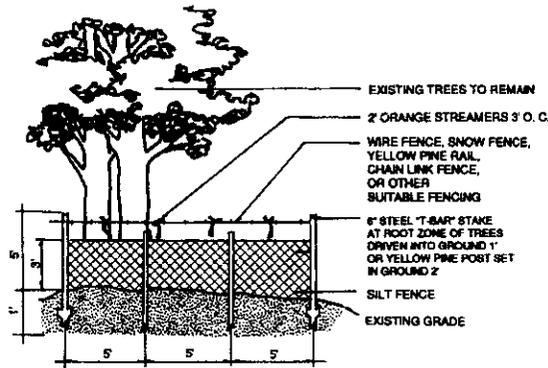
### FOREST CONSERVATION PLAN

Source: Hayes, Seay, Mattern & Mattern, Inc., Baltimore, Maryland, and Washington, D.C.

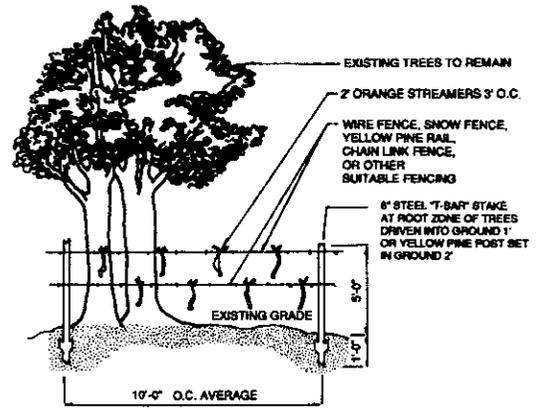


**FOREST CONSERVATION DETAILS**

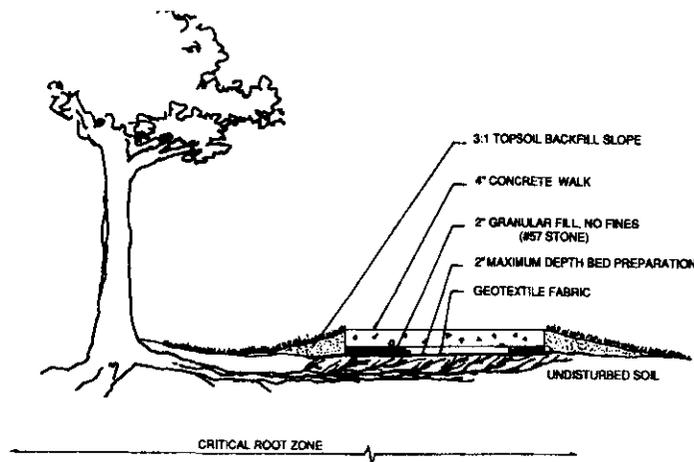
Source: Steve Clark & Associates



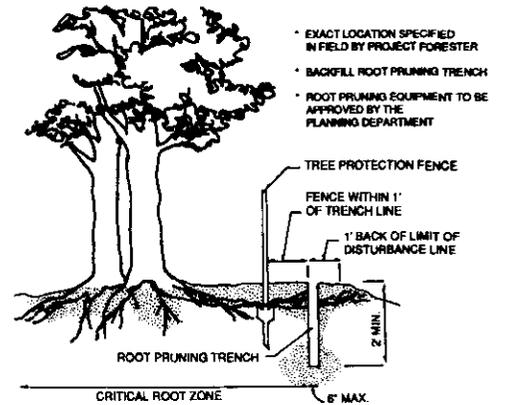
**COMBINED SILT AND TREE PROTECTION FENCE**



**CONSTRUCTION FENCE FOR TREE PROTECTION**



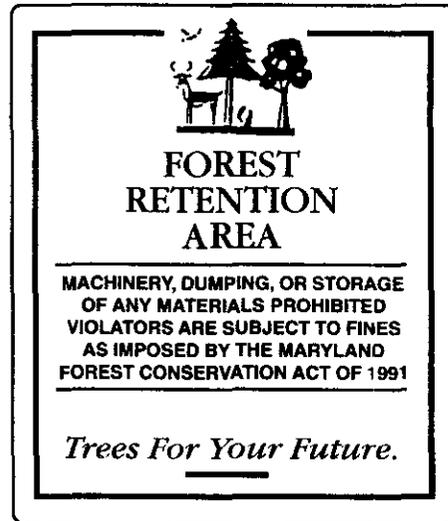
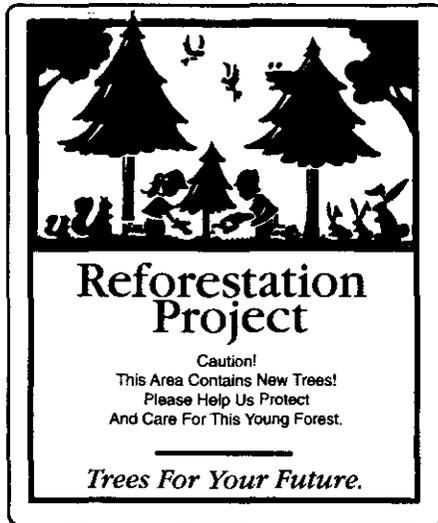
**CONCRETE WALK OVER CRITICAL ROOT ZONE**



**CONSTRUCTION FENCE FOR TREE PROTECTION**

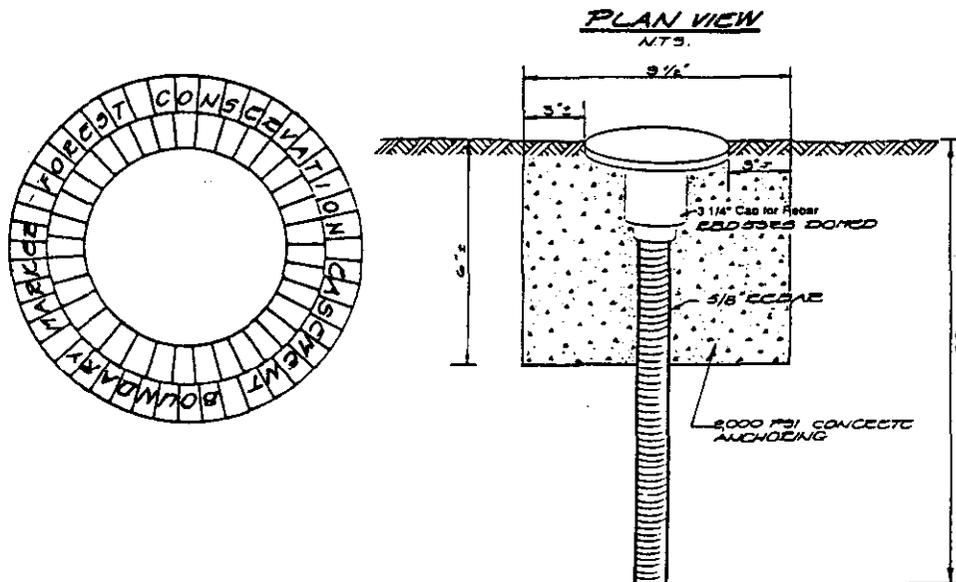
**REFORESTATION PROJECT  
AND FOREST RETENTION AREA SIGNS**

Source: The Tree Company, Catonsville, Maryland  
Size: 11" x 15"



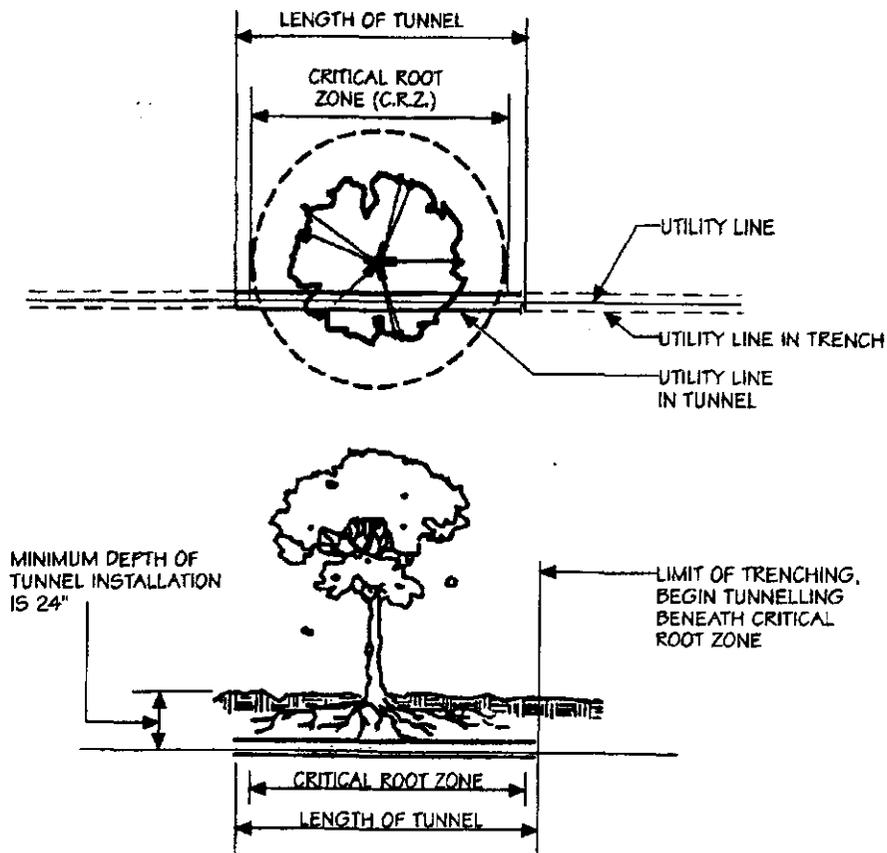
**FOREST CONSERVATION EASEMENT MARKER**

Source: Toll Brothers Inc., Rockville, Maryland  
Designed by David Little of Gutschick, Little and Weber, P.A.



## TUNNELING TECHNIQUES

Source: Maryland State Forest Conservation Technical Manual,  
Adapted from Fairfax, Virginia: *Vegetation Preservation and Planting*



### Notes:

- Tunnel should be located under Critical Root Zone at a minimum depth of 24 inches.
- Tunnel through the Critical Root Zone, resume trenching of utilities beyond the Critical Root Zone.

## **AFFORESTATION AND REFORESTATION**

As the requirements for and differences between afforestation and reforestation can be confusing, this section will clarify these terms and the required procedures. The Forest Conservation Worksheet contained on page 22 is used to calculate the level of afforestation and reforestation required. In order to complete the worksheet, three quantities must be known: the tract area, the forest cover prior to clearance and the amount of forest cover to be cleared. The Forest Stand Delineation, as included in the Natural Resources Inventory, determines the level of existing forest cover. The amount of forest cover to be cleared depends on the development proposed. The retained forest cover can be found by subtracting the amount of forest cover to be cleared from the existing forest cover.

### **AFFORESTATION**

The afforestation requirement depends on the relationship between the existing forest cover and the afforestation threshold. The afforestation threshold for all land uses is 15 percent of the net tract area. All sites with less forest cover than this threshold must be afforested to the threshold level. For example, a 100-acre site with 10 acres of forest cover (10 percent of the site) requires afforestation of 5 acres in order to attain 15 percent forest cover.

Clearance on a site with forest cover less than the afforestation threshold will also be subject to a reforestation requirement in addition to the afforestation requirement. The reforestation requirement does not replace or exempt an applicant from the afforestation requirement. Likewise, afforestation cannot count towards fulfilling a reforestation requirement.

### **REFORESTATION**

The reforestation requirement is determined by the relationship between existing forest cover, forest cover cleared, retained forest cover and the conservation threshold. The conservation threshold depends on the proposed land use of the site. Section 22-9 of the City Code specifies the following conservation thresholds by land use category:

Land Use	Conservation Threshold
Residential areas	20%
Institutional development areas	20%
Commercial and industrial areas	15%
Mixed-use development areas	15-20%

Multiply the appropriate percentage by the net tract area to express the threshold as an area. Residential and institutional portions of a mixed-use development must meet the twenty percent (20%) requirement.

In instances in which cleared forest cover was greater than the conservation threshold, reforestation must occur at the rate of one-quarter acre per acre cleared. This amount is offset by the forest cover retained that is greater than the conservation threshold. Thus, the reforestation requirement equals **one-quarter of area cleared minus the area retained which is greater than the conservation threshold.**

#### ***Example***

20 acres will be cleared on a 40-acre residential site with existing forest cover of 32 acres:

Conservation threshold is 8 acres

(20% for residential multiplied by 40-acre tract area)

Retained forest cover is 12 acres

(32 acres existing forest cover minus 20 acres cleared)

Retained forest cover greater than the conservation threshold is 4 acres

Therefore, **reforestation required is 3 x 20 acres - 4 acres = 1 acre.**

The breakeven point is the level at which one-quarter of the amount cleared is equal to the retained forest cover which is greater than the conservation threshold. By the calculation described above, the reforestation requirement at the breakeven point would be zero. The breakeven point can also be calculated as twenty percent (20%) of the existing forest cover in excess of the conservation threshold added to the conservation threshold. Thus, in the above example, the breakeven point is 20 percent of 24 acres (existing forest cover in excess of conservation threshold) plus 8 acres (the conservation threshold) equaling 12.8 acres. Any clearance that retains forest cover greater than the breakeven point results in no reforestation requirement. If 12.8 acres or more were retained in the example, no reforestation would be required.

When clearance reduces forest cover to less than the conservation threshold, the reforestation requirement is stronger. For forest cleared whereby the remaining forest cover is less than the conservation threshold, reforestation of two acres per acre cleared is required.

**Example**

28 acres will be cleared on a 40-acre residential site with existing forest cover of 32 acres:

Conservation threshold is 8 acres

(20% for residential multiplied by 40-acre tract area);

Retained forest cover is 4 acres

(32 acres existing forest cover minus 28 acres cleared);

Clearance above conservation threshold is 24 acres;

Clearance below conservation threshold is 4 acres;

Therefore, **reforestation requirement is 3 x 24 acres + 2 x 4 acres = 14 acres.**

## **OPTIONS FOR AFFORESTATION AND REFORESTATION**

There is a sequence of preferred options for afforestation and reforestation as set by Section 22-9(e)(1) of the City Code. The sequence is: selective clearing; on-site afforestation or reforestation; off-site retention, afforestation or reforestation; landscaping with an approved plan; natural regeneration on-site; and natural regeneration off-site. This sequence indicates the order that an applicant must consider methods of afforestation or reforestation. Thus, an applicant cannot decide to perform off-site reforestation when on-site reforestation is a feasible option.

This sequence can be modified for specific projects per Section 22-9(e)(2). But, the applicant must demonstrate to the satisfaction of the Planning Commission that a different sequence is necessary for the following:

1. To achieve the objectives of a master plan or other city land use policies or to take advantage of opportunities to consolidate forest conservation efforts; or
2. For public sites acquired or required to be dedicated before July 1, 1991, to ensure that the site can be used for its intended purpose without major design changes; or
3. For educational, recreational, and public safety facilities, to ensure that public safety is not compromised.

Only if an applicant can prove that the proposed site plan meets one of these three conditions can the preferred sequence be modified.

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## AFFORESTATION AND REFORESTATION PLANS

All afforestation and reforestation plans are included within or are the actual Forest Conservation Plan. Again, there are some differences between the City and the State requirements. Unlike the State, **whips and seedling stock are unacceptable in the City of Gaithersburg**. The City requires that, with any reforestation, an applicant must plant a minimum of 1-inch caliper trees. Within highly visible locations, including street trees, a 2-inch caliper tree shall be planted. See the table of minimum tree size requirements which follows. On-site tree cover can be applied toward a site's afforestation requirement, but not toward a site's reforestation requirement. Off-site street tree planting at 100/acre can be applied toward a site's reforestation requirement. To determine the total proposed tree cover, multiple the number of trees by the canopy size in square feet for the tree specie as specified in the Tree List (see Appendix B). The City also requires a two-year maintenance and management agreement (see Appendix B) with all Forest Conservation Plans. Through this maintenance and management agreement, the City can ensure that all vegetation planted as part of the afforestation and/or reforestation requirements survives. In addition, please note Forest Conservation Standards specified on page 8.

### MINIMUM TREE SIZES

<i>Tree Type</i>	<i>Minimum Size</i>	<i>Quantity</i>	<i>Use</i>
Shade or Street Trees	2" - 2½" cal.	100/acre	Along street, in parking lots, in open areas of lawn, etc.
Other Deciduous Trees	1" - 1½" cal.	250/acre	Planting beds, near buildings, in open areas, etc.
Evergreen Buffer Trees	8' in height	100/acre	Screening, buffering, etc.
Other Evergreen Trees	5' in height	100/acre	Accents, groupings in open areas, etc.

## CITY OF GAITHERSBURG FOREST CONSERVATION WORKSHEET

### TRACT AREA, FOREST COVER, AND CLEARANCE AREA

**A: Tract Area**

**B: Existing Forest Cover**

B = Forest Cover within Tract Area A

**C: Cleared Forest Cover**

C = Forest Cover to be cleared as result of development

**D: Retained Forest Cover**

D = B - C

(Existing Forest Cover B - Cleared Forest Cover C)

### AFFORESTATION

Use zero (0) for all negative numbers resulting from calculations.

**E: Afforestation Threshold**

E = Tract Area A x 15%

**F: Afforestation Required**

F = E - B

(Afforestation Threshold E - Existing Forest Cover B)

### REFORESTATION

Use zero (0) for all negative numbers resulting from calculations.

**G: Conservation Threshold**

G = Tract Area A x land use conservation percentage

**H: Existing Forest Cover greater than Conservation Threshold**

H = B - G

(Existing Forest Cover B - Conservation Threshold G)

**I: Retained Forest Cover greater than Conservation Threshold**

$$I = D - G$$

(Retained Forest Cover D – Conservation Threshold G)

**J: Clearance greater than Conservation Threshold**

$$J = H - I$$

**K: Retention Credit for retained forest cover greater than conservation threshold**

$$K = D - G$$

(Retained Forest Cover D – Conservation Threshold G)

**L: Clearance less than Conservation Threshold**

$$L = G - D$$

(Conservation Threshold G – Retained Forest Cover D)

**M: Reforestation Requirement**

$$M = 1/4J - K + 2L$$

**BREAKEVEN POINT****N: Breakeven Point**

$$N = K \times 20\% + G$$

(Retention Credit K x 20% + Conservation Threshold G)

**O: Clearance allowed without reforestation**

$$O = B - N$$

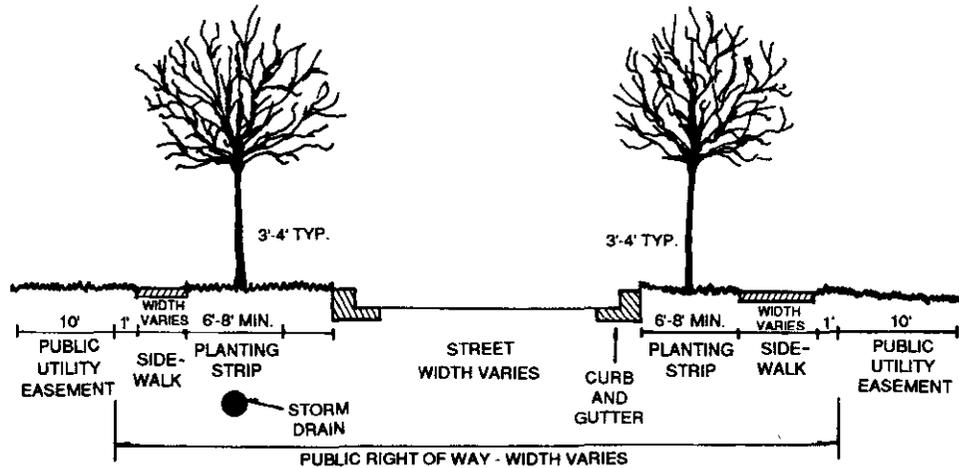
(Existing Forest Cover B – Breakeven Point N)

## STREET TREES

Section 24-237 of the City Zoning Ordinance states that “street trees are to be provided for all public streets within and adjacent to any proposed development where insufficient street trees presently exist.” Because the City recognizes the benefits of street trees, the Sensitive Areas Element of the City Master Plan establishes a citywide goal of increasing street tree planting, contains general guidelines, and maps depicting existing street trees and indicating those areas where street trees are lacking. Street trees also must meet the requirements of this manual. Appendix B of this manual is a list of native and non-native tree species and includes information on the appropriateness of certain species as street trees. Species native to this area should be used, especially oaks, due to the historic significance of the Forest Oak for which Gaithersburg is well known.

Street trees required by the zoning ordinance may be counted toward fulfilling off-site reforestation if the total off-site planting requirement exceeds two acres or 200 trees. However, street trees required by the zoning ordinance may not make up more than 25 percent of the total off-site reforestation requirement. Street trees planted along streets not adjacent to the applicant’s site may be counted towards reforestation. In cases requiring off-site reforestation, street tree planting is a top priority.

### STREET TREE LOCATION REQUIREMENTS



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## LANDSCAPE PLANS

The purpose of this chapter is to provide guidelines for the development of landscape plans required to be submitted to the City for approval.

### APPLICABILITY

Article XIII of Chapter 24 of the City Code requires that landscaping be planted in accordance with the guidelines established in this manual, except for the following:

1. Single family residential applications for one lot only; and
2. Any application proposing less than 5,000 square feet of disturbed area.

### WHEN REQUIRED

A Conceptual Landscape Plan is required with Preliminary Site Plan Review and Schematic Development Plans. A Final Landscape Plan is required with Final Site Plan Review, Amendment to Final Plan Review and with Special Exception Applications.

### CHECKLIST FOR CONCEPTUAL LANDSCAPE PLANS

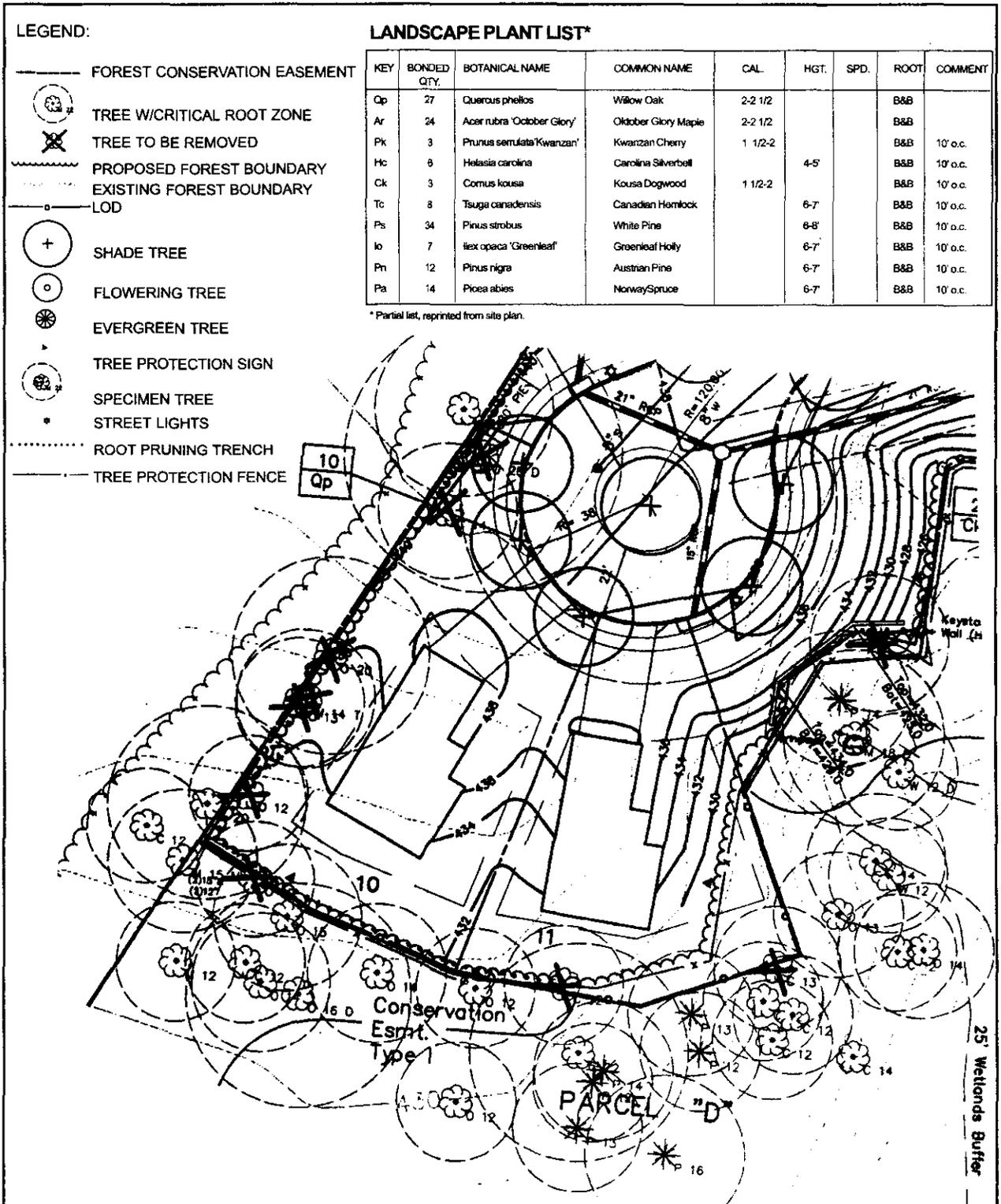
- 1. The conceptual site plan is to be used as a base plan.
- 2. Clear graphic representation of the location of each proposed plant as well as all existing trees identified for preservation on the Preliminary Forest Conservation Plan.
- 3. Plant key establishing a symbol for each general category of proposed plant, i.e., Large Shade Tree, Medium Shade Tree, Small Flowering Tree, Small Evergreen Tree, Large Evergreen Tree, Shrub Mass, Annual Bed, Ground Cover.
- 4. The tree cover summary lists all proposed trees. The ultimate canopy sizes for proposed trees shall be: 1,000 square feet for large shade trees; 700 square feet for medium shade trees and large evergreen trees; and 300 square feet for small flowering trees and small evergreen trees (see Tree List, Appendix B).

**CHECKLIST FOR FINAL LANDSCAPE PLANS**

- 1. Items 1 through 4 from above checklist.
- 2. Plant List - for each plant, list the quantity, botanical name, common name, size (in accordance with the minimum sizes after this section), container type and any specific comments.
- 3. General Notes. The following general notes must be placed on all landscape plans where relevant:
  - a. Individual homeowners must be notified at least one week prior to installation of plants on lots that have an occupied dwelling.
  - b. Unless otherwise stipulated by specific requirements of this manual, the landscaping shown on this plan must be planted in accordance with the latest edition of Landscape Specification Guidelines, developed by the MD-DC-VA Chapter of the Landscape Contractors Association.
  - c. All trees are to be located a minimum distance of 5 feet from all utility boxes, 5 feet from a storm drain inlet or man-hole, 10 feet from a fire hydrant, 15 feet from public street lights, 5 feet from driveway aprons, 20 feet from any traffic control sign, and at least 30 feet from any intersection.
  - d. Locations of street trees may be subject to change in order to avoid conflict with street lighting.
  - e. Any planting within a forest retention area, as designated on the forest conservation plan and shown on this plan, must be done to avoid any adverse impact to the roots of existing trees.
  - f. Plant type substitutions are permitted with verbal or written approval from the Planning and Code Administration.
  - g. All plant material will be reinspected for survival by the Planning and Code Administration one year following installation. A 10 percent maintenance bond will be retained during this time period.
  - h. All plants must meet the standards of the latest edition of American Standard for Nursery Stock sponsored by the Association of American Nurserymen.
  - i. No plant shall be located in areas of obvious poor drainage. If such conditions exist, contact the landscape architect immediately to relocate affected plant materials.
  - j. Soil conditions must be tested, verified and adjusted by the landscape contractor to insure that appropriate soil composition and PH levels are suitable for plant materials specified for that specific location.
- 4. Locations of proposed street lights as well as any parking lot lights along with details of each type of light.
- 5. Locations of all proposed and existing utilities – shown with bold lines.
- 6. Planting details and details of any landscape structures that are proposed.

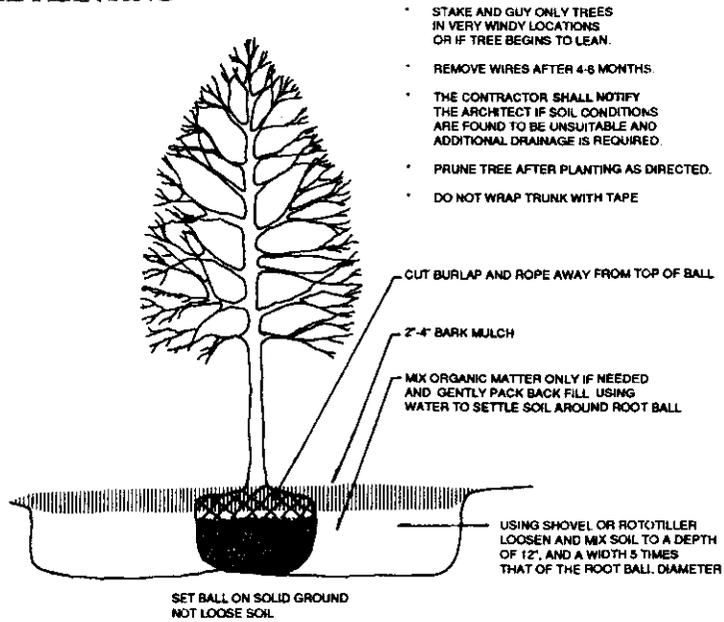
**FINAL LANDSCAPE PLAN**

Source: Macris, Hendricks & Glascock, Gaithersburg, Maryland



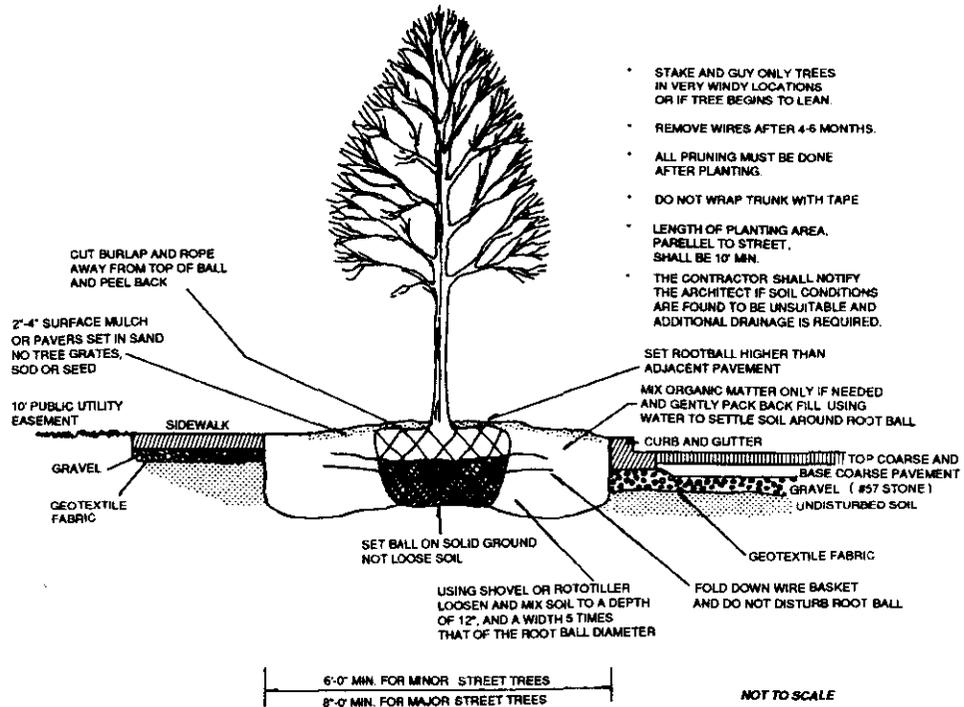
**PLANTING DETAILS**

**DECIDUOUS TREE PLANTING**



- STAKE AND GUY ONLY TREES IN VERY WINDY LOCATIONS OR IF TREE BEGINS TO LEAN.
- REMOVE WIRES AFTER 4-6 MONTHS.
- THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IF SOIL CONDITIONS ARE FOUND TO BE UNSUITABLE AND ADDITIONAL DRAINAGE IS REQUIRED.
- PRUNE TREE AFTER PLANTING AS DIRECTED.
- DO NOT WRAP TRUNK WITH TAPE

**STREET TREE AND PARKING LOT ISLAND PLANTING**

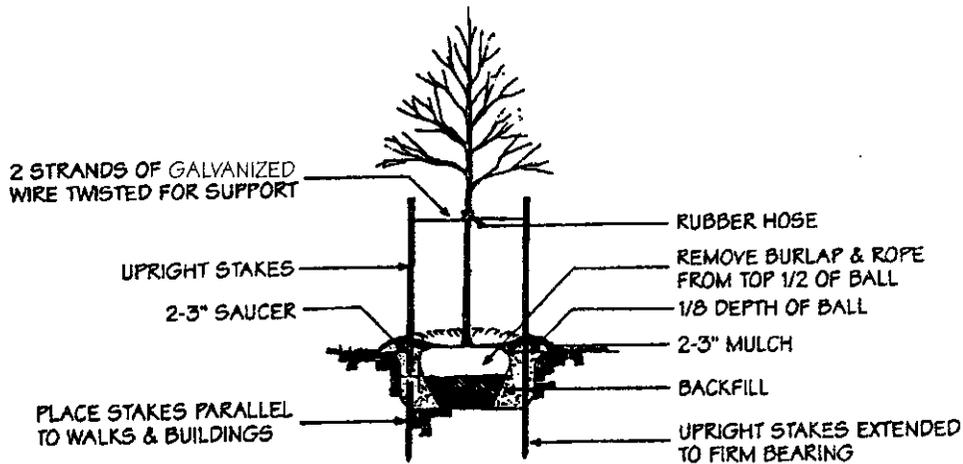


- STAKE AND GUY ONLY TREES IN VERY WINDY LOCATIONS OR IF TREE BEGINS TO LEAN.
- REMOVE WIRES AFTER 4-6 MONTHS.
- ALL PRUNING MUST BE DONE AFTER PLANTING.
- DO NOT WRAP TRUNK WITH TAPE
- LENGTH OF PLANTING AREA, PARELLEL TO STREET, SHALL BE 10' MIN.
- THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IF SOIL CONDITIONS ARE FOUND TO BE UNSUITABLE AND ADDITIONAL DRAINAGE IS REQUIRED.

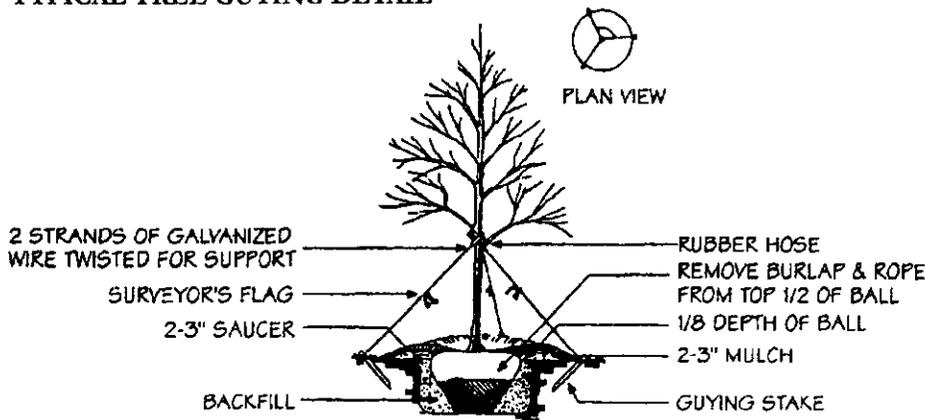
**PLANTING DETAILS**

Source: Maryland State Forest Conservation Technical Manual

**TYPICAL UPRIGHT STAKING DETAIL**



**TYPICAL TREE GUYING DETAIL**



Tree Size Height	Tree Size Caliper	Stake	#	Wire or Cable	Hose
6-10'	1" to 1-1/2"	5-6' upright	2	14 gauge wire	1/2"
10-12'	2" to 2-1/2"	7-8' upright	2	14 gauge wire	1/2"
12-14'	2-1/2" to 3"	2" guy	3	12 gauge wire	1/2"
14-16'	3-4"	2" guy	3	12 gauge wire	3/4"

**CITY OF GAITHERSBURG  
TREE MANUAL  
APPENDIX A  
GLOSSARY OF TERMS**

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## GLOSSARY OF TERMS

**NOTE:**

*Where definitions for the same term are found in this manual and the State Forest Conservation Technical Manual or any chapter of the City Code, the more stringent shall apply.*

**Afforestation.** The establishment of forest or tree cover in accordance with Chapter 22 on an area from which such forest or tree cover has always been absent or very long been absent.

**Agricultural Activity.** Farming activities including plowing, tillage, cropping, installation of best management practices, seeding, cultivating, and harvesting for production of food and fiber products (except commercial logging and timber harvesting operations), the grazing and raising of livestock, aquaculture, sod production, and the cultivation of orchard, nursery, and other products as part of a recognized commercial enterprise.

**Annexation Petition.** A petition from a property owner requesting the City annex the property into the City's jurisdiction and assign it a City zoning category.

**Applicant.** A person applying for subdivision or site plan approval, or for a grading or sediment control permit, or has received approval of Natural Resource Inventory or Forest Conservation Plan.

**Caliper.** A trunk diameter measurement of young trees. For diameters of 4" or less, measurement must be taken 6" above ground level. For larger than 4", measurement is taken 12" above ground.

**Champion Tree.** The largest tree of a species within the United States, State, County or City.

**Commercial and Industrial Uses.** Manufacturing operations, warehousing, office complexes, shopping centers, wholesale and retail facilities for goods, products and services and other similar uses and their associated storage areas, yards, and parking areas.

**Concept Plan.** The first site development plan submitted for Planning Commission review, as a part of the overall site development review process. The plan that provides a conceptual design and meets the minimum informational requirements of the Planning and Code Administration's checklist.

**Critical Habitat Area.** A critical habitat for an endangered species and its surrounding protection area. A critical habitat area shall:

1. Be likely to contribute to the long-term survival of the species.
2. Be likely to be occupied by a species considered critical under Natural Resources Article, Sec. 4-2A-04 and 10-2A-06, Annotated Code of Maryland.

**Critical Root Zone (CRZ).** A circular area drawn for a particular tree surveyed which represents the estimated root system for that tree. CRZ's vary depending upon tree species, tree size, soils and moisture level. Investigative digging can be done where it is of the utmost importance to establish more exact limits of the roots for an individual tree. For purposes related to this manual, the formula for determining CRZ is as follows:  $R = 1.5' \times DBH$ , where R represents the radius of the CRZ and DBH represents the Diameter at Breast Height.

**Declaration of Intent.** A signed and notarized statement by a landowner that the cutting of trees on the landowner's property:

1. Is for purposes exempted under this Chapter.
2. Will not circumvent the requirements of this Chapter.
3. Meets the requirements of COMAR 08.19.01.05.

**Development Project Completion.** For the purposes of compliance with this chapter, the date or event identified as such in the Forest Conservation Plan agreement, but no later than the date on which the final building inspection or sediment control inspection (for activities not involving a building) is conducted by the Planning and Code Administration. A staged development may have more than one completion date.

**Diameter at Breast Height (DBH).** The diameter of a tree's trunk, measured 4.5 feet from the base of the tree. For trees having multiple trunks or stems, separating below 4.5 feet from the base of the tree, the DBH shall be the sum of each stems DBH.

**Disturbed Area.** Area of existing soil and vegetation as shown on a site plan or Forest Conservation Plan that would be disturbed by any type of construction activity.

**Floodplain (100-year).** An area along or adjacent to a stream or body of water, except tidal waters, that is capable of storing or conveying floodwaters during a 100-year frequency storm event or a 100-year flood, with the exception of floodplains containing a body of water with a watershed of less than 400 acres.

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**Forest.** A biological community dominated by trees and other woody plants (including plant communities, the understory, and forest floor), but excluding orchards or nursery stock, covering a land area of 10,000 square feet or greater. Forest includes:

1. Areas that have at least 100 live trees per acre with at least 50 percent of those trees having a 2-inch or greater diameter at 4.5 feet above the ground.
2. Forest areas that have been cut but not cleared.

**Forest Conservation.** The retention of existing forest or the creation of new forest at the levels set by the Planning Commission or the Director of Planning and Code Administration.

**Forest Conservation Fund.** A special fund maintained by the City to be used for purposes and in the manner specified by resolution of the City Council and referenced in Section 22-9(f) of the City Code.

**Forest Conservation Plan.** A plan approved pursuant to Sections 22-7 and 22-8 of the City Code.

**Forest Conservation Threshold.** The percentage of the net tract area at which the reforestation requirement changes from a ratio of 1/4 acre planted for every one acre removed to a ratio of 2 acres planted for every one acre removed.

**Forest Cover.** The area of a site meeting the definition of forest.

**Forest Stand Delineation.** The evaluation of a site's existing forest and other vegetation in relation to the natural resources on a site proposed for development or subject to land disturbing activities, as provided in this manual or the *State Forest Conservation Manual*.

**Growing Season.** The period of consecutive frost free days as stated in the current Soil Survey for Montgomery County published by the National Cooperative Soil Survey Program, 16USC Sec. 596(a)-(f).

**High-Density Residential.** For the purposes of this chapter, an area zoned for densities greater than one dwelling unit per 40,000 square feet, including both existing and planned development and their associated infrastructure, such as roads, utilities, water and sewer service.

**Institutional Development.** Land occupied by uses such as schools, colleges and universities, places of worship or religious institutions, military installations, transportation facilities, utility and sewer projects, government offices and facilities, golf courses, recreation areas, parks, and cemeteries.

**Land Disturbing Activities.** To cause disturbance of the earth, including, but not limited to, any excavating, filling, stockpiling of earth materials, grubbing, root mat or topsoil disturbance, or any combination of the above.

**Landscaping Plan.** A plan providing for reforestation or afforestation of an area or a plan approved by the City Planning Commission meeting the requirements of this manual pursuant to Section 24-235 of the City Code.

**Limit of Disturbance.** A line as shown on the site plan and Forest Conservation Plan that identifies the limit of construction activity of any kind.

**Lot.** A unit of land, the boundaries, of which have been established as a result of a deed or previous subdivision of a larger parcel, and which will not be the subject of further subdivision, as defined under Section 5-1601 of the Natural Resources Article of *The Annotated Code of Maryland*, without an approved forest stand delineation and forest conservation plan.

**Mixed-Use Development.** A single, relatively high-density development project, which includes two or more types of uses.

**Net Tract Area.** The total area of a tract, including both forested and unforested areas, to the nearest 1/10 acre; except that in agriculture and resource areas, net tract area is the portion of the total tract for which land use will be changed or will no longer be used for primarily agricultural activities.

**Nontidal Wetland.** An area regulated as a nontidal wetland under Natural Resources Article, Sec. 8-1201–1211, *Annotated Code of Maryland*, and COMAR 08.05.04.

**Obligee.** A person obligated under a financial security instrument to meet certain regulatory requirements.

**Off-Site.** Outside the limits of the area encompassed by the tract.

**On-Site.** Within the limits of the area encompassed by the tract, including an area classified as a 100-year floodplain.

**Optional Method Map Amendment.** An amendment to the city zoning map using the method defined in Section 24-198 of Chapter 24 of the City Code.

**Person.** The federal government, the state, any county, municipal corporation, or other political subdivision of the state, or any of their units, including the City Department of Public Works, or an individual, receiver, trustee, guardian, executor, administrator, fiduciary, or representative of any kind, or any partnership, firm, common ownership community or other homeowners' association, public or private corporation or any of their affiliates or subsidiaries, or any other entity.

**Planning Commission.** The Planning Commission of the City of Gaithersburg.

**Preliminary Site Plan.** The second site development plan submitted for Planning Commission review, as part of the overall site development review process. The plan is prepared by a civil engineer and meets the minimum informational requirements of the Planning and Code Administration's checklist.

**Preliminary Subdivision Plan.** A plan for a proposed subdivision or resubdivision prepared and submitted for approval by the Planning Commission pursuant to Chapter 20 of the City Code prior to preparation of a final subdivision plat.

**Public Utility.** Includes the following:

1. The transmission lines and the electric generating stations licensed under Article 78, Section 54A and 54B or 54-I of the Maryland Code.
2. Water, sewer, electric, gas, telephone, and cable facilities and lines.

**Reforestation or Reforested.** The creation of a biological community dominated by trees and other woody plants (including plant communities, the understory, and forest floor) containing at least 100 live trees per acre with at least 50 percent of those trees having the potential of attaining a 2 inch or greater diameter measured at 4.5 feet above the ground, within 7 years. Reforestation includes the landscaping of areas under an approved landscaping plan that establishes a forest at least 35 feet wide and covering at least 2,500 square feet of land area.

**Retention.** The deliberate holding and protecting of existing trees and other plants on the site per the methods outlined in the technical manual.

**Schematic Development Plan.** For sites zoned MXD, the plan defined in Chapter 24, Section 160 D.9(b) of the City Code. For optional method map amendments, the plan defined in Chapter 24, Section 198(a) of the City Code.

**Sediment Control Permit.** A permit required to be obtained for certain land disturbing activities:

1. Pursuant to Chapter 8 of the City Code; and
2. From the Washington Suburban Sanitary Commission for major utility construction as defined under regulations of the Commission.

**Selective Clearing.** As defined in this manual or the *State Forest Conservation Technical Manual*.

**Site Plan.** A plan or an amendment to a plan approved under Article V, Chapter 24 of the City Code.

**Sketch Plan.** For sites zoned MXD, the plan defined in Chapter 24, Section 160 D.9(a) of the City Code.

**Special Exception.** A use, identified as a special exception in any zoning district, and required to be approved under Article VII, Chapter 24 of the City Code.

**Specimen Tree.** Trees that are part of a historic site; or have been designated as a champion tree by the State, County or City; or have a diameter of 24 inches at 4.5 feet above the ground; or have exceptional canopy shape and beauty; or are rare, threatened, endangered species; or are individually identified on an approved forest conservation plan; or 75 percent or more of the DBH of the current State Champion of that species.

**Steep Slopes.** A slope in which the percent slope equals or exceeds 25 percent.

**Streams.** (As defined in the *City of Gaithersburg Environmental Standards*.) Generally, intermittent streams are those in which surface water is absent during part of the year. Perennial streams are those containing surface water through the rainfall year. All streams are those shown on the most recent 7.5 minute topographic quadrangle published by the U.S. Geologic Survey, as confirmed by field verification, and as defined in the City's Environmental Guidelines.

**Stream Buffer.** (As defined in the *City of Gaithersburg Environmental Standards*.) An undisturbed strip of natural vegetation contiguous with and parallel to the bank of a perennial or intermittent stream, which may be designated to:

1. Protect hydraulically adjacent slope areas.
2. Maintain or improve the water temperature regimen/water quality of the stream(s).
3. Protect natural wetlands.
4. Provide groundwater storage/recharge for a stream.
5. Complement regulations pertaining to the 100-year floodplain.
6. Provide wildlife habitat, open space, or both.
7. Complement on-site erosion/sediment control measures by serving as a backup natural filler/trap.

**Tree Manual.** A detailed guidance document used for administration of Forest Conservation and Landscaping requirements that is adopted by the Mayor and Council pursuant to Section 22-13 and 24-235 of the City Code.

**Tract.** The property subject to subdivision, a development application or a sediment control permit.

**Tree.** A large, woody plant having one or several self-supporting stems or trunks and numerous branches that reach a height of at least 20 feet at maturity.

**Tree Cover.** The combined area, in square feet, of the canopy of all trees on a tract. For afforestation purposes, tree cover is the typical canopy area for a specific type of tree at maturity as listed in the appendix of this manual.

**Tree Maturity.** The level of growth a tree achieves which, for the purposes of this manual, is as listed in Appendix C.

**Watershed.** All lands lying within an area described as sub-basin in water quality regulations adopted by the State Department of Environment under COMAR 26.08.02.08.

**CITY OF GAITHERSBURG  
TREE MANUAL  
APPENDIX B**

**SUPPORTING DOCUMENTS:**

**Tree List**  
**Critical Root Zone for Trees**  
**Mapping the Critical Root Zone**  
**Root Aeration Mat for Tree Preservation**  
**Woodlands Restoration**  
**Restoration of Urban Woodlands**  
**Tree Preservation for Trees of Significance**  
**Forest Conservation Maintenance and Management Agreement**  
**Conservation Easement Agreement**

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## TREE LIST

Two groups of trees are listed on the following pages. They are grouped according to whether or not they are species native to the Washington, D.C., area. Neither list is complete; thus, any tree not listed can be used so long as it is an acceptable choice given the proposed environment. Trees taken from the native species list should be used when planting in or adjacent to an existing woodland. Trees from the second list, which are alien to this region, should never be used near an existing woodland. In addition, the type of street tree must be chosen according to the given planting strip width. Major street trees must only be planted within planting strips of at least 8' in width. Minor street trees must be planted within planting strips of at least 6' in width. The following key applies to both lists of trees:

### MOISTURE REQUIREMENTS

MW	Moist to Wet
DM	Dry to Moist
M	Moist
D	Dry
DW	Dry to Wet

### WITHSTANDS DRY OR POOR SOILS

Y	Yes
N	No

### ROOT SYSTEM

S	Shallow
D	Deep Penetrating as Tap Root
I	Intermediate, Wide Spreading Lateral Roots

### SALT TOLERANCE

T	Tolerant
I	Intermediate
S	Sensitive

### AIR POLLUTION

T	Tolerant
S	Sensitive

### STREET TREES

MJ	Major
MN	Minor

### NATIVE TREES OF THE WASHINGTON D.C. AREA

Botanical Name	Common Name	Canopy Size	Moisture	Soils	Roots System	Salt Tolerance	Air Pollution	Street Tree Size
<i>Acer rubrum</i>	Red Maple	1000	WM	-	S	S	-	MJ
<i>Acer saccharinum</i>	Silver Maple	1000	MW	-	S	S	-	-
<i>Acer saccharum</i>	Sugar Maple	1000	M	-	S	I	T	MJ
<i>Amelanchier canadensis</i>	Serviceberry	300	M	-	S	T	S	-
<i>Betula nigra</i>	River Birch	300	M	-	S	-	S	-
<i>Carpinus caroliniana</i>	American Hornbeam	1000	DM	-	S	S	-	MJ
<i>Carya species</i>	Hickory Species	1000	DM	-	D	I	S	-
<i>Celtis occidentalis</i>	Hackberry	1000	DW	Y	D	S	T	-
<i>Cercis canadensis</i>	Redbud	300	M	-	S	I	S	MN
<i>Cornus florida</i>	Flowering Dogwood	300	M	-	S	T	T	MN
<i>Fagus grandifolia</i>	American Beech	1000	DM	-	S	S	S	-
<i>Fraxinus americana</i>	White Ash	700	MW	-	I	I	S	-
<i>Ilex opaca</i>	American Holly	300	M	-	I	I	T	-
<i>Juglans nigra</i>	Black Walnut	700	M	-	D	S	-	-
<i>Juniperus virginiana</i>	Eastern Red Cedar	300	DM	Y	D	I	T	-
<i>Liquidambar styraciflua</i>	Sweet Gum	700	MW	-	-	S	S	-
<i>Liriodendron tulipifera</i>	Tulip Poplar	700	M	-	S	T	-	-
<i>Magnolia grandiflora</i>	Southern Magnolia	300	DM	-	I	T	-	-
<i>Nyssa sylvatica</i>	Black Gum	700	DW	-	S	I	T	-
<i>Ostrya virginiana</i>	Ironwood	700	DM	-	D	I	S	MN
<i>Pinus strobus</i>	White Pine	700	M	Y	S	S	S	-
<i>Pinus virginiana</i>	Virginia Pine	700	DW	Y	I	I	S	-
<i>Platanus occidentalis</i>	Sycamore	1000	MW	-	I	I	-	-
<i>Populus deltoides</i>	Eastern Cottonwood	1000	MW	-	I	T	-	-
<i>Quercus alba</i>	White Oak	1000	DM	-	D	T	S	MJ
<i>Quercus coccinea</i>	Scarlet Oak	1000	DM	-	D	T	S	-
<i>Quercus falcata</i>	Southern Red Oak	1000	DM	Y	D	-	T	-
<i>Quercus palustris</i>	Pin Oak	700	DM	Y	D	T	-	-
<i>Quercus phellos</i>	Willow Oak	700	DW	-	I	T	-	MJ
<i>Quercus prinus</i>	Chestnut Oak	1000	DW	-	I	T	-	-
<i>Quercus rubra (borealis)</i>	Red Oak	700	DM	-	I	T	T	MJ
<i>Quercus stellata</i>	Post Oak	700	DM	Y	I	-	-	-
<i>Quercus velutina</i>	Black Oak	1000	DM	-	D	T	T	-
<i>Sassafras albidum</i>	Sassafras	700	DM	Y	D	-	-	-
<i>Tsuga canadensis</i>	Canadian Hemlock	700	M	-	S	S	-	-
<i>Ulmus americana</i>	American Elm	1000	M	-	I	S	-	-
<i>Ulmus fulva</i>	Slippery Elm	700	W	-	I	-	-	-

## OTHER TREES FOR USE IN THE WASHINGTON D.C. AREA

Botanical Name	Common Name	Canopy Size	Moisture	Soils	Roots System	Salt Tolerance	Air Pollution	Street Tree Size
<i>Abies concolor</i>	White Fir	700	M	Y	I	-	-	-
<i>Acer campestre</i>	Hedge Maple	700	-	-	-	-	-	-
<i>Acer ginnala</i>	Amur Maple	700	-	Y	S	T	-	MN
<i>Acer platanoides</i>	Norway Maple	1000	M	-	S	T	-	MJ
<i>Acer pseudoplatanus</i>	Sycamore Maple	1000	DM	-	I	T	T	-
<i>Betula pendula</i>	European White Birch	300	MW	Y	S	I	-	-
<i>Betula populifolia</i>	Gray Birch	300	D	Y	I	I	S	-
<i>Carpinus betulus</i>	European Hornbeam	1000	-	-	-	-	-	MJ
<i>Cladrastis lutea</i>	Yellowwood	700	-	-	-	-	-	MJ
<i>Cornus florida</i> var. <i>rubra</i>	Red Flowering Dogwood	300	-	-	-	-	-	MN
<i>Cornus kousa</i>	Kousa Dogwood/Milky	300	M	-	S	T	T	MN
<i>Crataegus mollis</i>	Downey Hawthorne	300	DM	-	D	I	T	MN
<i>Crataegus phaenopyrum</i>	Washington Hawthorne	300	DM	-	D	I	T	MN
<i>Elaeagnus angustifolia</i>	Russian Olive	300	-	Y	-	T	T	-
<i>Fagus sylvatica</i>	European Beech	1000	DM	-	S	S	S	MJ
<i>Fraxinus pennsylvanica</i> 'Marshall Seedles'	Marshall Seedless Ash	700	MW	Y	I	I	S	MJ
<i>Ginkgo biloba</i>	Maidenhair (male)	700	DM	Y	I	T	S	MJ
<i>Gleditsia triacanthos inermis</i>	Thornless Honeylocust	700	DM	Y	I	T	S	MJ
<i>Koelreuteria paniculata</i>	Goldenrain Tree	300	DM	Y	I	T	-	MN
<i>Larix laricina</i>	Larch	300	MW	-	S	T	S	-
<i>Magnolia soulangeana</i>	Saucer Magnolia	300	M	-	I	-	-	-
<i>Magnolia stellata</i>	Star Magnolia	300	M	-	S	-	-	-
<i>Malus species</i>	Crabapple	300	M	-	S	I	T	-
<i>Oxydendrum arboreum</i>	Sourwood	300	M	-	-	-	T	-
<i>Paulownia tomentosa</i>	Royal Paulownia	300	DM	-	S	-	S	-
<i>Phellodendron amurense</i>	Amur Cork Tree	300	DM	Y	S	-	-	-
<i>Picea abies</i>	Norway Spruce	700	M	Y	S	S	T	-
<i>Picea glauca</i>	White Spruce	700	M	-	S	T	-	-
<i>Picea pungens glauca</i>	Colorado Blue Spruce	700	M	-	D	T	-	-
<i>Pinus nigra</i>	Austrian Pine	700	M	Y	D	T	-	-
<i>Pinus resinosa</i>	Red Pine	700	D	-	D	S	-	-
<i>Pinus sylvestris</i>	Scotch Pine	700	D	Y	S	I	S	-
<i>Pinus thunbergiana</i>	Japanese Pine	700	M	Y	-	T	-	-
<i>Platanus acerifolia</i>	London Planetree	700	M	-	I	I	T	MJ
<i>Populus grandidentata</i>	Bigtooth Aspen	700	DM	-	I	T	-	-
<i>Prunus serrulata</i> 'Kwanzan'	Kwanzan Cherry	300	M	-	S	-	-	MN
<i>Prunus yodoensis</i>	Yoshino Cherry-white	700	M	-	S	-	T	MN
<i>Pseudotsuga menziesii</i>	Douglas Fir	300	M	-	D	S	-	-
<i>Pyrus calleryana</i>	Callery Pear	300	M	Y	I	I	-	MN
<i>Salix babylonica</i>	Weeping Willow	1000	M	-	S	T	-	-
<i>Sophora japonica</i>	Japanese Pagoda Tree	700	DM	Y	D	-	-	MN
<i>Thuja occidentalis</i>	Arborvitae	300	MW	-	I	T	T	-
<i>Tilia cordata</i>	Littleleaf Linden	700	M	Y	I	S	T	MJ
<i>Tilia tomentosa</i>	Silver Linden	700	M	-	I	S	T	MJ
<i>Zelkova serrata</i>	Japanese Zelkova	700	M	-	S	T	-	MJ

## **CRITICAL ROOT ZONE FOR TREES**

Source: The CARE of TREES

Roots are a component vital to the life support of any tree. Besides providing structural support for the tree they act as the major mechanism for nutrient and water uptake. Most roots are in the surface layers of soil for ease of gas transfer. This topsoil layer also provides the most nutrients, organic substances, moisture and macro and microorganisms beneficial to good root growth.

Field investigation and research in the last two decades have destroyed the myth that the root system extends only to the drip line of a tree's canopy. Another commonly held myth is that all mature trees have a tap root that is the most vulnerable portion of the root system; this not true.

A tree's root system varies in width and depth (and structural characteristics) with the species of the tree as well as soils and moisture levels. Existing structures such as curbs, utilities, road beds and old retaining walls also obstruct or redirect root growth.

### **Critical Root Zone Determination**

In order to successfully engineer and build in close proximity to significant or specimen trees, it is important to have an accurate description of a tree's underground structure. Relying on formulas or guesswork alone will not suffice when engineering a parking lot to the nearest inch in elevation or the fraction of a foot horizontally for a sanitary line.

Investigative digging is a common sense approach employed by experienced urban forestry professionals. Sample trees within representative soils and moisture levels are traced to determined representative root width, depths and responses to particular site conditions.

Because nature is variable, textbook answers will never be sufficient. Site investigation, combined with field experience, has always been necessary for the natural resource professional to design with nature.

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## MAPPING THE CRITICAL ROOT ZONE

Source: The CARE of TREES

Once planning and design has developed schematic or preliminary site plans but prior to final engineering design, a more exact representation will be needed of the critical root zone as a base map. This representation is the critical root zone map, which is used as an overlay or underlay tool.

A critical root zone is not the same as a tree survey. A tree survey or inventory locates the trees deemed worthy of consideration by the urban forester, and is performed by a surveying crew or GPS unit. This includes horizontal and vertical angles for the trees. The tree survey is a valuable tool for tree preservation only after critical root zones are added and the health and condition of each tree is evaluated.

In summary this process involves four steps:

1. Determine trees worthy of consideration in final design and engineering.
2. Survey the exact location  $\pm 1$  foot with both horizontal and vertical angles.
3. Plot tree survey with tree number, species, conditions rating and root radius.
4. Develop critical root zone map to be used as an overlay for all design/engineering and landscaping architecture components that affect the ground.

The purpose of the critical root zone map is threefold:

1. to modify and improve the design for less impact to trees.
2. to develop construction procedures for work impacting trees and their critical root zone , and
3. to prescribe specific tree protection methods and treatment of impacted trees.

## **ROOT AERATION MAT FOR TREE PRESERVATION**

Source: The CARE of TREES

The purpose of the root aeration mat is to provide necessary air/gas exchange between the atmosphere and the critical root zone that will be covered by a proposed fill situation. Root aeration mats have been employed successfully for many years in a wide variety of construction scenarios, including retaining walls, parking lots, state highways, and toe of slope conditions. Each site and application varies. Specialists familiar with tree root structure and functioning in construction are necessary to review the design situations, approve specifications and supervise installation. The following are standards that apply to a wide variety of situations:

1. Determine health and condition of trees in consideration.
2. Based upon accurate tree survey location including grade(s) at base of tree, determine the appropriate critical root zone for tree(s). Investigative digging may be needed since roots vary in width and depth with species, soil type, moisture level, and urban infrastructure involved.
3. Review grading and utility plans to determine zones of cut and fill. Minimize cut and fill areas with the critical root zone where possible. Some utilities proposed may fit into fill outside the curb and not impact the root system.
4. Determine square footage of root aeration mat needed. Round arcs can be squared off to lessen angle cuts.
5. Determine the need for retaining wall for fill near tree trunk. No soil should ever contact that part of the tree normally above ground.
6. If a retaining wall or tree well is needed, the footer cannot cut into grade more than 3-6" based upon depth of lateral roots from investigative digging. Various walls that have worked in the past are: dry laid stone (no mortar), "Keystone" type wall system, or timber wall with geogrid tiebacks. If footer beyond the frost line is required, a pier and beam approach has been used (very expensive).
7. Whether or not a retaining wall or toe of slope is used it is necessary to design the venting system to allow the air/gas exchange between the soil surface and the aeration mat. This is typically a combination of highway grade flexible drain pipe and PVC at a size that fits the application.
8. Thickness of aeration matting is typically 1/2 inch. For installation under structural fill the review of a geotechnical engineer is needed. Typically 24" is minimum needed between existing grade and proposed finished grade of pavement.
9. Develop the appropriate sequence of events to facilitate construction but not compromise protection of the tree root system.

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10. Design other related tree protection items such as root pruning and silt/tree protection fence.
  11. Prescribe proper arboriculture specifications appropriate for the tree including mulching, fertilization, selective removal of sapling, brush, and vine removal within the critical root zone to be protected, crown pruning, cabling/lightning protection, and IPM needs.
  12. Installation should be always by ISA Certified Arborist with experience in this type of work. Budget number for the root aeration mat is approximately \$2.00/square foot installed.

Reference Standards:

*Standard Practices for Trees, Shrubs, and Other Woody Plants Maintenance*, ANSI A300, December 1994.

National Arborist Association, *Standards for Guying, Fertilization, Lightning Protection, and Hydraulic Sprayer Calibration*, 1988.

ANSI Z133.1-1994, *Tree Care Operations - Safety Requirements*

Refer to "Installation Guidelines for Root Aeration Mat" by the Care of Trees.

## WOODLANDS RESTORATION

### MID ATLANTIC REGION

Source: The CARE of TREES

The Care of Trees has developed specialty restoration services focusing on urban trees and woodlands. These woodlands are typically impacted by property development and/or exotic invasive vegetation that have degraded the quality of the native trees and woodlands.

Restoration services for a site varies as the size of the property and the owner's needs and wishes vary. The following presents a typical scope of services.

1. Ground plane improvement; Ground clean up of woody debris, including windthrows and ground wood. Cut base of vines from trunk up to 12 feet height.
2. Selective removal; Flag all trees recommended for removal by registered forester including dead, dying, diseased, uprooted, and leaning trees. Also thinning of a woodland to improve diversity or reduce competition in very dense situations. Review with land manager or approving agency for final approval and adjusting. All trees shall be removed by Certified Arborist. Removals shall be performed in such a manner to avoid damage to tree canopy, root systems and landscape to be retained. All wood and brush shall either be removed or converted to wood chips and used on site.
3. Exotic invasive control; Mow smaller exotics (multi flora rose & briars) or hand cut saplings and larger vines and treat with a selected herbicide by certified pest control applicator. Seppi mower is available for large parcels or walk behind bush hog for close in work. Repeat stump treatment usually needed in growing season for saw cut stumps.
4. Granular broadcast fertilization; A cost effective means of increasing the nutrient base for these areas of trees and remnant forest. Trees in dense competition for sunlight and space will benefit from fall fertilization.
5. Specimen of Heritage tree care; Prescribed pruning for hazard reduction, or overall tree health; mulching to improve rooting capacity and soil conditions; sub surface liquid fertilization can include mycorrhizal inoculents or biostimulants for degraded soils; lightning protection systems for suspect trees; evaluation of decay/disease by certified arborist.
6. Multi year maintenance; IPM inspections and diagnosis with PHC treatment to fit seasonal pest cycles; granular broadcast fertilization with biostimulants, hazard inspections and pruning in public access areas; mulching wood edge or specimen trees; spot treatment for residual exotic control.
7. Aesthetic or vista thinning; Improve marketability or scenic vista with selective thinning or spot pruning. Applying some of the above listed services can significantly enhance properties with wood edges.
8. Wildlife Enhancement/Arboretum; Identification of habitat trees, basking logs; creating nesting and burrows with brush piles and hollow logs. Interpretive signage, trail layout, selective clearing, identification of arboretum trees.

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# RESTORATION OF URBAN WOODLANDS

## MID ATLANTIC REGION

Source: The CARE of TREES

Stresses to our urban woodlands are widespread in the Mid Atlantic region. Degraded woodland properties may include national parks, county parklands, scenic easements, riparian forest, stream valleys, reservoir watersheds, highway rights of way, utility corridors, corporate open space, HOA open space, and development buffers.

The following stresses account for the majority of degrading in urban trees and woodlands:

1. Exotic invasive vegetation
2. Soil/root impact from construction and development related activities
3. Nonmanaged environmental conditions

Exotic invasive vegetation is epidemic wherever landscape maintenance activities, utility corridors, stormwater management facilities, or service roads intersect or abut urban woodlands. Over decades these exotics will change entire ecosystems with impacts to native wildlife, soil erosion, heritage landscapes, increased maintenance, and liability issues.

Soil/root impact from construction and development related activities is most harmful on mature and feature woodlands and trees. Increased mechanization of construction in the later half of this century together with tighter development regulations disturb more of the original grade and topsoil than in previous times. Large trees commonly experience 50-75% root loss from these situations. Three to five years may be needed to show serious decline and mortality. Thus cause and effect is not readily apparent to individuals unfamiliar with tree physiology developing over a century of a tree's life span.

Nonmanaged environmental conditions of importance on the East Coast include weather extremes such as high winds, summer drought, insect and disease infestations, and surprisingly, high rainfall. Related impacts to urban woodlands and trees include storm breakage and wind throws, dieback and decline, insect and disease stresses. These are all exacerbated by high moisture levels leading to dense growth of stressed woodlands. These are all excellent conditions for insect and disease.

## TREE PRESERVATION FOR TREES OF SIGNIFICANCE

Source: The CARE of TREES

The following is a generic scope for tree preservation for trees of significance to be impacted by construction. Scope of service is based upon final plans and field review with critical root zone.

ITEM	SERVICE	SCOPE
1	Crown pruning for tree health, safety. Focus on significant tree impacted by proposed construction.	A. 30" and above B. 20" to 29" C. 15" to 19" D. up to 14" as determined
2	Cabling and bracing to help support weak limb structure in significant trees	Individual tree needs to be determined after final plan development.
3	Tree protection signs. Reuse for next phase.	A. 12 x 18" alum. attached to TP fence. B. Tree preservation project sign. C. Concrete washout sign.
4	Tree protection fence Remove fence at completion	A. 6' chain link - 11 1/2 gauge adj. to building construction. B. 48" welded wire/T-post for infrastructure and grading, Hi-vis flagging.
5	Silt fence with tree protection fence. Addition to S&E requirement	To cover 50% of TP fence. Located adjacent to excavation and grading to protect trees.
6	Root prune prior to fencing	Exact location per forester's layout Equipment and methods to be determined based upon depth and tree impact. Hand prune where necessary. Clear access as required.
7	Wood chip mulch	Significant tree impacted by proposed construction. From chips generated on site or brought in.

ITEM	SERVICE	SCOPE
8	<p>Integrated pest management Focus on trees of significance in tree preservation areas and 25" buffer edge.</p> <p>A. Treatment for vines and exotic invasive species. B. Scale, borers, and miscellaneous pests C. Supplemental water.</p>	<p>A. 6 treatments for 24 months</p> <p>B. 12 treatments/inspections for 24 months</p> <p>C. 12 estimated waterings of significant trees during drought periods, as needed, during 24 months.</p>
9	Fertilization/humic acids/ mycorrhizal inoculant/ adjuvant.	For trees of significance impacted by proposed construction. Dec-Feb of 1998-99 and fall 1999.
10	Selective tree removal; standing dead or declining trees only within target areas. Felling or sectional removal as needed. Grind stumps as needed at edge of turf areas.	Tree preservation areas and edge of forest buffer. Leave logs/debris on site for demo contractor..
11	Ground plane improvement (with forest buffer or reforestation area)	Downed wood debris, cut vines at base of trees, mow briars and invasive shrubs with walk-behind bush hog mower. Flag native saplings for retention in reforestation.
12	Remedial activities as necessary from construction: A. Vertical mulching B. Crown pruning  C. Root aeration mat D. Root protective mat	<p>A. Including &lt;2" silt with critical root zone by hand or pneumatic air spade tool.</p> <p>B. Time and materials with not to exceed approved</p> <p>C. To be determined based on final plan review</p> <p>D. To be determined based upon construction strategy review.</p>
13	Arborcultural layout and coordination by project forester/ certified arborist	Tag significant trees for inventory; mark trees for selective removal and other treatments. Review with landscape architect.
14	Construction administration by project forester	Construction strategy, pre-construction meeting, periodic inspections, and technical assistance during construction. Final review and 3-5 year maintenance prescription.

## **FOREST CONSERVATION MAINTENANCE AND MANAGEMENT AGREEMENT**

This agreement, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_ by and between the \_\_\_\_\_, hereinafter called the "Landowner", and the City of Gaithersburg, hereinafter called the "City."

Whereas the landowner is the owner of certain real property, more particularly described as Exhibit "A", attached, and recorded by deed in the land records of Montgomery County, hereinafter called the "property", and whereas the landowner is proceeding to develop the property, and whereas the required Forest Conservation Plan, hereinafter called the "plan", as approved by the City, provides for the required afforestation or reforestation to comply with current forest conservation ordinances, whereas the City Planning Commission requires that the aff/reforestation be planted as shown on the plan, and be adequately maintained, managed and monitored for two years from the time of initial installation by the landowner to ensure forest establishment.

In consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The landowner shall plant the afforestation/reforestation in accordance with the specifications of the approved plan and shall submit to the City Planning and Code Administration certification to that effect, signed by a person qualified under Sec. 22.7(d) of the City Code.
2. The landowner shall maintain and manage the forest plantings in accordance with the plan. This will include: a) Watering, fertilizing and control of competing vegetation as necessary during the initial planting and through the two-year agreement period; and b) Provide protection measures such as fencing and interpretive signs as necessary to prevent destruction or degradation of the planting site.
3. The landowner shall monitor the afforestation/reforestation site for two years from the time of initial installation and provide annual monitoring reports prepared and signed by a person qualified under Sec. 22-7(d) of the City Code to the City Planning and Code Administration in accordance with the minimum requirements of the Maryland Forest Conservation Act and any applicable adopted and approved county or municipal forest conservation ordinances.
4. The landowner shall replace any dead plantings to a minimum standard of 90%, in order to ensure compliance with the survival requirements as stated in the City zoning ordinances (Section 24-172).

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5. The landowner shall post a Bond of Guarantee, in the amount equal to the awarded contract for the cost of plantings plus installation.
  6. If after the second growing season the survival requirements have been met, and agreements followed in good faith by the landowner, bond release can occur upon submittal of the final annual report.
  7. The landowner shall provide documentation of a legal, permanent, protection mechanism for the aff/reforestation area in the form of a conservation easement, deed restriction, covenant, or dedication.
  8. If the aff/reforestation is being planted off-site, the landowner shall provide evidence of a legal right to implement the aff/reforestation on the affected site.
  9. This agreement shall be binding on the landowner, its administration, executors, and other successors in interest.

Witness the following signature

\_\_\_\_\_  
Landowner

\_\_\_\_\_  
Date

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Date

\_\_\_\_\_  
City

\_\_\_\_\_  
Date

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Date

## CONSERVATION EASEMENT AGREEMENT

Parcel I.D. No.: \_\_\_\_\_

THIS CONSERVATION EASEMENT AGREEMENT AND COVENANT ("Conservation Agreement") is made this \_\_\_\_\_ day of \_\_\_\_\_, 1995, by and between the \_\_\_\_\_, a \_\_\_\_\_ corporation (hereinafter referred to as "Owner"), and the CITY OF GAITHERSBURG, MARYLAND (hereinafter referred to as the "City").

### RECITALS:

**A.** Owner is the owner of certain property located within the municipal boundaries of the City of Gaithersburg, Montgomery County, Maryland, and more particularly described in Exhibit "A" attached hereto and incorporated by reference into this Conservation Agreement (the "Subject Property"). The Subject Property has an approved subdivision plan, an approved site plan, and an approved forest conservation plan for a project known as "\_\_\_\_\_" described in Final Site Plan Review Application S-\_\_\_\_\_, (the "Approved Plans"). These Approved Plans were approved by the City of Gaithersburg Planning Commission ("Planning Commission") in accordance with City laws.

**B.** The Planning Commission, pursuant to Chapter 22 of the City Code, "Trees and Forest Conservation," required a minimum of 15.2 acres (the "Break-even Point") to be retained in forest and 18.8 acres of forest conservation area is provided as shown on the Approved Plans. The 8.2 acres of forest shown in the Approved Plans to be retained on the Subject Property is applicable to the minimum requirement of 15.2 acres. The required remainder of forest cover is provided for under a separate agreement.

**C.** The Planning Commission approved the Approved Plans conditioned upon a requirement that the Subject Property be encumbered by a forest conservation easement running in favor of the City.

**D.** The purpose of this Conservation Agreement, and the easement and covenant established pursuant to it, is to protect existing and future forest cover, individual trees, streams and adjacent buffer areas, and wetlands and other sensitive natural features, and to maintain existing natural conditions to protect plant habitats, water quality and wildlife. Furthermore, the purpose of this Con-

servation Agreement, and the easement and covenant established pursuant to it, includes the preservation of the natural beauty of the property subject to this easement and the prevention of any alteration or destruction that will tend to mar or detract from such natural beauty. The purpose also includes the protection and preservation of natural features on the Subject Property, consistent with the terms and conditions of the Approved Plans and applicable law.

E. The parties intend for the conditions and covenants contained within this Conservation Agreement to run with the land in perpetuity and to be binding on all subsequent owners and occupants of the Subject Property, including the City, should the City become an owner of any part of the Subject Property. The parties also intend that a servitude be placed upon the Subject Property to create a conservation benefit in favor of the City.

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which the parties acknowledge, the parties agree to the following:

1. The recitals set forth above are incorporated by reference into this Conservation Agreement.

2. Owner grants to the City, in perpetuity, a conservation easement on the Subject Property, the size and location of which is described in the metes and bounds description and sketch attached to and incorporated by reference into this Conservation Agreement as Exhibit "A". The conservation easement granted pursuant to this Conservation Agreement constitutes a covenant running with title to the Subject Property and is granted to preserve, protect and maintain the general topography and natural character of the Subject Property. Owner, its successors and assigns, will abide by the following restrictions on the Subject Property:

- a. No living trees or shrubs (of any size or type) shall be cut down, removed or destroyed without a permit from the City. Dead, diseased or hazardous trees or limbs may be removed to prevent personal injury or property damage only with a permit unless the issuance of a permit is not practical in an emergency situation. Pruning of tree limbs and shrubs shall be allowed upon issuance of a permit by the City Manager of Gaithersburg. Issuance of permits for allowed activities shall not be unreasonably withheld by the City.
- b. No plant materials (including, but not limited to brush, saplings, undergrowth, weeds and vines) shall be mowed or cut down, dug up, removed or destroyed unless removed pursuant to the terms and conditions of a forest management plan approved by the City. Noxious

weeds and exotic plants (limited to those weeds defined as “noxious” under Maryland State or City laws or regulations) may be removed as required by law. Vegetation removal shall be limited to noxious weeds and exotic plants only, and protective measures must be taken to protect nearby trees and shrubs.

- c. No mowing, agricultural activities, including vegetable gardens, or cultivation shall occur. Owner may replace dead trees or undergrowth provided that new plantings are characteristic of trees or undergrowth native to Maryland. The ground plane may be maintained with native shrubs and ground cover, native non-aggressive grasses, herbaceous material or hardwood mulch except that no mulch shall be placed on slopes with a grade greater than fifteen percent (15%).
- d. Nothing in this Conservation Agreement precludes activities necessary to implement the approved afforestation or reforestation element shown on the Approved Plans, including maintenance of afforestation/reforestation area and replacement of dead trees within such areas.
- e. The following activities may not occur at any time on the Subject Property:
  - 1. Construction, excavation or grading, except that such activities shall be permitted in order to abandon and remove any existing water and sewer lines in accordance with the Approved Plans. Any land so excavated, graded or constructed upon shall be restored to its natural pre-existing grade, condition and ground cover.
  - 2. Erection of any building or structural improvements on, below or above ground, including (but not limited to) sheds, dog pens, play equipment and retaining walls.
  - 3. Construction of any roadway or private drive.
  - 4. Activities which in any way could alter or interfere with the natural ground cover or drainage unless shown on the Approved Plans.
  - 5. Industrial or commercial activities and the storage of any hazardous contaminants.
  - 6. Timber cutting, unless conducted pursuant to an approved forest management plan by the City.
  - 7. Location of any component of a septic system.

8. Excavation, dredging, or removal of loam, gravel, soil, rock, sand and other materials.
  9. Diking, dredging, filling or removal of wetlands.
  10. Pasturing of livestock and storage of manure or any other soil.
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- f. Notwithstanding any provision in this Conservation Agreement to the contrary, any feature shown on an Approved Plan is allowed to exist on the Subject Property including, but not limited to, pathways, utilities, water, sanitary sewer and storm drain connections, and subdivision entrance feature, to include installation, maintenance, repair and replacement of the same. The location, description and extent of any subdivision entrance feature is to be approved by the City and attached hereto as Exhibit "B."
  - g. No dumping of unsightly or offensive man-made materials, including trash, construction materials and debris, and no dumping of ashes, sawdust or grass clippings shall occur.
  - h. Fences consistent with the purposes of this Conservation Agreement may be erected only after written approval from the City but shall not be located within thirty-five (35) feet of a common property line with the subdivision known as "\_\_\_\_\_." Subterranean cables or wires, commonly known as "invisible fences" are allowed, but not if they disturb the roots of any living trees or shrubs located within thirty-five (35) feet of a common property line with the subdivision known as "\_\_\_\_\_" nor shall there be any fence installed or maintained within the conservation easement or for any lot bordering on the Muddy Branch stream valley.
  - i. All rights reserved by or not prohibited to Owner shall be exercised so as to prevent or minimize damage to the forest and trees, streams and water quality, plant and wildlife habitats, and the natural topographic character of the Easement Area.
  - j. City representatives may enter upon the Subject Property for the purpose of making periodic inspections to ascertain whether Owner has complied with the restrictions and conditions established in this Conservation Agreement. The Conservation Agreement does not restrict or enlarge access to the public in common open space held under community or homeowner association control beyond the access rights created by the association's covenants and bylaws.

3. Owner shall make specific references to this Conservation Agreement in a separate paragraph of any subsequent deed, sales contract, mortgage or other legal instrument by which any interest in the Subject Property is conveyed (including a lease agreement).

4. The approval of the Approved Plans for the Subject Property anticipated and reflected the installation of pedestrian paths. No provision in this Conservation Agreement shall prohibit the installation or required maintenance associated with these planned facilities, nor shall this Conservation Agreement prohibit the installation of additional pathways as approved by the City.

5. Nothing in this Conservation Agreement shall prevent construction or maintenance of stormwater "safe conveyance" facilities and structures and/or other utilities, on, over, or under the Subject Property, if said structures, facilities, or utilities are shown on the Approved Plans and approved by the City and all other appropriate governing agencies.

6. Nothing in this Conservation Agreement shall prevent installation of sediment control measures, grading, ground stabilization and pathway installation as shown on the Approved Plans and as required by the City.

7. Nothing in this Conservation Agreement shall prevent the mowing of stormwater management embankments as required by the City nor shall they prevent the mowing of any grass strip along the pedestrian paths within the Easement Area.

8. Markers or monuments shall be installed and maintained in order to delineate the boundaries of the conservation easement created by this Conservation Agreement. Markers shall be installed as shown on Approved Plans.

9. No failure on the part of the City to enforce any covenant or provision of this Conservation Agreement shall waive the City's right to enforce any covenant within this Conservation Agreement.

10. It is the intention of Owner and City that the provisions of this Conservation Agreement shall be enforceable by the City, by an entity yet to be formed to be known as the \_\_\_\_\_, and by owners of real property within the subdivision to be known as "\_\_\_\_\_." Upon finding a violation of any of the restrictions, conditions, covenants and easements established by this Conservation Agreement, the parties authorized to enforce the provisions of this Conservation Agreement shall have the right to enforce such provisions in accordance with any statutory authority (including, if applicable, the imposition of civil monetary fines or penalties in amounts and by such means as may be promulgated from time to time) or by injunction or other appropriate

relief in any court of competent jurisdiction, including the right to recover damages in an amount sufficient to restore the property to its original natural state, court costs and reasonable attorney fees.

11. All written notices required by this Conservation Agreement shall be sent to the following:

If to \_\_\_\_\_:

to City:

12. This Conservation Agreement shall automatically expire and be of no further force and effect unless record plat or plats covering the Subject Property, and referring to this Conservation Agreement, are recorded among the Land Records of Montgomery County, Maryland within sixty (60) days from the date of recordation of this Conservation Agreement.

IN WITNESS WHEREOF, the parties have signed this Conservation Agreement on the day and year indicated above.

ATTEST/WITNESS:

A \_\_\_\_\_ Corporation

\_\_\_\_\_ By: \_\_\_\_\_

CITY OF GAITHERSBURG

\_\_\_\_\_ By: \_\_\_\_\_

STATE OF MARYLAND  
COUNTY OF MONTGOMERY

On this \_\_\_\_\_ day of \_\_\_\_\_, 199\_\_\_\_, before me, the undersigned officer personally appeared \_\_\_\_\_, who acknowledged him/herself to be \_\_\_\_\_ of \_\_\_\_\_, a \_\_\_\_\_ Corporation, and he/she, as such officer, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by him/herself as \_\_\_\_\_.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

STATE OF MARYLAND  
COUNTY OF MONTGOMERY

On this \_\_\_\_\_ day of \_\_\_\_\_, 199\_\_\_\_, before me, the undersigned officer personally appeared \_\_\_\_\_, \_\_\_\_\_ of the CITY OF GAITHERSBURG, a municipal corporation, known to me (or satisfactorily proven) to be the person described in the foregoing instrument, and acknowledged that he/she executed the same in the capacity therein stated and for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

\_\_\_\_\_  
Notary Public

Commission Expires: \_\_\_\_\_

**CITY OF GAITHERSBURG  
TREE MANUAL  
APPENDIX C**

**ORDINANCES:**

**Tree and Vegetation – Public Lands. City Code, Chapter 21**

**Trees and Forest Conservation. City Code, Chapter 22**

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## TREE AND VEGETATION— PUBLIC LANDS

### City Code, Chapter 21

**Editor's note**—Ord. No. O-24-87, adopted Oct. 19, 1987, repealed Ch. 21 in its entirety. Prior to such repeal, Ch. 21, §§ 21-1 to 21-20, pertained to swimming pools and was derived from Ord. No. O-4-63, §§ 2 to 21. At the discretion of the editor, §§ 9-1 to 9-11, as enacted by Ord. No. O-17-87, adopted Aug. 3, 1987, have been included as §§ 21-1 to 21-11 of Ch. 21, in order to maintain the alphabetical arrangement of chapter titles in the Code. It should also be noted that §§ 21-2 to 21-5 of this chapter are required by the *Annotated Code of Maryland*.

- § 21-1. Purpose.
- § 21-2. Definitions.
- § 21-3. Urban forestry plan.
- § 21-4. Attachment of signs to trees prohibited.
- § 21-5. Injury to trees, shrubs, plants in public right-of-way or upon any park or publicly owned property prohibited.
- § 21-6. Obstruction of air, water access to trees.
- § 21-7. Use of certain substances injurious to trees restricted.
- § 21-8. Protection of trees during construction.
- § 21-9. Private contractor and governmental entity permit requirements.
- § 21-10. Permit required for removal of trees on private property.
- § 21-11. Trees, branches obstructing right-of-way.
- § 21-12. Removal of trees declared public safety hazards.
- § 21-13. Violations; injunctive relief.

#### **Sec. 21-1. Purpose.**

The intent of this chapter is to protect and encourage the protection of trees, shrubs and other plants; to provide for public health, safety and general welfare; and to promote and preserve the city's natural beauty. (Ord. No. O-17-87, § 9-1, 8-3-87)

#### **Sec. 21-2. Definitions.**

*Park trees, shrubs and bushes:* Herein defined as trees, shrubs, bushes and all other woody vegetation in public parks having individual names, and all areas owned by the city, or to which the public has free access as a park.

*Private contractor:* Any person, firm or business entity engaged in the business of tree, shrub and landscape installation, maintenance and removal.

*Shrubs and bushes:* A several-stemmed, densely branched, woody plant.

*Street trees, shrubs and bushes:* Street trees are herein defined as trees, shrubs, bushes and all other woody vegetation on land lying within the public right-of-way of all streets, avenues or ways within the city.

*Topping:* Topping is defined as the severe cutting back of limbs to stubs larger than three (3) inches in diameter within the tree's crown to such a degree as to remove the normal canopy and disfigure the tree.

*Tree:* A woody plant with one main stem at least twelve (12) feet tall at maturity, and having a distinct head or crown in most cases. (Ord. No. O-16-91, 7-1-91; Ord. No. O-21-92, 12-7-92)

### **Sec. 21-3. Urban forestry plan.**

It shall be the responsibility of the city manager or his designee to study, investigate, counsel, develop and/or update periodically, and administer a written plan for the care, preservation, protection, pruning, planting, replanting, removal or disposition of trees and shrubs in parks, along streets and in other public and private areas. Such plan will be presented periodically to the city planning commission. Upon acceptance and approval of the plan by resolution of the city council, such plan shall constitute the official urban forestry plan for the city.

(1) *Recommendation from the city beautification committee:* The city beautification committee shall review a draft plan prepared by the city manager or his designee and shall provide the planning commission with a recommendation prior to the approval of the plan or any amendments or updates to the plan, by the city council.

(2) *Components of the plan:* The city manager or his designee, with the assistance of the city beautification committee, shall develop, and periodically update, the urban forestry plan. The plan shall outline urban forestry program activities for a minimum of the next five (5) years. Activities may include, but are not limited to, street tree inventory, planting, maintenance, preservation, tree removal, beautification projects and educational projects. (Ord. No. O-16-91, 7-1-91; Ord. No. O-21-92, 12-7-92)

### **Sec. 21-4. Attachment of signs to trees prohibited.**

It is unlawful for any person to attach any sign, advertisement, notice or any other manmade object, except for normal installation and maintenance devices or objects installed by the city, to any tree or shrub or in any flower bed in the public right-of-way, park or any other public property in the city. (Ord. No. O-17-87, § 9-3, 8-3-87; Ord. No. O-16-91, 7-1-91; Ord. No. O-21-92, 12-7-92)

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**Sec. 21-5. Injury to trees, shrubs, plants in public right-of-way or upon any park or publicly owned property prohibited.**

It is unlawful for any person to damage, cut, destroy, top, or injure any tree, shrub or plant planted in the public right-of-way or upon any park or public property. This provision shall not apply to any ordinary care and maintenance or removal by a governmental entity authorized to exercise jurisdiction over the right-of-way, park or other public property. (Ord. No. O-17-87, § 9-2, 8-3-87; Ord. No. O-16-91, 7-1-91; Ord. No. O-21-92, 12-7-92)

**Sec. 21-6. Obstruction of air, water access to trees.**

It is unlawful for any person to place or store cement, asphalt, soil or any other substance in the right-of-way or on any public place which impedes access of air and water to the roots of any tree or shrub planted in the right-of-way or any other public place. (Ord. No. O-17-87, § 9-4, 8-3-87; Ord. No. O-16-91, 7-1-91; Ord. No. O-21-92, 12-7-92)

**Sec. 21-7. Use of certain substances injurious to trees restricted.**

It is unlawful to place salt, brine, petroleum products, weed killers or any other substances in such an amount as to be injurious to tree or shrub growth in the right-of-way, public parks or other public property. (Ord. No. O-17-87, § 9-5, 8-3-87; Ord. No. O-16-91, 7-1-91; Ord. No. O-21-92, 12-7-92)

**Sec. 21-8. Protection of trees during construction.**

During the erection, altering or repairing of any building, structure, street, sidewalk, underground pipe or utility, the owner or contractor shall place guards, fences or barriers as close to the dripline as possible of all trees shown to be saved on an approved forest conservation plan or other city approved plans, and nearby trees in the right-of-way or on any public area as will effectively prevent injury to such trees. (Ord. No. O-17-87, § 9-9, 8-3-87; Ord. No. O-16-91, 7-1-91; Ord. No. O-21-92, 12-7-92)

**Sec. 21-9. Private contractor and governmental entity permit requirements.**

It shall be unlawful for any private contractor or governmental entity to plant, trim, spray, remove or perform any other treatment to any tree, shrub or plant in the public right-of-way without first obtaining a permit from the state department of natural resources. Application for said permit must be filed by the city manager or his designee on behalf of that person, except that:

- (1) If a tree is uprooted or its branches broken so as to contact telephone, telegraph, electric power or other wires carrying electric current, or if the tree or its branches endanger persons or property, the tree or its branches may be removed without first obtaining a permit from the department; and

- (2) Utility companies shall make application directly to the state department of natural resources; and
- (3) Ordinary maintenance, such as watering and mulching, may be performed without first obtaining a permit. (Ord. No. O-17-87, § 9-6, 8-3-87; Ord. No. O-16-91, 7-1-91; Ord. No. O-21-92, 12-7-92)

**Sec. 21-10. Permit required for removal of trees on private property.**

It is unlawful for any person to remove, relocate or top any tree on private property within the city without first having received a permit for the same from the city manager. The provisions of chapter 22, "trees and forest conservation," if applicable, must be complied with prior to the issuance of a permit pursuant to this chapter. The section shall not apply to:

- (1) The transplantation or maintenance of commercial nursery stock or in any case to trees with a caliper of two inches or less, as measured at four (4) inches above ground level; or
- (2) Trimming performed by utility companies to provide safety clearances from utility lines. (Ord. No. O-17-87, § 9-7, 8-3-87; Ord. No. O-16-91, 7-1-91; Ord. No. O-21-92, 12-7-92)

**Sec. 21-11. Trees, branches obstructing right-of-way.**

It is unlawful for any person owning property within the city to permit any tree, shrub or plant growing on their property to hang over or branch in such a way as to obstruct or obscure street lights, traffic signs, traffic signals or pedestrian or vehicular access on public rights-of-way, or obstruct the view of any street intersection. All such trees, shrubs or plants shall be kept trimmed by the property owner. (Ord. No. O-17-87, § 9-8, 8-3-87; Ord. No. O-16-91, 7-1-91; Ord. No. O-21-92, 12-7-92)

**Sec. 21-12. Removal of trees declared public safety hazards.**

The city manager has the authority to order the removal of trees or shrubs on private property which endanger the life, health, safety or property of the public. Removal shall be done by said owners at their own expense within sixty (60) days after the date of service of notice. In the event of failure of owners to comply with such provisions, the city shall have the authority to remove such trees and charge the costs of removal on the owner's property tax notice. (Ord. No. O-17-87, § 9-10, 8-3-87; Ord. No. O-16-91, 7-1-91; Ord. No. O-21-92, 12-7-92)

**Sec. 21-13. Violations; injunctive relief.**

Violations of this chapter are declared to be municipal infractions and enforceable pursuant to the provisions of section 1-9. The maximum penalty for each initial and repeat violation shall be established by resolution of the city council, but in no case shall the maximum permissible penalty exceed that penalty provided for in Article 23A of the *Annotated Code of Maryland*.

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In addition thereto, the city may initiate injunctive, mandamus or any other appropriate action or proceedings at law or equity for enforcement of this chapter, or to correct violations of this chapter, and any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions or mandamus or other appropriate form of remedy or relief. (Ord. No. O-17-87, § 9-11, 8-3-87; Ord. No. O-16-91, 7-1-91; Ord. No. O-21-92, 12-7-92)

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## TREES AND FOREST CONSERVATION

### City Code, Chapter 22

**Cross reference(s)**—Administration, Ch. 2; buildings, Ch. 5; trees and vegetation—public lands, Ch. 21; zoning, Ch. 24.

#### Article I. In General

- § 22-1. Purpose.
- § 22-2. Definitions.
- § 22-3. Applicability.
- § 22-4. Exemptions.
- § 22-5. Exemptions; special transition provisions.
- § 22-6. Utility lines.

#### Article II. Forest Stand Delineations and Forest Conservation Plans

- § 22-7. General.
- § 22-8. Application, review and approval procedures.
- § 22-9. Retention, afforestation and reforestation requirements.

#### Article III. Enforcement, Appeals, Variances and Annual Report and Biennial Review

- § 22-10. Inspections and notification.
- § 22-11. Penalties and other remedies.
- § 22-12. Variance provisions.
- § 22-13. Annual report and biennial review.

#### Article IV. Forest Conservation Technical Manual

- § 22-14. State and city technical manuals.

### ARTICLE I. IN GENERAL

#### Sec. 22-1. Purpose.

The purpose of this chapter is to preserve, protect and improve the health and general welfare of the public by promoting the environmental and public benefits of saving, maintaining and planting trees and forested areas. These benefits include: the preservation of important natural resources; the filtration of groundwater; reduction in surface run-off; alleviate floods; supply necessary wildlife habitat; cleanse the air; offset the urban heat island effects; provide recreational areas and aesthetic appeal. (Ord. No. O-17-92, 12-7-92)

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**Sec. 22-2. Definitions.**

In this chapter, the following terms have the meanings indicated:

*Afforestation.* The establishment of forest or tree cover in accordance with this chapter on an area from which such forest or tree cover has always been absent or very long been absent, or the planting of open areas which are not presently in forest cover.

*Agricultural activity.* Farming activities including plowing, tillage, cropping, installation of best management practices, seeding, cultivating, and harvesting for production of food and fiber products (except commercial logging and timber harvesting operations), the grazing and raising of livestock, aquaculture, sod production, and the cultivation of orchard, nursery, and other products as part of a recognized commercial enterprise.

*Annexation petition.* A petition from a property owner requesting the city annex the property into the city's jurisdiction and assign it a city zoning category.

*Applicant.* A person who is applying for subdivision or site plan approval, or for a grading or sediment control permit, or who has received approval of a forest stand delineation or forest conservation plan.

*Champion tree.* Largest tree of its species within the United States, the state, county or the city.

*Commercial and industrial uses.* Manufacturing operations, warehousing, office complexes, shopping centers, wholesale and retail facilities for goods, products and services and other similar uses and their associated storage areas, yards, and parking areas.

*Concept plan.* The first site development plan submitted for planning commission review, as a part of the overall site development review process. The plan that provides a conceptual design and meets the minimum informational requirements of the planning department's checklist.

*Critical habitat area.* A critical habitat for an endangered species and its surrounding protection area. A critical habitat area shall:

- (1) Be likely to contribute to the long-term survival of the species;
- (2) Be likely to be occupied by the species for the foreseeable future; and
- (3) Constitute habitat of the species which is considered critical under Natural Resources Article, sections 4-2A-04 and 10-2A-06, *Annotated Code of Maryland*.

*Declaration of intent.* A signed and notarized statement by a landowner that the cutting of trees on the landowner's property:

- (1) Is for purposes exempted under this chapter;
- (2) Will not circumvent the requirements of this chapter; and
- (3) Meets the requirements of COMAR 08.19.01.05.

*Development project completion.* For the purposes of compliance with this chapter, the date or event identified as such in the forest conservation plan agreement, but no later than the date on which the final building inspection or sediment control inspection (for activities not involving a building) is conducted by the Planning and Code Administration. A staged development may have more than one completion date.

*Floodplain (100-year).* An area along or adjacent to a stream or body of water, except tidal waters, that is capable of storing or conveying floodwaters during a 100-year frequency storm event, or a 100-year flood, with the exception of floodplains containing a body of water with a watershed of less than four hundred (400) acres.

*Forest.* A biological community dominated by trees and other woody plants (including plant communities, the understory, and forest floor), but excluding orchards or nursery stock, covering a land area of ten thousand (10,000) square feet or greater. Forest includes:

- (1) Areas that have at least one hundred (100) live trees per acre with at least fifty (50) percent of those trees having a two-inch or greater diameter at four and one-half (4.5) feet above the ground; and
- (2) Forest areas that have been cut but not cleared.

*Forest conservation.* The retention of existing forest or the creation of new forest at the levels set by the planning commission or planning director.

*Forest conservation fund.* A special fund maintained by the city to be used for purposes and in the manner specified by resolution of the city council and referenced in section 22-9(f).

*Forest conservation plan.* A plan approved pursuant to sections 22-7 and 22-8 of this chapter.

*Forest conservation threshold.* The percentage of the net tract area at which the reforestation requirement changes from a ratio of one-quarter (1/4) acre planted for every one acre removed to a ratio of two (2) acres planted for every one removed.

*Forest cover.* The area of a site meeting the definition of forest.

*Forest stand delineation.* The evaluation of a site's existing forest and other vegetation in relation to the natural resources on a site proposed for development or subject to land-disturbing activities, as provided in the state or city forest conservation technical manual.

*Growing season.* The period of consecutive frost-free days as stated in the current Soil Survey for Montgomery County, published by the National Cooperative Soil Survey Program, 16 U.S.C. Sec. 596(a)-(f).

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*High-density residential.* For the purposes of this chapter, an area zoned for densities greater than one dwelling unit per forty thousand (40,000) square feet, including both existing and planned development and their associated infrastructure, such as roads, utilities, water and sewer service.

*Institutional development.* Land occupied by uses such as schools, colleges and universities, places of worship or religious institutions, military installations, transportation facilities, utility and sewer projects, government offices and facilities, golf courses, recreation areas, parks, and cemeteries.

*Land-disturbing activities.* To cause disturbance of the earth including, but not limited to, any excavating, filling, stockpiling of earth materials, grubbing, root mat or topsoil disturbance, or any combination of them.

*Landscaping plan.* A plan providing for reforestation or afforestation of an area at least thirty-five (35) feet wide and two thousand five hundred (2,500) square feet using native or indigenous plants when appropriate and is part of an approved forest conservation plan.

*Lot.* A unit of land, the boundaries of which have been established as a result of a deed or previous subdivision of a larger parcel and which will not be the subject of further subdivision, as defined under section 5-1601 of the Natural Resources Article of the Maryland Code, without an approved forest stand delineation and forest conservation plan.

*Mixed-use development.* A single, relatively high-density development project, which includes two (2) or more types of uses.

*Net tract area.* The total area of a tract, including both forested and unforested areas, to the nearest one-tenth (1/10) acre, reduced by the area found to be within the boundaries of the 100-year floodplain; except that in agriculture and resource areas, net tract area is the portion of the total tract for which land use will be changed or will no longer be used for primarily agricultural activities, reduced by the area found to be within the boundaries of the 100-year floodplain.

*Nontidal wetland.* An area regulated as a nontidal wetland under Natural Resources Article, sections 8-1201—1211, *Annotated Code of Maryland*, and COMAR 08.05.04.

*Obligee.* A person obligated under a financial security instrument to meet certain regulatory requirements under article II of this chapter.

*Off-site.* Outside the limits of the area encompassed by the tract.

*On-site.* Within the limits of the area encompassed by the tract, including an area classified as a 100-year floodplain.

*Optional method map amendment.* An amendment to the city zoning map using the method defined in section 24-198 of chapter 24 of the City Code.

*Person.* The federal government, the state, any county, municipal corporation, or other political subdivision of the state, or any of their units, including the city department of public works, or an individual, receiver, trustee, guardian, executor, administrator, fiduciary, or representative of any kind, or any partnership, firm, common ownership community or other homeowners' association, public or private corporation or any of their affiliates or subsidiaries, or any other entity.

*Planning commission.* The city planning commission of the City of Gaithersburg.

*Preliminary site plan.* The second site development plan submitted for planning commission review, as part of the overall site development review process. The plan that is prepared by a civil engineer and meets the minimum informational requirements of the planning department's checklist.

*Preliminary subdivision plan.* A plan for a proposed subdivision or resubdivision prepared and submitted for approval by the planning commission pursuant to chapter 20 of the City Code prior to preparation of a final subdivision plat.

*Public utility.* Includes the following:

- (1) The transmission lines and the electric generating stations licensed under article 78, section 54A and 54B or 54-I of the Maryland Code; and
- (2) Water, sewer, electric, gas, telephone, and cable facilities and lines.

*Reforestation or reforested.* The creation of a biological community dominated by trees and other woody plants (including plant communities, the understory, and forest floors) containing at least one hundred (100) live trees per acre with at least fifty (50) percent of those trees having the potential of attaining a two-inch or greater diameter measured at four and one-half (4.5) feet above the ground, within seven (7) years. Reforestation includes the landscaping of areas under an approved landscaping plan that establishes a forest at least thirty-five (35) feet wide and covering at least two thousand five hundred (2,500) square feet of land area.

*Retention.* The deliberate holding and protecting of existing trees and other plants on the site per the methods outlined in the technical manual.

*Schematic development plan.* For sites zoned MXD, the plan defined in chapter 24, section 24-160D.9(b) of the City Code. For optional method map amendments, the plan defined in chapter 24, section 24-198(a) of the City Code.

*Sediment control permit.* A permit required to be obtained for certain land-disturbing activities:

- (1) Pursuant to chapter 8 of the City Code;
- (2) From the Washington Suburban Sanitary Commission for major utility construction as defined under regulations of the commission.

*Selective clearing.* As defined in the state or city technical manual, whichever is in effect at the time.

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*Site plan.* A plan or an amendment to a plan approved under article V, chapter 24 of the City Code.

*Sketch plan.* For sites zoned MXD, the plan defined in chapter 24, section 24-160D.9(a) of the City Code.

*Special exception.* A use identified as a special exception in any zoning district and required to be approved under article VII, chapter 24 of the City Code.

*Specimen tree.* Trees that are part of a historic site; or have been designated as a champion tree by the state, county or city; or have a diameter at four and one-half (4.5) feet above the ground of twenty-four (24) inches or more; or have exceptional canopy shape and beauty; or are rare, threatened, endangered species, or are individually identified on an approved forest conservation plan, or seventy-five (75) percent or more of the DBH of the current state champion of that species.

*Steep slopes.* Those slopes referred to in the state or city technical manual, whichever is in effect at the time.

*Streams.* Intermittent streams are those in which surface water is absent during part of the year; and perennial streams are those containing surface water through the rainfall year. All streams are those shown on the most recent 7.5-minute topographic quadrangle published by the U.S. Geologic Survey, as confirmed by field verification.

*Stream buffer.* All lands lying within fifty (50) feet, measured from the top of each normal bank, of a perennial or intermittent stream.

*Technical manual.* A detailed guidance document used for administration of this chapter that is adopted by the mayor and council pursuant to section 22-13.

*Tract.* The property subject to subdivision, a development application or a sediment control permit.

*Tree.* A large, woody plant having one or several self-supporting stems or trunks and numerous branches that reach a height of at least twenty (20) feet at maturity.

*Tree cover.* The combined area, in square feet, of the canopy of all trees on a tract. For replanting purposes, tree cover is the typical canopy area for a specific tree at maturity as listed in the city technical manual.

*Variance.* Relief from this chapter, pursuant to section 22-12 of this chapter. It does not mean a subdivision or zoning variance.

*Watershed.* All lands lying within an area described as subbasin in water quality regulations adopted by the state department of environment under COMAR 26.08.02.08. (Ord. No. O-17-92, 12-7-92)

**Sec. 22-3. Applicability.**

Except as otherwise provided in this chapter, this chapter applies to:

- (a) A person required by law to obtain schematic development plan approval, preliminary subdivision approval, or site plan approval;
- (b) A person required by law to obtain special exception approval or a sediment control permit for a proposed activity on an area of land forty thousand (40,000) square feet or larger and who is not otherwise required to obtain an approval under subsection 22-3(a) of this chapter; and
- (c) A person using state funds to conduct a nonexempt activity shall comply with COMAR 08.19.04.01 D—G. (Ord. No. O-17-92, 12-7-92)

**Sec. 22-4. Exemptions.**

The following are exempt from the requirements of this chapter:

- (a) An activity conducted on an existing single lot zoned residential of any size that:
  - (1) Is the subject of a recorded plat;
  - (2) Does not result in the cumulative cutting, clearing or grading of more than ten thousand (10,000) square feet of forest;
  - (3) Will not result in the cutting, clearing or grading of any trees or forest that are subject to the requirements of a previously approved forest conservation plan or site plan; and
  - (4) Is subject to a declaration of intent filed with the planning director stating that the lot will not be the subject of additional development, resubdivision or other regulated activities pursuant to this chapter within five (5) years of the cutting, clearing or grading of forest;
- (b) An agricultural activity that is exempt from both platting requirements under chapter 20 of the City Code and requirements to obtain a sediment control permit under chapter 8 of the City Code, and does not result in the cutting or clearing of more than forty thousand (40,000) square feet of forest. Agricultural support buildings and related activities are exempt only if built using best management practices;
- (c) A tree nursery;
- (d) A state, county or city highway construction activity that is subject to section 5-103 of the Natural Resources Article of the Maryland Code;
- (e) A governmental project reviewed for forest conservation purposes by the state department of natural resources under the Code of Maryland Regulations;
- (f) Except for the clearing of access roads, routine maintenance, public utility easements and rights-of-way;
- (g) Utility or other work that is of an emergency nature;

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- (h) The cutting or clearing of public utility rights-of-way or for electric generating stations licensed under sections 54A and 54B or section 54I of article 78 of the Maryland Code, if:
    - (1) Any required certificates of public convenience and necessity have been issued in accordance with section 5-1603(f) of the Natural Resources Article of the Maryland Code; and
    - (2) The cutting or clearing of the forest is conducted so as to minimize the loss of forest.
  
  - (i) An activity or development which has received final site plan or amendment to final plan, prior to the effective date of this chapter is exempt from the requirements of article II at the time of subsequent sediment control permit application if:
    - (1) Final plat approval is obtained by the effective date of this chapter; or
    - (2) A substantially complete application for final plat approval under chapter 20 of the City Code has been filed by the effective date of this chapter. If all other requirements are met, the planning commission must consider an application to be substantially complete if the commission determines that:
      - (i) Any required approval or permit that has not been obtained from another governmental agency is not available solely because of the inaction by the other governmental agency; and
      - (ii) The applicant has used best efforts to obtain the permit or approval.
  
  - (j) A preliminary subdivision or preliminary site plan approved prior to July 1, 1991.
  
  - (k) Schematic development plan for sites zoned MXD approved prior to January 1, 1992.
  
  - (l) An amendment to any application or plan approved prior to the effective date of this chapter that does not result in the cutting or clearing of any trees or forest shown to be retained on an approved site plan, landscape plan, tree conservation plan or forest conservation plan. (Ord. No. O-17-92, 12-7-92)

#### **Sec. 22-5. Exemptions; special transition provisions.**

An activity or development that is exempted under section 22-4 but which requires site plan approval is subject to the local law applicable to tree conservation in effect prior to the effective date of this chapter. However, a violation of the tree conservation requirements of any tree conservation plan, site plan or landscape plan may be enforced using remedies provided under this chapter. (Ord. No. O-17-92, 12-7-92)

**Sec. 22-6. Utility lines.**

- (a) *General.*
- (1) Except as provided in section 22-4 or paragraph (2) of this subsection, this section applies to a proposed land-disturbing activity requiring a sediment control permit for the construction, reconstruction or replacement of public utility lines (except water and sewer lines) within a public right-of-way, public utility easement or a public utility right-of-way owned by the utility.
  - (2) This section does not apply if a public utility easement will be located on the property of a development subject to article II of this chapter. Satisfaction of the regulatory requirements of that article applicable to activities on the easement is the responsibility of the owner of the property.
- (b) *Calculation rules; single lot exemption.*
- (1) To determine the applicability of this chapter under section 22-3(b) to proposed activities within a public right-of-way or public utility easement, the calculation of land area must be based on the limits of disturbance as shown on the sediment control permit.
  - (2) A public right-of-way, public utility easement, or privately owned utility right-of-way is considered to be a single lot for purposes of an exemption under section 22-4(a) if the proposed activity and any future stages of the work on the utility line will not result in the cumulative cutting, clearing or grading of more than forty thousand (40,000) square feet of forest or the cutting, clearing or grading of any trees or forest that are subject to a previously approved forest conservation or tree save plan. A declaration of intent is not required under section 22-4(a)(4); however, any subsequent stages of the work must be identified at the time of the initial sediment control permit application.
  - (3) If the single lot exemption is not applicable, afforestation or reforestation requirements must be calculated using the net tract area applicable to the entire proposed utility line without regard to project segments subject to a specific sediment control permit. The property boundaries of the privately owned utility right-of-way, public utility easement or public right-of-way (to the extent of the utility work) must be used in calculating the area of the tract. The net tract area should reflect any reduction in land area that will continue to be used for agricultural activities. (Ord. No. O-17-92, 12-7-92)

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**ARTICLE II. FOREST STAND DELINEATIONS  
AND FOREST CONSERVATION PLANS****Sec. 22-7. General.**

(a) *Approval required.* A person who is subject to this article must submit a forest stand delineation and forest conservation plan for regulatory approval.

(b) *Forest stand delineation.*

- (1) A forest stand delineation is to be used during the conceptual review process to determine the most suitable and practical areas for tree and forest conservation. A forest stand delineation must contain topographic, hydrographic (including streams), soils and geologic, and qualitative and quantitative information on trees and forest cover, and other information or requirements specified in the technical manual or as may be required by the city planning commission or planning staff.
- (2) The planning director may waive any requirement for information that is deemed to be unnecessary for a specific site.
- (3) A forest stand delineation is not valid after three (3) years unless:
  - (i) a forest conservation plan has been accepted as complete; or
  - (ii) The delineation has been recertified by the preparer.

(c) *Forest conservation plan.*

- (1) A forest conservation plan is intended to govern conservation, preservation, maintenance, and any afforestation or reforestation requirements applicable to the site. A forest conservation plan must contain information in the form of a table of values on the extent and characteristics in square feet of the net tract area, and of the trees and forested area to be retained or planted. It must also contain proposed locations for on-site and off-site reforestation, scheduling, protective measures, a binding two-year maintenance agreement, a binding agreement to protect forest conservation areas, and other information or requirements specified in the technical manual.
- (2) A forest conservation plan must include protective measures designed to conserve significant and mature trees on adjacent property from adverse impacts that may be caused by the development or land-disturbing activities proposed for the tract. These measures must meet the standards contained in the technical manual.
- (3) A forest conservation plan may be reviewed in two (2) stages with the submission of a preliminary and a final forest conservation plan as specified under section 22-8.

(d) *Qualifications of preparer.* The forest stand delineation and forest conservation plan must be prepared by a licensed forester, licensed landscape architect or other qualified professional approved by the planning director. In determining if a person is qualified, the person must meet all applicable requirements under COMAR 08.19.06.01. (Ord. No. O-17-92, 12-7-92)

**Sec. 22-8. Application, review and approval procedures.**

(a) *Coordinated with project review.* Submittal and review of the forest stand delineation and forest conservation plan must be done in conjunction with the various review processes listed in this article. The planning director must coordinate the review of the forest conservation plan with other city departments, the Washington Suburban Sanitary Commission and other relevant regulatory agencies, and entities that will provide public utilities to the tract to promote consistency between the objectives of this chapter and other development requirements. To the extent practicable, entities providing public utilities should design facilities that will serve a tract in a manner that avoids identified conservation areas and minimizes tree loss.

(b) *Modification to an approved plan.* The planning director may approve field modifications to an approved forest conservation plan that are consistent with this chapter.

(c) *Forest stand delineation.* The applicant must submit to the planning director a forest stand delineation with an application for site development, including: concept plan review, preliminary subdivision or preliminary site plan review, special exception and conditional use applications, schematic development plan application; final site plan application, and; with other applications including: optional method local map amendment application, local map amendment and sketch plan approval for the MXD Zone, and annexation petition. Within thirty (30) days of receipt, the planning director must notify the applicant whether the forest stand delineation is complete and correct. If the planning director fails to notify the applicant within thirty (30) days, the delineation will be treated as complete and correct. The planning director may require further information or provide for one extension of this deadline for an additional fifteen (15) days for extenuating circumstances.

(d) *Forest conservation plan.*

- (1) *Application.* Upon notification that the forest stand delineation is complete and correct, the applicant must submit a forest conservation plan to the planning director excluding local map amendment applications that do not include a development plan of any type. If the development proposal will require more than one of the approvals subject to this subsection, the applicant must submit a preliminary forest conservation plan to the planning director in conjunction with the first approval and a final forest conservation plan in conjunction with the last approval. If only one approval subject to this subsection is required, the applicant must submit a final forest conservation plan only. The preliminary and final forest conservation plans must meet the submittal requirements of the technical manual.
- (2) *Review.* Within forty-five (45) days from receipt of a final forest conservation plan, including a plan that is not reviewed in two (2) stages, the planning director must notify the applicant whether the forest conservation plan is complete and approved for submission to the planning commis-

sion as part of the development application. If the applicant is not notified within forty-five (45) days, the plan will be treated as complete and approved for submission. The planning director may require further information or provide for one extension of this deadline for an additional fifteen (15) days for extenuating circumstances. In addition, at the request of the applicant, the director may extend this deadline for extenuating circumstances.

- (3) *Condition of approval.* The forest conservation plan will be reviewed by the planning commission concurrently with and as a part of the concept plan, preliminary subdivision or preliminary site plan, schematic development plan or special exception application as appropriate. The forest conservation plan, as may be amended by the commission, must be made a condition of any approval of the development application. For a schematic development plan approved by the city council, or a special exception approved by the board of appeals, the commission may recommend specific amendments to the forest conservation plan.
- (4) *Revocation.* The planning commission may revoke an approved forest conservation plan if it finds that a provision of the plan has been violated, approval of the plan was obtained through fraud, misrepresentation, a false or misleading statement, or omission of a relevant or material fact. Before revoking approval, the planning commission shall notify the violator in writing and provide an opportunity for a hearing.
- (e) *Issuance of sediment control permit.* A sediment control permit must not be issued to a person who must comply with this article until:
- (1) A final forest conservation plan, if required, is approved;
  - (2) Any financial security instrument required under this chapter is provided; and
  - (3) Protective devices for retained areas, required by the forest conservation plan, have been installed and approved by inspection of the city planning department. (Ord. No. O-17-92, 12-7-92)

#### **Sec. 22-9. Retention, afforestation and reforestation requirements.**

- (a) *Table.* Forest Conservation Threshold as a Percentage of Net Tract Area:

Institutional development areas	20%
Residential areas	20%
Mixed-use development areas	15–20%*
Commercial and industrial use areas	15%

\* Residential and institutional portions of tract must meet twenty (20) percent requirement.

- (b) *Retention.* The primary objective of the forest conservation plan is to retain existing forest cover and avoid reforestation in accordance with this chapter by retaining forest up to the level of the “break even point” as defined in the technical manual. The forest conservation plan must retain certain vegetation and specific

areas in an undisturbed condition unless the applicant can demonstrate, to the satisfaction of the planning commission, that reasonable efforts have been made to protect them and the development proposal cannot be reasonably altered. In general, these areas include certain floodplains, stream buffers, steep slopes and areas of highly erodible soils, and critical habitats; contiguous forests; rare, threatened and endangered species; trees connected to an historic site and exceptionally large trees, specimen trees and champion trees.

- (c) *Reforestation.* The forest conservation plan must provide for reforestation as follows:
- (1) For all existing forest cover measured to the nearest one-tenth (1/10) acre cleared on the net tract area below the applicable forest conservation threshold, the area of forest removed must be reforested at a ratio of two (2) acres planted for every one acre removed.
  - (2) For all existing forest cover measured to the nearest one-tenth (1/10) acre cleared on the net tract area above the applicable forest conservation threshold, the area of forest removed must be reforested at a ratio of one-fourth (1/4) acre planted for every one acre removed.
  - (3) Each acre of forest retained on the net tract area above the applicable forest conservation threshold must be credited against the total number of acres required to be reforested.
  - (4) Off-site forest retention must be provided at two (2) acres of forest retained for every acre of forest cleared.
  - (5) An activity not exempted by section 22-4 of this chapter, within the net tract area, that occurs wholly or partly in areas regulated as nontidal wetlands under Natural Resources Article, sections 8-1201–1211, *Annotated Code of Maryland* and COMAR 08.05.04, is subject to both the nontidal wetland regulatory requirements and the requirements of this chapter. However, any area of forest within the net tract area that is retained or reforested, including forest in nontidal wetlands, must be counted towards forest conservation requirements under this chapter, subject to the following:
    - (i) Any area of forest in the net tract area, including forest in nontidal wetlands that is retained, shall be counted towards the forest conservation requirements under this subsection.
    - (ii) For the purposes of calculating reforestation mitigation under this chapter, a forested nontidal wetland permitted to be cut or cleared and required to be mitigated under COMAR 08.05.04 shall be shown on the forest conservation plan and subtracted on an acre-for-acre basis from the total amount of forest to be cut or cleared as part of a regulated activity.
    - (iii) Nontidal wetlands shall be considered to be priority areas for retention and reforestation.
    - (iv) Nontidal wetland delineation and identification should be included at the earliest stage of planning to assist the applicant in avoidance and reduction of impacts to the nontidal wetlands and to avoid delay in the approval process.

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(d) *Afforestation.*

- (1) Any site with less than fifteen (15) percent of the net tract area in forest cover must be afforested up to at least fifteen (15) percent of the net tract area.
- (2) Afforestation should be accomplished by the planting of forest cover. However, if the applicant demonstrates to the satisfaction of the planning commission that afforestation using forest cover is inappropriate for a site because of its location in an urban or historic setting, redevelopment context, high-density residential, commercial, industrial or institutional area (as defined in section 22-2) or similar reason, afforestation requirements may be satisfied entirely or in part by tree cover.
- (3) Forest cut or cleared below the afforestation level shall be reforested at a two-to-one (2:1) ratio and added to the amount of afforestation necessary to reach the required afforestation level as determined by the amount of forest existing before cutting or clearing began.

(e) *Standards for reforestation and afforestation.*

- (1) *Preferred sequence.* Except as provided in the technical manual or otherwise in paragraph (1) of this subsection, the preferred sequence for afforestation and reforestation is, in general, selective clearing, on-site afforestation or reforestation, landscaping with an approved plan, off-site retention, afforestation or reforestation, and natural regeneration on-site and natural regeneration off-site.
- (2) *Governmental considerations.* The sequence provided in subsection (1) of this subsection may be modified for a specific project if the applicant demonstrates to the satisfaction of the planning commission that a different sequence is necessary:
  - (i) To achieve the objectives of a master plan or other city land use policies or to take advantage of opportunities to consolidate forest conservation efforts; or
  - (ii) For public sites acquired or required to be dedicated before July 1, 1991, to ensure that the site can be used for its intended purpose without major design changes; or
  - (iii) For educational, recreational and public safety facilities, to ensure that public safety is not compromised.
- (3) *Public utility considerations.* The sequence provided in subsection (1) of this subsection for public utility projects may be modified to reflect applicable electrical or other safety codes or right-of-way constraints.
- (4) *Priority areas and plantings.* Afforestation and reforestation should be directed to stream buffer areas, floodplains, connections between and additions to forested areas, critical habitat areas, steep slopes, and land use and road buffers. The use of native plant materials, when appropriate, is preferred and should be taken from the list of recommended species contained in the technical manual. Unless otherwise provided by the planning

commission or planning director, the required use of natural regeneration under this chapter supersedes any prohibition under chapter 17AA of the City Code.

- (5) *Location requirements.* Required reforestation or afforestation must occur within both the city limits and watershed in which the project is located, except that if it cannot be reasonably accomplished within both the city limits and watershed in which the project is located, then the reforestation or afforestation may occur anywhere in the city or anywhere in the watershed in which the project is located.
  - (6) *Deadline for plant installation.* The afforestation and reforestation requirements under this section must be accomplished within two (2) growing seasons after development project completion.
- (f) *In-lieu fee.* If a person satisfactorily demonstrates that the requirements for reforestation or afforestation on-site or off-site cannot be reasonably accomplished, the person must pay a fee to the forest conservation fund established by resolution of the city council at a rate specified by the city council by law or resolution, but not less than the rate required under section 5-1610 of the Natural Resources Article of the Maryland Code. Payment of the prescribed fee must occur within ninety (90) days after development project completion.
- (g) *Agreements.*
- (1) *Maintenance agreement.* A forest conservation plan must include a two-year binding agreement for maintenance of conservation areas, including the watering (as practical), feeding and replanting of areas to be afforested or reforested. The agreement shall detail how these areas will be protected to ensure satisfactory establishment of a forest and shall follow the standards provided in the technical manual. The two-year period starts upon satisfactory final inspection of the conservation measures required under the forest conservation plan. A staged project may have more than one segment.
  - (2) *Long-term protective measures.* A forest conservation plan must include appropriate measures for the protection of conservation areas; limitations on the use of these areas consistent with conservation and management practices; and legal instruments such as conservation easements, deed restrictions, covenants and other agreements, as necessary.
- (h) *Financial security.*
- (1) *Security required.* Except as provided in section 22-8 of this chapter, an approved financial security instrument must be posted by applicant to ensure:
    - (i) Compliance with all requirements of an approved forest conservation plan including afforestation, reforestation and maintenance; or
    - (ii) Full payment of fees to be paid in lieu of afforestation or reforestation, if required under subsection (f) of this section.

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- (2) *Preferred form.* The preferred financial security instruments are an irrevocable letter of credit or a cash bond. The letter of credit must expressly state that the total sum is guaranteed to be available and payable on demand directly to the City of Gaithersburg in the event of forfeiture. A certificate of guarantee or a surety bond may also be used, including a bond payable to the city that additionally guarantees completion of public improvements associated with the proposed development. The financial security instrument must be made payable to the city and must be of a form and content satisfactory to the city and its legal counsel.
  - (3) *When required.* The financial security instrument must be provided prior to any land-disturbing activity occurring on a section of the tract subject to the forest conservation plan.
  - (4) *Amount required.*
    - (i) If the financial security is required under subsection (1)(i) of this subsection, the security instrument must be in an amount equal to the estimated cost of afforestation, reforestation and maintenance applicable to the section of the tract subject to the land-disturbing activity. The instrument must include a provision for adjusting the amount based on actual costs. The city manager must notify the obligee of any proposed adjustment and provide the opportunity for an informal conference.
    - (ii) If the financial security is required under subsection (1)(ii) of this subsection, the security instrument must be in an amount equal to the in-lieu payment.
  - (5) *Release.* The financial security instrument must be in effect until all requirements have been fulfilled to the satisfaction of the city manager or his designee. The instrument may provide for the partial release or return of the instrument based on successful implementation of phases of the forest conservation plan.
  - (6) *Events of forfeiture.* The financial security instrument may be subject to forfeiture on:
    - (i) Failure to perform the work under the forest conservation plan in accordance with the required schedule; or
    - (ii) Failure to pay a required in-lieu fee in a timely manner.
  - (7) *Forfeiture proceedings.*
    - (i) The city manager must notify the obligee by certified mail of the intention of the city to initiate forfeiture proceedings.
    - (ii) The obligee has thirty (30) days from the receipt of the notice of forfeiture to comply with the requirements of the forest conservation plan and any corrections ordered by the city manager.
    - (iii) If the obligee fails to comply with above section 22-9(h)(7)(ii), the financial security instrument must be forfeited.
- (i) *Exception: special provision for smaller tracts.* This section does not apply to governmental entities.

- (1) For tracts under forty thousand (40,000) square feet, the planning commission may approve a modified forest conservation plan without the need for an applicant to obtain a variance under this chapter.
- (2) The city manager or designee may waive or modify requirements under this chapter for financial security, a short-term maintenance agreement and long-term protective measures.
- (3) Retention, afforestation and reforestation should be required in accordance with this section. However, the afforestation and reforestation requirements for a tract subject to this section may be calculated in terms of tree cover instead of forest cover. The planning commission may grant a waiver of afforestation or reforestation requirements upon a showing of hardship or other appropriate justification. (Ord. No. O-17-92, 12-7-92)

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**ARTICLE III. ENFORCEMENT, APPEALS, VARIANCES AND ANNUAL REPORT AND BIENNIAL REVIEW****Sec. 22-10. Inspections and notification.**

The inspection process and notification provisions shall be as stipulated in the Forest Conservation Technical Manual adopted by resolution of the city council. (Ord. No. O-17-92, 12-7-92)

**Sec. 22-11. Penalties and other remedies.**

(a) Violations of this chapter are declared to be municipal infractions and enforceable pursuant to the provisions of section 1-9 of the City Code. The maximum penalty for each initial and repeat violation shall be established by resolution of the city council, but in no case shall the maximum permissible penalty exceed that penalty provided for in article 22A of the *Annotated Code of Maryland*.

(b) Replacement of individual trees. In addition thereto, any tree individually identified or located within a forest retention area on an approved site plan, landscape plan, tree conservation or forest conservation plan must be replaced should the tree not survive during construction or during the two-year maintenance period, pursuant to the following formula:

- (1) The total caliper inches of trees to be removed must be replaced with two (2) times the amount of caliper inches using native or indigenous trees; and
- (2) The replacement trees may be planted off-site should space on-site be inadequate; and
- (3) Each replacement tree must be at least six (6) inches in caliper measured twelve (12) inches above the root ball.

(c) In addition thereto, the city may institute injunctive, mandamus or any other appropriate action or proceedings at law or equity for enforcement of this chapter or to correct violations of this chapter, and any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions or mandamus or other appropriate form of remedy or relief.

(d) Fund. Money collected under this section must be deposited into the forest conservation fund established by resolution of the city council. (Ord. No. O-17-92, 12-7-92)

**Sec. 22-12. Variance provisions.**

(a) *Written request.* A person may request from the planning commission in writing a variance from this chapter or any regulation adopted under it if the person demonstrates that enforcement would result in unnecessary hardship or practical difficulty to the person. A request for a variance waives the time requirements in section 22-8.

- (b) *Application requirements.* An applicant for a variance must:
- (1) Describe the special conditions peculiar to the property which would cause the hardship;
  - (2) Describe how enforcement of these rules will deprive the landowner of rights commonly enjoyed by others in similar areas;
  - (3) Verify that state water quality standards will not be violated or that a measurable degradation in water quality will not occur as a result of the granting of the variance; and
  - (4) Provide any other information appropriate to support the request.
- (c) *Referral to other agencies.* Before considering a variance, the planning commission must refer a copy of each request to the planning department and other appropriate officials or agencies for a written recommendation before acting on the request. Recommendations must be submitted to the planning commission within thirty (30) days from the receipt by the official or agency of the request or the recommendation should be presumed to be favorable.
- (d) *Minimum criteria.* A variance must not be granted if granting the request:
- (1) Will confer on the applicant a special privilege that would be denied to other applicants;
  - (2) Is based on conditions or circumstances which are the result of the actions by the applicant;
  - (3) Arises from a condition relating to land or building use, either permitted or nonconforming, on a neighboring property; or
  - (4) Will violate state water quality standards or cause measurable degradation in water quality.
- (e) *Approval procedures; conditions.* The planning commission, or the city council on a development plan, must make findings that the applicant has met all requirements of this section before granting a variance. Appropriate conditions may be imposed to promote the objectives of this chapter and protect the public interest.
- (f) *Notice to state department of natural resources; right to initiate or intervene in proceedings.*
- (1) Notice of a pending variance request must be given to the department of natural resources within fifteen (15) days of receipt of a request for a variance.
  - (2) The department of natural resources may initiate or intervene in an administrative, judicial or other original proceeding or appeal in the state concerning an approval of a variance. (Ord. No. O-17-92, 12-7-92)

### **Sec. 22-13. Annual report and biennial review.**

On or before July 1 of each year, the planning department will submit to the Senate Economic and Environmental Affairs Committee and the House Environmental Matters Committee a report in compliance with Natural Resources Article, Section 5-1613 of *The Annotated Code of Maryland*. The planning department will also submit the necessary documentation to comply with COMAR 08.19.02.04 regarding biennial review by the department of natural resources. (Ord. No. O-17-92, 12-7-92)

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**ARTICLE IV. FOREST CONSERVATION TECHNICAL MANUAL****Sec. 22-14. State and city technical manuals.**

(a) The Forest Conservation Manual, prepared by the Metropolitan Council of Governments for the Maryland Department of Natural Resources, dated December 31, 1991, is hereby adopted as part of chapter 22 of the Gaithersburg City Code by reference in order to provide the necessary procedures for compliance with this chapter until such time that the city council shall adopt a forest conservation manual prepared by the planning department, which upon adoption shall supersede the state manual.

(b) The city technical manual must include the methodologies and standards for:

- (1) Preparing and evaluating a forest stand delineation and natural resource inventory;
- (2) Preparing and evaluating a forest conservation plan, including priorities for forest retention, reforestation and afforestation, and a recommended tree species list;
- (3) Providing forest or tree protective measures during and after clearing or construction, including planting, tree relocation and maintenance;
- (4) Monitoring and enforcement of forest conservation plans; and
- (5) Other appropriate program requirements consistent with this chapter. (Ord. No. O-17-92, 12-7-92)

**Chapter 24 Zoning Ordinances****ARTICLE XIII. LANDSCAPING STANDARDS**

**Editor's note**--Provisions for this article XIII regarding landscaping standards were established by Ordinance No. O-14-91, adopted 7-1-91.

**Sec. 24-234. Purpose.**

The purpose of this article is to preserve, protect and improve the health and general welfare of the public by promoting the environmental and public benefits of landscaping. (Ord No. O-14-91, 7-1-91; Ord. No. O-22-92, 12-7-92)

**Sec. 24-235. Applicability.**

Landscaping in accordance with this article, and in accordance with article V, site development plans, section 24-168 through section 24-174, and chapter 22, trees and forest conservation, will be required for all developments, excluding single-family residential for, or upon a single lot or parcel, and any application that proposes less than five thousand (5,000) square feet of disturbed area, that have submitted an application for approval to the city planning commission, board of appeals, or city council after the effective date of this article. (Ord. No. O-14-91, 7-1-91; Ord. No. O-22-92, 12-7-92)

**Sec. 24-236. Required landscaping.**

A landscape plan is hereby required for all applications not exempt from this article and must be in accordance with the minimum requirements of chapter 22, trees and forest conservation. Landscaping above the minimum required in chapter 22 may be required by the planning commission or mayor and council upon a finding that additional buffer areas, screening or other landscape amenities are necessary to meet the purpose of this article. (Ord. No. O-14-91, 7-1-91; Ord. No. O-22-92, 12-7-92)

**Sec. 24-237. Street trees.**

Street tree plans, developed in conjunction with a proposed development or redevelopment, must meet the requirements of the city's urban forestry plan and city forest conservation technical manual and must be reviewed by the city beautification committee, which shall send its recommendation to the appropriate city agency or department.

Street trees are to be provided for all public streets within and adjacent to any proposed development where insufficient street trees presently exist. This requirement can be waived by the city planning commission. (Ord. No. O-14-91, 7-1-91; Ord. No. O-22-92, 12-7-92)

**Sec. 24-238. Planting standards.**

*Approved standards.* All landscaping must be planted in accordance with the city forest conservation technical manual. (Ord. No. O-14-91, 7-1-91; Ord. No. O-22-92, 12-7-92)