

# Part B

Preparation of a Natural  
Resource Inventory

# 1.0 INTRODUCTION

A Natural Resource Inventory (NRI), as defined in Subtitles 24 and 27 is:

“A plan map and supporting documentation or letter that provides all required information regarding the existing physical and environmental conditions on a site that is approved by the Planning Director or designee as described in the Environmental Technical Manual as approved and amended from time to time.”

An NRI is a detailed inventory of the lots or parcels, or combination of lots and parcels, that will be the subject of a development application. It is used in the land-use and site development planning process, which must consider impacts on a site’s natural and cultural resources. It is important to know if, and where, these resources exist. It provides detailed information on the land, ecological resources, and hydrologic resources, as well as any existing structural features of a site. The primary purpose of an NRI is to provide a base plan to be used in the design of the site for land development proposals.

There are five types of NRIs; however, an NRI is not a substitute, exemption, or waiver from the requirements of Subtitle 25, Division 2, Woodland and Wildlife Habitat Conservation Ordinance (WCO).

## 1.1 NRI APPLICABILITY

The following provides clarification of the types of applications that do and do not require an NRI.

### 1.1.1 Applications That DO Require Submittal of an NRI

An approved NRI is required to be included in the following applications:

- Preliminary Plan of Subdivision (Full NRI Only)
- Chesapeake Bay Critical Area Conservation Plan
- Type 2 Tree Conservation Plan applications to establish a Woodland Conservation Bank
- Stormwater Management, **if** the project does not meet the criteria listed in section 1.1.2
- Sediment and Erosion Control, if the project does not meet the criteria listed in section 1.1.2
- Zoning, **if** the project does not meet the criteria listed in section 1.1.2

### 1.1.2 Applications That DO NOT Require Submittal of an NRI

The following applications listed in the table below do not require an NRI to be included in the application package if the project meets the criteria indicated in the table below. For these applications, the proposed limit of disturbance must be shown on the development application form and/or all applicable plans.

It is important to note that some of these projects, which do not require an NRI with one application, may require an NRI with another part of the development process.

For example, a project area that has a site plan application that is grandfathered may still require a new stormwater concept approval that will, in turn, require NRI approval. Therefore, it is important to determine all of the applications required for the proposed development before proceeding.

**If an NRI is not required, no NRI application is required and written verification will not be provided by Planning Department staff. During the review of a concept or development application, if the Prince George’s Planning Department; Department of Permitting, Inspections and Enforcement (DPIE); or Soil Conservation District(PGSCD) determine that the scope of the project requires information relative to an NRI to complete the review, those agencies reserve the right to direct the applicant to obtain an approved NRI.**

**Table B-1. Applications that DO NOT Require an NRI Application**

APPLICATION TYPE	CRITERIA
<b>GRADING PERMIT APPLICATIONS</b>	An NRI is not required to be included in grading or building permit applications.
<b>STORMWATER MANAGEMENT AND SEDIMENT &amp; EROSION APPLICATIONS</b> (for certain projects)	An NRI is not required to be included in stormwater management applications and sediment & erosion control applications <b>IF</b> : (a) the development activity is exempt from the requirements of the Stormwater Management Ordinance per Section 32-174 (a) of the County Code; <b>and</b> (b) the limits of disturbance (LOD) as shown on the proposed site plan will not disturb regulated sensitive and/or environmental features (streams, stream buffers, Tier II buffers, wetlands, wetland buffers, Marlboro clays, Christiana clays, 100-year floodplain and/or adjacent steep slopes).
<b>ZONING (DEVELOPMENT REVIEW APPLICATIONS FOR SITE PLANS:</b> <ul style="list-style-type: none"> <li>• Conceptual Site Plan (CSP)</li> <li>• Comprehensive Design Plan (CDP)</li> <li>• Detailed Site Plan (DSP)</li> <li>• Specific Design Plan (SDP)</li> <li>• Special Exception (SE)</li> </ul>	An NRI is not required to be included in zoning applications for site plans <b>IF</b> (a) the project is grandfathered per CB-028-2010; <b>or</b> (b) the project will not require a grading permit per Section 32-127(a)(6)(A) of the County Code because the proposed limits of disturbance (LOD) is less than 5,000 square feet <b>and</b> will not disturb regulated and/or sensitive environmental features as demonstrated by the LOD on the site plan:
<b>MANDATORY REFERRAL APPLICATIONS</b>	An NRI is not required to be included in a Mandatory Referral application. During review of the application, staff will notify the applicant if an NRI will be required with future phases of the development process.
<b>STAND-ALONE TYPE 2 TREE CONSERVATION PLAN</b>	An NRI is not required to be included in a stand-alone Type 2 Tree Conservation Plan application that is not for the establishment of a woodland conservation bank. Staff reserves the right to require a forest stand delineation for these applications if warranted.
<b>WOODLAND CONSERVATION LETTER OF EXEMPTION APPLICATION</b>	An NRI is not required to be included in a woodland conservation letter of exemption application. However, because the exemption is one of several criteria for approval of an NRI equivalency letter, they are often submitted together if the project qualifies for the exemption.
<b>Zoning (Basic Plan)</b>	Not required, but FSD is required. A NRI is not required to be included in a Zoning Application for a Basic Plan, but a Forest Stand Delineation is required.
<b>Zoning (Zoning Map Plan)</b>	Not required. A NRI is not required to be included in Zoning Application for a Zoning Map Amendment, but a Forest Stand Delineation is required.

## 1.2 SUBMITTAL REQUIREMENTS FOR GRANDFATHERED PROJECTS

**An NRI approved prior to September 1, 2010, does not grandfather a development project from the current submittal requirements of Subtitles 24, 27, and 32.**

Section 3 of CB-26-2010 provides that a development project for which all required development applications have been approved by the Planning Board, Zoning Hearing Examiner, or District Council, and appeal periods have not expired as of September 1, 2010, is grandfathered; or a development project that has an approved preliminary plan of subdivision, but has not completed subsequent processes such as final plat or site plan as of September 1, 2010, is grandfathered for that portion of the project covered by the preliminary plan.

This only applies to zoning (development review) applications, not stormwater concept or erosion and sediment control applications.

In summary:

- a. Any new preliminary plan application submitted or approved after September 1, 2010 is not grandfathered and must include an approved NRI in the submission package.
- b. Any new site plan application (CSP, CDP, DSP, SDP and SE) submitted and/or approved after September 1, 2010 is not grandfathered and must include an approved NRI in the submission package unless it meets the criteria of section 1.1.1 for site plans.
- c. Any new site plan application with an approved preliminary plan for the proposed development, which was

approved prior to September 1, 2010, is grandfathered and does not have to include an approved NRI unless there is a change in the existing environmental features.

- d. Any revisions to a previously approved and grandfathered site plan is grandfathered from the NRI submission requirements provided that the proposed revisions are in substantial conformance with the findings associated with the previously approved and grandfathered preliminary or site plans.

## 1.3 TYPES OF NRIs

There are five types of NRIs. The type of NRI that can be submitted depends on the location and type of the proposed project. These various types of NRIs were developed to streamline the review time and the amount of information required, which may also reduce the preparation time. Each type is listed below:

- NRI Equivalency Letter (NRI-EL) Types 1 and 2
- Full NRI (NRI-FP)
- Intermediate NRI (NRI-IP)
- Limited NRI for Governmental and/or Linear Projects (NRI-LP)
- Chesapeake Bay Critical Area NRI (NRI-CP)

The type of NRI plan submitted must be specified on the application. The information required to evaluate each NRI varies. The requirements for preparation of the Full, Limited, Intermediate, and CBCA NRIs are combined into one checklist provided in Appendix B. There is no preparation checklist for the NRI-EL; however, the required items are provided in Section 2.

An NRI application will not be accepted for review until a complete package has been submitted. The criteria for acceptance of each type are provided in the following section.

### 1.3.1 NRI Equivalency Letter (NRI-EL)

The NRI-EL is a written confirmation of the existing conditions of a site. **It is not an exemption or waiver from NRI approval.** An NRI-EL is the simplest form of an NRI because it requires the least amount of information to prepare and submit; and is intended to have a reduced review period.

NRI-ELs are solely issued based on the proposed project. If the project changes, a revised or new NRI-EL may be required. Resources such as PGAtlas, and previously approved development plans or site visits, are used to review NRI-EL applications.

At a minimum, a proposed site plan, signed by a qualified professional, at a legible scale showing the proposed limits of disturbance (LOD) must be included. Additional information may be requested as needed; however, for NRI-EL issuance, **no mapped floodplain can be on the land area within the application. For areas not mapped with floodplain, DPIE will verify the presence of floodplain at the time of stormwater management site development concept plan review.** If floodplain is determined to be present, a Full NRI and/or floodplain study may be required. For non-government projects, the land area to be included in the NRI-EL request must encompass the entirety of the legal limits of lots and/or parcels that will be part of the land development, erosion and sediment, or stormwater site development concept plan applications.

Projects subject to violations of the grading, woodland conservation, or CBCA regulations do not qualify for an NRI-EL unless previously agreed to by staff prior to filing. Under these circumstances, a preliminary review with EPS staff is encouraged before filing for an NRI-EL.

There are two types of projects that can use an NRI-EL to meet the submittal requirements. Projects that do not meet the criteria for Types 1 or 2 may still be issued a NRI-EL at the discretion of the Planning Director or designee if available or submitted information is deemed sufficient for review with all required applications.

**Table B-2. NRI Equivalency Letter Project Criteria**

NRI-EL Project Type	Criteria
Type 1	<ul style="list-style-type: none"> <li>a. Qualify for a Standard Letter of Exemption from the Woodland and Wildlife Habitat Conservation Ordinance (WCO); and</li> <li>b. Demonstrate clearly that either (1) the site contains no regulated environmental features as defined in Sections 24-101(b) and 27-101.01(a) or (2) no regulated environmental features will be disturbed; or</li> <li>c. Be located within the CBCA, will result in less than 500 square feet of ground disturbance and no CBCA variance is required.</li> </ul>
Type 2	<ul style="list-style-type: none"> <li>a. Has a previously approved and implemented Type 2 tree conservation plan or CBCA Conservation Plan, with any required updated information as deemed necessary by the Environmental Planning Staff; and</li> <li>b. Does not result in significant changes to the previously approved limits of disturbance; and</li> <li>c. Does not create additional impacts to any regulated environmental features as defined in Section 24-101(b) and Section 27-101(a).</li> </ul>

### 1.3.2 Full NRI (NRI-FP)

A Full NRI (NRI-FP) consists of a detailed NRI plan, as well as other required documents, that show all the required on-site information within the legal boundaries of all lots or parcels that will be part of an application. This information must extend 100 feet off site of the area of the application. The information within the area off site can be estimated unless off-site impacts are proposed. This NRI type includes a forest stand delineation report, soils report, approved floodplain and wetland study, and other information (if applicable). All Preliminary Plan of Subdivision Applications must include a Full NRI. All other applications that do not qualify for an NRI Letter, Intermediate NRI, Limited NRI, or CBCAn NRI must submit a Full NRI that provides information for the land area within the entirety of the legal boundaries of the future application.

### 1.3.3 Intermediate NRI (NRI-IP)

An Intermediate NRI may be prepared and submitted for projects that are proposed to be located on a small portion of the overall property. This option is limited to projects that propose disturbance of more than 5,000 square feet but will have a limit of disturbance (LOD) that is less than 10 percent of the gross tract area. The option of an NRI-IP may be used for certain stormwater management concept plans and stand-alone TCP2 applications for woodland conservation banks that are not associated with a project that requires the approval of a zoning or subdivision application.

For this type of NRI, the proposed LOD must be shown on the plan. The information required for an Intermediate NRI is the same as that required for a Full NRI; however, the required detailed information must be shown within the proposed LOD and extended to 100 feet outside the LOD. The detailed on-site information is not required for the area beyond the 100-foot limit except for the existing tree line and calculations that are necessary for the preparation of a tree conservation plan.

### 1.3.4 Limited NRI (NRI-LP)

A Limited NRI is specific to government or linear projects. The types of projects that may use this option include:

- Stream restorations
- Utility installations
- Right-of-way improvements that include portions of multiple lots or parcels
- Government projects

Using this option eliminates the need to provide information on all resources within the legal boundaries of the subject lot(s) or parcel(s) involved in the project. For this type of NRI, the proposed LOD must be shown on the plan. The information required for a Limited NRI is the same as that required for a Full NRI; however, the required information must be shown within the proposed LOD and extended to 100 feet outside the LOD. The detailed on-site information is not required for the area beyond the 100-foot limit except for the existing tree line and calculations that are necessary for the preparation of a tree conservation plan.

### 1.3.5 CBCA NRI Plan (NRI-CP)

The Chesapeake Bay Critical Area (CBCA) is comprised of “All lands and waters defined in §8-1807 of the Natural Resources Article, Annotated Code of Maryland. This includes: (a) all waters of and lands under the Chesapeake Bay and its tributaries to the head of tide, and State and private wetlands designated under Title 16 of the Environment Article; (b) all land and water within one thousand (1,000) feet beyond the resources identified in (a); and (c) Modification to these areas through inclusions or exclusions proposed by local jurisdictions and approved by the Commission as specified in §8-1807 of the Natural Resources Article, Annotated Code of Maryland.”

Any property, or portion of a property, within the designated CBCA is subject to Subtitle 5B of the Prince George’s County code and may be required to submit a development plan for proposed development. The environmental features within the CBCA, such as primary buffers, secondary buffers and developed woodlands, are unique to CBCA lands and have different regulations from the environmental features in areas outside of the CBCA. For any development proposals within the CBCA that require a CBCA conservation plan, a CBCA NRI is required.

The information required for an NRI-CP is the same as that required for an NRI-FP except for stream buffers and primary management areas (PMA) as described in Section 3, in addition to special environmental features unique to the CBCA, as described in Section 4.

For properties partially located within the CBCA, the information for the area inside the CBCA must be shown in conformance with the NRI-CP requirements, and the information for the area outside of the CBCA area must be shown in conformance with an NRI-FP. The information can be shown on one plan

## 1.4 DATA SOURCES FOR PLAN AND LETTER PREPARATION

The listing of data sources which are available and recommended for NRI plan and letter preparations in conformance with the Technical Manual can be found in Appendix—Introduction. Other sources may be used, must be noted on the plan, and are subject to approval by the Planning Director or designee. If conflicting information is available from more than one source, or if a source is used that is not provided in Section 4, additional information may be required by the Planning Director or designee.

## 1.5 PREPARATION AND CERTIFICATION OF PLANS

The Prince George’s County Code requires that all environmental plans submitted to Prince George’s County be **prepared by a qualified professional, which includes a licensed forester, a licensed landscape architect, or a qualified professional** approved by the Maryland Department of Natural Resources (DNR) per criteria adopted in COMAR 08.19.06.01. Any person who has attained qualified professional status through the DNR program is automatically eligible to submit environmental plans in Prince George’s County. This requirement ensures that the plans have been prepared per industry standards and meet the minimum requirements of the County Code and the Environmental Technical Manual. If these qualifications cannot be verified, or if a person is not listed on the DNR-qualified professionals list, documentation of licensure or certification shall be required.

The qualified professional’s certification block or the licensed professional’s seal must be provided on each sheet of the plan. By signing the plans, the qualified or licensed professional is certifying that the information on the plans is true and accurate and meets the minimum submittal standards provided herein. They are, through their signature, certifying that they have either personally prepared the plans or reviewed the work of others for accuracy and completeness. Either is acceptable. Per Section 25-119(a)(4):

“If there are three documented cases of plan submittals that do not meet the minimum threshold requirements for submittal in conformance with this Division and the Technical Manual within a time frame of one year, the Planning Director may recommend to the Maryland Department of Natural Resources that a qualified professional’s ability to submit plans under this Division be suspended.”

## 1.6 NRI APPLICATION SUBMISSION

**NRI-EL** application materials shall be submitted via **e-mail, compact disc, or thumb drive with all documents in separate portable document format (PDF) files.**

**NRI Plan** application materials shall be submitted via **compact disc or thumb drive with all documents in separate PDF files; and** shall include one printed copy of the NRI plan. E-mailed file documents and copies of other documents will not be accepted.

See Section 2.0 for the details of application submission procedures and materials.

## 1.7 ACCEPTANCE, REVIEW, AND APPROVAL

### 1.7.1 Acceptance

When an NRI application is submitted to the Planning Department, it is first reviewed for acceptance (pre-acceptance review). The plans must be legible. All original documents and plans must be signed in blue ink by the qualified professional who prepared them. Illegible, incomplete packages, uncertified reports, or uncertified plans will result in the entire application package being returned with the deficiencies noted.

In order to be accepted, an application package for any type of NRI must include all applicable required information sufficient for review, as listed on the specified NRI checklist found on the application form.

### 1.7.2 Review Time

Reviews for NRI-EL applications, once accepted, will be completed within 15 business days. In extenuating circumstances, such as periods of high workload volume, this review and comment period may be extended an additional 10 days upon notice to the applicant.

For all other types of NRI applications, the review will be completed within 30 business days. In extenuating circumstances, such as periods of high workload volume, this review and comment period may be extended an additional 10 days upon notice to the applicant.

### 1.7.3 Approval

#### 1.7.3.1 NRI-EL APPROVAL

The official NRI-EL application is a separate document. The approval section for this type of NRI has been placed on the application to be completed by staff. The NRI-EL shall be approved with an original, or secure, electronic signature by staff. The signed plan will be returned to the contact via email, compact disc, thumb drive, or other media as approved by staff.

#### 1.7.3.2 NRI PLAN APPROVAL

After review comments have been addressed and the NRI package is complete with all information correctly shown on the NRI plan, the applicant will be notified by staff to submit one file of the plan for signature approval. This plan shall be signed by staff with an original or electronic signature and returned to the applicant via email, thumb drive, or compact disc. A printed copy must be requested and will require a fee.

## 1.8 PLAN VALIDITY, USE, AND REVISIONS

### 1.8.1 Validity

An approved NRI plan or letter is valid for five years from the date of signature approval, or until information used to prepare the NRI changes prior to expiration.

## 1.8.2 Use of Approved NRI

The approved NRI (plan or equivalency letter) shall be submitted with all development applications that require the NRI document (see applicability section).

The existing conditions approved on the NRI plan must be shown as required on subsequent TCPs, as well as associated stormwater concept plans, erosion and sediment control concept plans, preliminary plans, and site plans because the NRI contains the detailed existing conditions information relevant to the review of those development plans.

## 1.8.3 Revisions and Revalidation

### 1.8.3.1 REVISIONS TO NRI PLANS AND LETTERS

Approved NRIs are revised for several reasons. Some examples of when an approved NRI must be revised are listed below:

- The approval has expired
- The land area of the application is increased
- There is a change in information as determined by the Planning Director or designee
- The project is no longer grandfathered from Subtitle 24 and 27

In such cases, a meeting with Environmental Planning Section staff may be necessary to determine if a revision is necessary. Previously approved NRI plans that are being resubmitted for review must be submitted with a new application form and a letter stating what revisions were made and why.

Both the letter and the application form must reference the NRI number associated with the previously approved plan. A PDF file of the originally approved NRI plan must also be submitted.

### 1.8.3.2 NRI REVALIDATION

For NRI plan approval, a variety of information based on detailed studies and field investigations may be included, some of which could still be considered sufficient for review with a specific project, after the NRI has expired. If it is determined that the information on a previously approved TCP, CP, or approved, but expired, NRI is still sufficient for review with a current development application, the NRI may be revalidated for up to one year from the date of revalidation approval for a specific proposed project. Consideration for revalidation only applies to NRIs approved after September 1, 2010, older than 5, but less than 10, years of the last full review.

Revalidation is at the discretion of the Planning Director or designee. Such discretion shall be reasonably applied. Before submitting a request for revalidation, a preapplication meeting or review must be conducted to determine if the project qualifies and what information would be needed. Additional information, such as confirmation of certain existing features, may be required.

Revalidation will occur by the issuance of the previously approved letter or plan. An approval block (in green) shall be added to the previously approved document, signed and dated by Environmental Planning Section staff, with a note specifying the applicable use of the approval. The original approval shall be crossed out. No new NRI number or revision number will be issued. The approval block is provided in Appendix B.

## 1.9 APPEALS

If a submitted NRI application is not approved, the applicant may appeal the decision to the Director of the Planning Department.

## 2.0 REQUIRED DOCUMENTS and APPLICATION SUBMITTAL REQUIREMENTS

The submittal of an NRI-EL must include all applicable documents listed on the NRI-EL application form as described below. Incomplete packages will not be accepted. A complete NRI review package depends on the NRI type and the extent of environmental features found on-site.

Electronic submission requirements can be found in Appendix B. Submission requirements are subject to change based on the best available technology.

### 2.1 REQUIRED NRI-EQUIVALENCY LETTER (NRI-EL) APPLICATION DOCUMENTS

**NRI-EL** application materials shall be submitted via **email, compact disc, or thumb drive with all documents in a separate PDF file**. The items listed below shall be submitted:

1. **NRI Equivalency Letter application (NRI-EL)**—The current electronic application must be obtained from the Environmental Planning Section web page. The top-half section shall be fully completed and signed. Using the Adobe Acrobat program, the application must be signed electronically by the applicant with the “fill and sign” tool.
2. **Proposed Site Plan (Site Plan)**—The site plan shall show the existing conditions and proposed LOD reflective of the area of ground disturbance. The area of the LOD shall be provided in acres or square feet. The plan shall be signed in blue ink on every sheet and dated by the licensed professional who prepared it.
3. **General information Table**—The completed table shall be shown on the site plan or it can be provided on a separate 8 inch by 11 inch document. The table is provided in Appendix—Introduction.
4. One of the following documents that is applicable to the project:
  - a. **Woodland Conservation Letter of Exemption (WCO-EX)**—Provide the completed application with the required review for or the previously approved Letter of Exemption from the Woodland and Wildlife Habitat Conservation Ordinance.
  - b. **Type 2 Tree Conservation Plan (TCP2)**—The approved and implemented TCP2 or TCP1I.
  - c. **CBCA Conservation Plan (CP)**—The approved and implemented Chesapeake Bay Critical Area Conservation Plan (if a site is partially located in the CBCA, the exemption letter or TCP2 may be required for the area outside of the CBCA).
5. **Plat**—Approved plat if available.
6. **Deed**—If the legal property boundaries on the site plan are different from the legal boundaries on PGAtlas.com, the deed consistent with the boundaries on the site plans is required before acceptance.

### 2.2 REQUIRED NRI PLAN DOCUMENTS

NRI Plan (Full, Intermediate, Limited, or CBCA) application materials shall be submitted via **compact disc or thumb drive with all documents in separate PDF files, and** shall include one printed copy of the NRI plan. Emailed file documents and copies of other documents will not be accepted. The NRI Package Contents Checklist is found on the application form. The items listed below shall be submitted:

1. **NRI Plan Application**—The current electronic application must be obtained from the Environmental Planning Section web page. The appropriate box for the type of NRI application being submitted must be checked. The section required to be completed by the applicant must be filled completely.

2. **Preparation Checklist**—The NRI checklist must be completed by the qualified professional who prepared or verified the information on the plan.
3. **NRI Plan**—One PDF file and one printed copy of the NRI plan. The plan shall be signed and dated in blue ink on each sheet by the qualified professional who prepared or verified the information on the plan.
4. **General Information Table**—The completed General Information Table shall be shown on the NRI plan.
5. **Forest Stand Delineation (FSD) Report (if applicable)**—The FSD report shall include all required documents, signed and dated by the qualified professional who prepared it (to determine the appropriate type of FSD for the NRI application see Section 5.0).
6. **Wetland Report (if applicable)**—The wetland study prepared, signed, and dated by a qualified professional who has been trained in wetland delineation.
7. **DPIE Floodplain approval**—The approved 1-percent annual chance (100-year) floodplain letter must be approved by the Department of Permitting, Inspections and Enforcement. The floodplain approval letter must confirm the presence or absence of 100-year floodplain. Any letters from DPIE stating that there is no floodplain information or records for the site will not be accepted. If the approval is based on a floodplain study, the study must be included in the application.
8. **Soils Report**—USDA NRCS Web Soil Survey (WSS) Custom Soil Resource Report.
9. **Plat (if applicable)**—The approved plat if one is available.
10. **Deed (if applicable)**—If the legal property boundaries on the site plan are different from the legal boundaries on PGAtlas.com, the deed consistent with the boundaries on the site plan is required before acceptance.

## 2.3 NAMING CONVENTIONS FOR PDF DOCUMENTS

For electronic submissions, the name of each file attached to an email, or saved to a disc or thumb drive, must be associated with the document type. Below are the naming conventions for each required document that is attached or saved.

**Table B-3. Naming Conventions for PDF Documents**

	DOCUMENT TYPE	FILE NAME
<b>NRI-EL ONLY</b>	Natural Resource Inventory Equivalency Letter Application	NRI-EL
	Proposed Site Plan	Site Plan
	Approved Exemption letter or Application for Letter of Exemption	WCO-EX
	Approved Type 2 or Type II Tree Conservation Plan	TCP2
	Approved CBCA Conservation Plan	CP
<b>NRI PLAN ONLY</b>	Natural Resource Inventory Plan Application	NRI Application
	NRI Plan Checklist	Checklist
	NRI Plan	NRI
	Forest Stand Delineation Report	FSD Report
	Wetland Delineation	Wetland Study
	DPIE floodplain approval	FP form
	USDA NRCS Web Soil Survey (WSS) Custom Soil Resource Report	Soils Report
Rare Threatened Endangered Species Letter from DNR or Copy of Request to DNR	RTE	
<b>BOTH</b>	Plat	Plat
	Deed	Deed
	Other	Other

# 3.0 NATURAL RESOURCE INVENTORY PLAN REQUIREMENTS

At a minimum, An NRI plan must show all of the existing features found on a site. Other required information will vary based on the NRI application type.

## 3.1 PLAN STANDARDS

Plan standards are features that are always required on an NRI plan.

### 3.1.1 Extent of features and Information

**The Full (NRI-FP) or CBCA (NRI-CP) must include the detailed information for the subject site, as well as information for land extending off the property 100 feet in all directions.**

**The Limited (NRI-LP) or Intermediate (NRI-IP) must include the detailed information for the area within a proposed LOD, as well as information for land extending outside of the proposed LOD 100 feet in all directions.** A note shall be added to the plan regarding the extent of detailed information on the plan (see General notes in Appendix B).

Even though a site may not visibly contain any environmental features, a stream or wetland located on an adjacent property may require a buffer that extends onto the subject property. It is not always necessary to access an adjacent property to show its environmental features. Certain information may be projected or obtained from other sources.

### 3.1.2 Scale

NRIs shall be prepared at a scale of no less than 1 inch equals 100 feet (i.e., plans can be 1 inch equals 50 feet or 1 inch equals 30 feet). Although not required, it is recommended, when appropriate, to match the intended scale of future associated development plans. The Planning Director or designee reserves the right to request the scale of the approved NRI be revised to an appropriate engineering scale as necessary to be clear and readable.

PDF submissions of the NRI plan must be printable to be consistent with the indicated scale.

### 3.1.3 Standard Symbols

Standard symbols are required to be used on all environmental plans referenced in this manual. These are provided in Appendix—Introduction. The use of standard symbols will reduce review times and provide clarity on detailed plans. Alternate symbols may be used only if they provide the same level of clarity. Alternate symbols are subject to review and approval by the Planning Director or designee.

### 3.1.4 Standard Sheet Layout for Plans

The standard sheet layout is preferred for all NRI plan submittals. In general, the title block, professional certification, general information table, and NRI approval block should be placed in the lower-right-hand corner, so that when the plans are folded this information is easily referenced. The scale of the plan must be listed in the title section of the drawing. Additional site statistics and required plan notes should be provided in the upper-right-hand corner of the sheet.

The vicinity map must always be shown in the upper-right-hand corner. A sample sheet layout can be found in Appendix—Introduction. The NRI plan approval block is located in Appendix B.

A cover sheet, as described in 3.1.1, shall always be provided with any NRI-LP and NRI-IP. For other plans, an overall cover sheet shall be provided for multisheet plans containing three or more sheets. The cover sheet shall provide a key to the areas covered by each sheet. The scale, key, and legend must be provided on each sheet showing the land area or plan view of the application.

## 3.2 GENERAL INFORMATION TABLE

The General Information Table is required to be shown on the plan. The required information must be obtained from the PGAtlas.com web site. The table provides the PGAtlas.com layer category, where each specific layer containing the required information can be found. The table is also provided in Appendix—Introduction.

**Table B-4. General Information Table**

Layer Category	Layer Name	Value
Zone	Zoning (Zone)	
Zone	Aviation Policy Area (APA) <sup>1</sup>	
Administrative	Tax Grid (TMG)	
Administrative	WSSC Grid (Sheet 20)	
Administrative	Planning Area (Plan Area)	
Administrative	Election District (ED)	
Administrative	Councilmanic District (CD)	
Administrative	General Plan 2002 Tier (Tier)	
Administrative	Traffic Analysis Zone (COG) (TAZ-COG)	
Administrative	Traffic Analysis Zone (PG County) (TAZ-PG)	

<sup>1</sup>If the site is within an APA, enter the name of the airport. If the site is not within an APA, enter "N/A."

## 3.3 NRI GENERAL NOTES

The required general notes shall be placed on the plan. The notes shall be legible and follow the exact sequence as provided in the template. The wording shall also be consistent with the template, edited with the information specific to the property. Additional notes, if applicable, shall also be shown on the plan following the required notes.

The template for the required NRI general notes and applicable notes can be found in Appendix B.

## 3.4 SITE STATISTICS

The site statistics are required to be shown on the plan for the existing environmental features outlined in the table below, which is also provided in Appendix B.

**Table B-5. Natural Resources Inventory Site Statistics Table**

Existing Site Statistics	Total <sup>1</sup>
Gross tract area	
100-year floodplain	
Net tract area	
Woodland <sup>2</sup> in the floodplain	
Woodland <sup>2</sup> net tract	
Woodland <sup>2</sup> total	
PMA	
Primary Buffer <sup>3</sup>	
Secondary Buffer <sup>5</sup>	
Regulated streams (linear feet of centerline)	
Riparian (wooded) buffer up to 300 feet wide <sup>4</sup>	

<sup>1</sup>Figures are to be provided in acres rounded to the nearest 1/100th of an acre unless otherwise indicated.

<sup>2</sup>For woodland within the CBCA, this also applies to developed woodland.

<sup>3</sup>Applies to CBCA NRI only.

<sup>4</sup>Acreage of onsite woodland up to 300 feet measured from the stream centerline or from the top of bank on both sides of all regulated streams.

## 3.5 STREAMS AND MINIMUM STREAM BUFFERS

### 3.5.1 Regulated and Non-regulated Streams

All streams (regulated as defined in Subtitle 24 of the County Code and non-regulated such as ephemeral streams, ditches, and concrete channels) must be shown on the NRI plan for the subject property.

### 3.5.2 Buffers for Regulated Streams

The minimum stream buffers must be shown for **regulated streams** on the NRI plan in accordance with Table B-6. The width of a stream buffer is based on the location of its environmental strategy area (ESA) designated by the most recently approved general plan (Plan 2035). Stream buffers are measured on both sides of the stream from the top of the stream bank. When stream banks are less than 10 feet apart, the stream buffer is measured from the centerline of the stream.

**Nonregulated streams** do not require a stream buffer but are required to be shown and identified on the NRI plan. Map B-1 shows a stream and its associated minimum buffer.

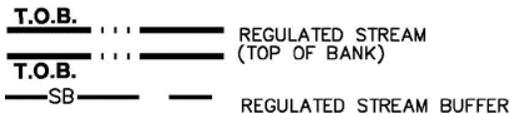
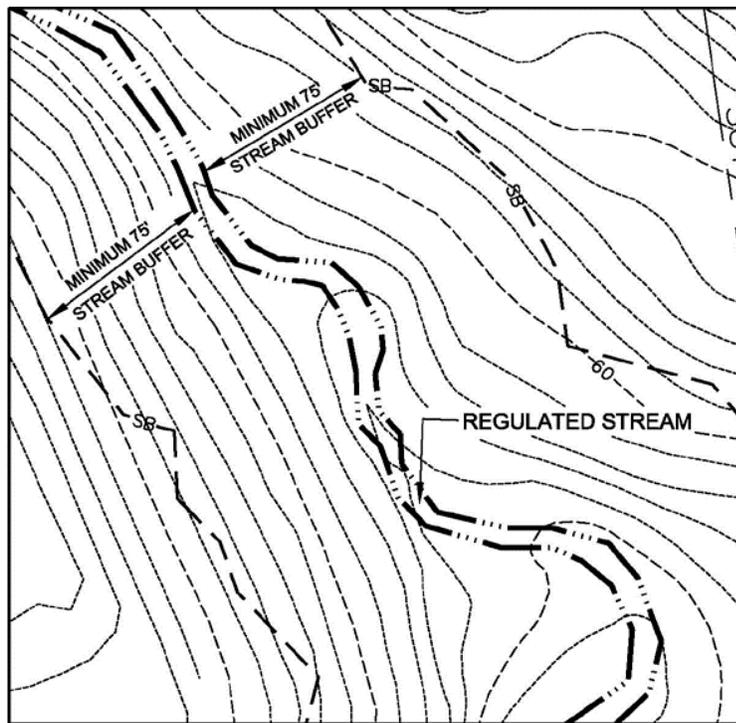
The minimum stream buffer for regulated streams in the CBCA is called the Primary Buffer. This buffer may be expanded and is called the Secondary Buffer. Refer to Section 4 about delineating the Primary and Secondary Buffers in the CBCA.

**Table B-6. Minimum Stream Buffers**

<b>Environmental Strategy Area (ESA)*</b>	<b>Minimum Stream Buffer Width (in feet)</b>
ESA 1	60
ESA 2	75
ESA3	100
ESA4 (CBCA)	100+ (See Subtitle 5B, CBCA Ordinance)

\*As designated in the general plan (Plan 2035) or as modified by a subsequent master or sector plan.

**Map B-1. Regulated Stream and Minimum Stream Buffer (ESA2)**



### 3.5.3 Buffers for Tier II Waters and Impaired Waters with Sediment TMDL

Tier II waters are high-quality waters within the State of Maryland as designated by the Maryland Department of Environment (MDE). These waters, in addition to impaired water bodies with a total maximum daily load (TMDL) allocation for sediment, are afforded special protection under Maryland’s Anti-degradation policy. The catchment area of these waters and water bodies comprise their total drainage areas.

The Tier II/TMDL Buffer is a stream buffer for all Tier II and impaired waters bodies in a Tier II catchment area, expanded up to 150 feet, to provide the necessary buffer protection for the affected stream segments. The required buffer width is based the hydrologic soil group (HSG) of the soil formation in the immediate vicinity of the affected stream segment, and the topography (steepness) of the adjacent land formations, to be repeated for all streams within the catchment area. The Prince George’s Soil Conservation District (PGSCD) reserves the right to limit impacts to the buffer at the time of review of the grading, erosion, and sediment control plan, which could affect development plans.

MDE may also require buffer expansion or additional measures at the time of review depending on the scope and proposed impacts of a specific project site, with similar NRI revision requirements.

The Tier II buffer widths are provided in Table B-7, which are based on the mapped soil type ( formation) in accordance with the USDA NRCS WSS and HSG in accordance with the most current edition of the PGSCD Soil Erosion and Sediment Control—Pond Safety Reference Manual. Note that the buffer widths are measured from the top of the bank on each side for perennial streams, and the centerline for intermittent streams.

**Table B-7. Tier II Watersheds Expanded Buffer Widths**

Expanded Buffer Width (feet) for Perennial and Intermittent Streams		
Hydrologic Soil Group	Slope	
	0-25%	>25%
A/B	100	125
C/D*	125	150

\* All reclaimed sites being proposed for development shall utilize an HSG of "D".

This information shall be included in the required soils table (see Table B-9). When a formation contains two or more HSGs, the higher of the soil groups shall be applied, regardless of percentage, unless a reduced group is approved by PGSCD.

Tier II buffers shall be shown on the NRI plan exclusive of the primary management area or the primary/secondary buffer. To determine if Tier II buffers must be applied, the following should be confirmed:

1. The site is fully or partially within a Tier II catchment area
2. The site contains regulated streams or is within 150 feet of a regulated stream of a Tier II catchment

The data sources index in Appendix—Introduction provides the links to the mapped Tier II catchment areas and TMDL/Impaired waters. If the site meets the above descriptions, the applicant must submit a request for an evaluation to PGSCD, who will provide the necessary confirmation, along with details, of the required buffer. The buffer shall be delineated on the NRI.

## 3.6 WETLANDS DELINEATION, WETLAND BUFFERS, AND WETLAND REPORT

Wetland delineations and wetland reports shall be performed and prepared by a qualified wetland professional who has successfully completed, at minimum, a 40-hour comprehensive wetland delineation program in accordance with state and federal protocols. A brief description of the credentials of the wetland professional shall be provided in the wetland report.

### 3.6.1 Wetland Delineation

All wetlands, including isolated and nonisolated, tidal and nontidal, and wetlands of special state concern must be field delineated and shown on the NRI plan for the subject property and within 100 feet of the area outside of the legal boundaries or LOD. The wetland delineation methodology must be based on the currently accepted USACE delineation methods; however, a jurisdictional determination **cannot** be substituted for this requirement because it will only show those areas that are regulated by federal law and will not necessarily show those areas regulated at the state and local levels. If the jurisdictional determination identifies all existing wetlands, including those regulated at the state and local levels, it may be accepted.

Off-site information can be estimated using available information. A note confirming if the flagging points are based on field or surveyed locations shall be provided on the plan in the section for general NRI notes.

The required minimum 25-foot-wide wetland buffer must be shown on the NRI plan for all wetlands that are not wetlands of special state concern. For wetlands of special state concern, a minimum 100-foot-wide buffer shall be provided. The standard symbols for both wetlands and wetland buffers must be included in the legend. Map B-2 provides an illustration of wetlands and wetland buffers.



**Table B-8. Wetlands of Special State Concern in Prince George's County<sup>1</sup>**

SITE	U.S.G.S. QUAD NAME
Beck Woods	Laurel
Belt Woods	Lanham
Beltsville Airport Bog	Laurel
Beltsville Bottomland Forest	Laurel, Beltsville
Beltsville Forest & Meadow	Laurel
Beltsville Seasonal Ponds	Laurel
Buck Lodge Road Bog	Beltsville
Chews Lake	Bristol
Fort Ravine	Mt. Vernon
Johnson's Gully	Mt. Vernon
Huntington Park Woods	Laurel
Patuxent Maple Swamp	Bowie
Patuxent W.R.C.	Laurel
US I-95 Bog	Beltsville
Southwest Branch Bottomland Forest	Lanham, Upper Marlboro
Suitland Bog	Anacostia
Watkins Regional Park	Lanham
Zekiah Swamp	Brandywine

<sup>1</sup>Compiled from COMAR 26.23.06.01

### 3.7 PERCENT ANNUAL CHANCE (100-YEAR) FLOODPLAIN

The 1-percent annual chance (100-year) floodplain (referred to as floodplain for general purposes of this section) is defined as the area subject to a flood event, which has a 1-percent chance of being equaled or exceeded in any given year. For land development purposes, the location of the 1-percent annual chance (100-year) floodplain in Prince George's County is determined or approved by the Prince George's County Department of Permitting, Inspections and Enforcement (DPIE). Development proposals must adhere to the regulations of the Prince George's County Water Resources Protection and Grading Code, Subtitle 32, Division 4 (Floodplain Ordinance); Section 27-124.01 of the Zoning Ordinance; and Section 24-129 of the Subdivision Ordinance.

The effective floodplain as identified by the Federal Emergency Management Agency (FEMA) cannot be used as the sole source for the delineation on an NRI plan. For any Full, Intermediate, Limited, or CBCA NRI, documentation approved by DPIE that confirms the presence or absence of floodplain must be provided for acceptance of the application. If floodplain is present, details in the letter and supporting documentation about the effective elevations must be provided. For NRI Equivalency Letter (NRI-EL) applications, floodplain confirmation is not required; however, if it is determined at the time of NRI-EL review that floodplain does or may occur on the site, a Full NRI plan application may be required. DPIE may also require a full NRI if floodplain is determined to be present.

In order to determine whether or not floodplain is present on-site, the applicant must first submit a Floodplain Information Request Form to DPIE to determine whether or not there is an approved floodplain study for the subject property. DPIE will assess a specific property to determine whether a County-approved watershed study, an approved private floodplain study, or the effective Flood Insurance Study (FIS) prepared by FEMA governs. DPIE often adds a freeboard (typically one foot) to the approved water surface elevations, whether it is a County-approved study or the applicable FIS. In general, the County-approved watershed studies have higher water surface elevations because they are based on future land use conditions, while the FIS is based on existing land use conditions.

If there is an approved floodplain study, a letter from DPIE must be provided before it can be used to delineate the 1-percent annual chance (100-year) floodplain on the NRI. If there is no approved floodplain study for a site, an approved floodplain study must be completed by an engineer or the Prince George's County Department of Environment (DoE) and be approved by DPIE prior to acceptance of any NRI plan application. If a floodplain easement has been established on a property, verification from DPIE that the boundaries of the easement are still valid for the area may be required.

To summarize, an approved floodplain request form from DPIE must be provided before the required floodplain information and NRI plan can be accepted for review. The floodplain source for the NRI can be one of the following, but must be approved by DPIE:

1. A floodplain easement less than 10 years old
2. A watershed study or effective FIS, whichever has the higher water surface elevation
3. An existing floodplain study
4. A new floodplain study prepared by a licensed engineer or DoE

The study prepared by the engineer or DoE must be approved by DPIE prior to Environmental Planning Section approval of the NRI.

If no area of the 1-percent annual chance (100-year) floodplain is shown on the NRI, then documentation regarding the absence of floodplain must be obtained from DPIE stating that there is no 1-percent annual chance (100-year) floodplain existing on-site.

A link to the Floodplain Information Request Form is provided on the Data Sources sheet in Appendix—Introduction.

### 3.8 SOILS AND UNSAFE LANDS

Mapped soils and a table must be included on the plan. This table shall include detailed information for all soil types found on the subject property. This table must include the map unit symbol, map unit name and description, k-factor, hydric rating, hydrologic soil group, and drainage class as shown in Table B-9.

The source of the mapped name, symbol, k-factor, hydric rating, and drainage class shall be obtained from the most current information available from the USDA NRCS WSS. A dated custom soils resource report for the subject site, generated from the USDA NRCS WSS, shall be submitted with the application. Guidance for using the WSS and preparation of the Custom Soil Survey Report can be found on the USDA NRCS WSS web site or obtained from PGSCD. A link to the Getting Started instructions is provided on the list of Data Sources in Appendix—Introduction.

The source of the HSG, and percentage of each component of the soil type, shall be obtained from the most current edition of the PGSD Soil Erosion and Sediment Control—Pond Safety Reference Manual. For soil complexes, the hydrologic group of each soil type shall be provided, but the highest of each type shall designate the whole soil type (see Table B-9).

**Table B-9. Sample Soils Table**

Map Unit Symbol	Map Unit Name	Soil Types-Percentage-Group	K-Factor (Whole Soil)	Hydric Rating	Hydrologic Soil Group	Drainage Class
AaB	Adelphia silt loam, 2-5% slopes	Adelphi-75-C	0.37	Unknown Hydric	C	Moderately well drained
CcC	Christiana-Downer complex, 5-10% slopes	Christiana-50-C Downer-35-B	0.49		C	Moderately well drained
CdC	Christiana-Downer-Urban Land complex, 5-15% slopes	Christiana-30-C Downer-25-B Urban Land-20-D	--	Not Hydric	D	--
GhC	Grosstown-Hoghole complex, 5-10% slopes	Grosstown-50-B Hoghole-45-A	0.24	Not Hydric	B	Well-drained
SrA	Shrewsbury Loam 0-2% slopes	Shrewsbury--75 C/D	0.24	Hydric	D	Poorly-drained

If the site, or portions of the site, have been mined in the past, these areas shall be delineated on the NRI plan with a note identifying them. The acreages of these mined areas shall be included in the NRI site statistics table. The acreages shall be rounded to the nearest 1/100th of an acre. A similar note must also be added on the plan sheet.

### 3.8.1 Marlboro Clay and Christiana Complex

Clay formations can be difficult to penetrate and have characteristics that make it unstable for construction. It shrinks and swells at a greater rate than the soils around it, causing construction materials that come into contact with it to shift. This shrinking and swelling can also result in slope failures that can cause damage to property and endanger people. Because of these characteristics, it is important to determine early in the process if Marlboro Clay or Christiana Complex are present on a site.

Using PGAtlas.com or other available sources, the presence or absence of Marlboro Clays and Christiana Complex shall be identified. The conceptual areas can be shown consistent with PGAtlas.com. The identified clays shall be stated in the standard NRI notes and included on the plan. If the presence of clay areas is known or questionable before or during the development review process, the project will be referred to DPIE to determine if a geotechnical report in accordance with DPIE's *Geotechnical Guidelines for Soil Investigations and Reports for Site/Road Grading Permits in or near Over-consolidated Clays* is required.

The report may be required as early as at the time of conceptual site plan or comprehensive design plan review up until prior to the issuance of any permits, depending on the type of development applications required for a certain project.

The report shall be prepared and submitted to DPIE for approval.

### 3.9 TOPOGRAPHY AND STEEP SLOPES

At the time of preparation of the NRI, topography must be provided on the NRI plan. While field run topography is the preferred source, M-NCPPC topography will be accepted as a source for the NRI review. The contour intervals must be no more than two feet. All slopes equal to, or greater than, 15 percent are classified as steep slopes and must be shown on the NRI plan. The standard symbol for steep slopes must be used on the plan and included in the legend.

The formula for calculating slopes is as follows:

Where V= the vertical distance between contour intervals  
(Maximum interval allowed = 2 feet)

Where H = the horizontal distance between contours

$V/H$  = percent slope or 2-foot contour/number of feet horizontal distance = percent slope

### 3.10 PRIMARY MANAGEMENT AREA

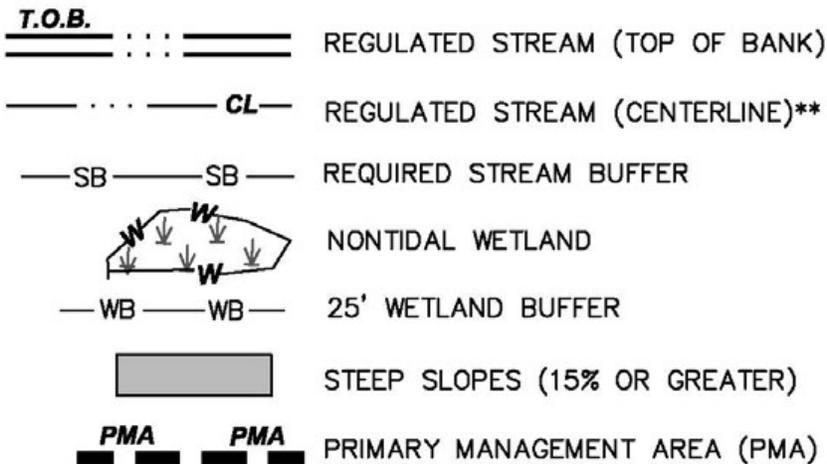
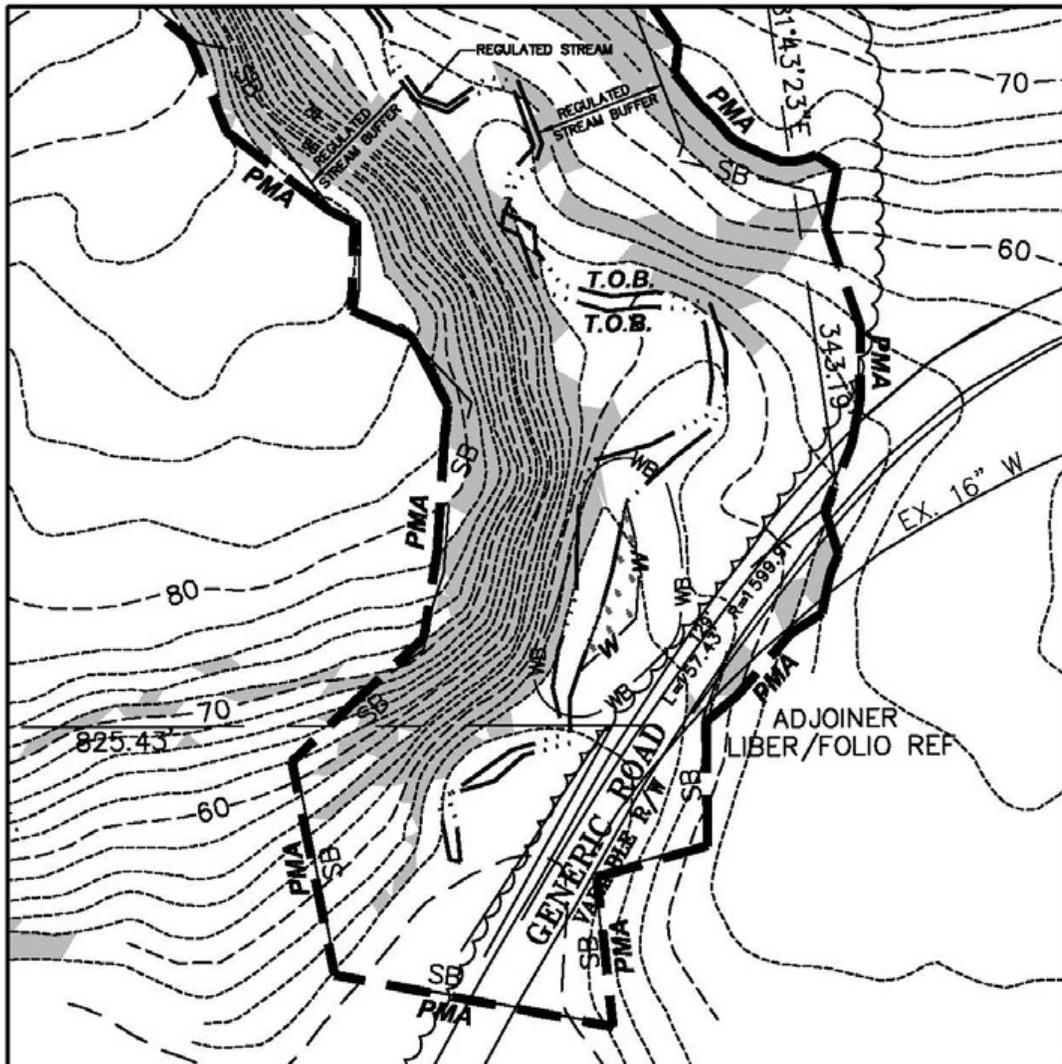
The Primary Management Area (PMA) is a vegetated buffer established or preserved along all regulated streams outside the CBCA overlay zones. If the PMA is not vegetated at the time of plan review, the planting of trees in this area is a high priority for woodland conservation.

At a minimum, the PMA includes:

1. All regulated streams and their associated stream buffers.
2. The 100-year floodplain as defined by Section 27-124.01.
3. All wetlands and associated wetland buffers that are adjacent to the regulated stream, stream buffer, or the 100-year floodplain.
4. All areas having natural slopes of 15 percent or greater adjacent to the regulated stream or stream buffer, the 100-year floodplain, or adjacent wetlands or wetland buffers.
5. Adjacent critical habitat areas.

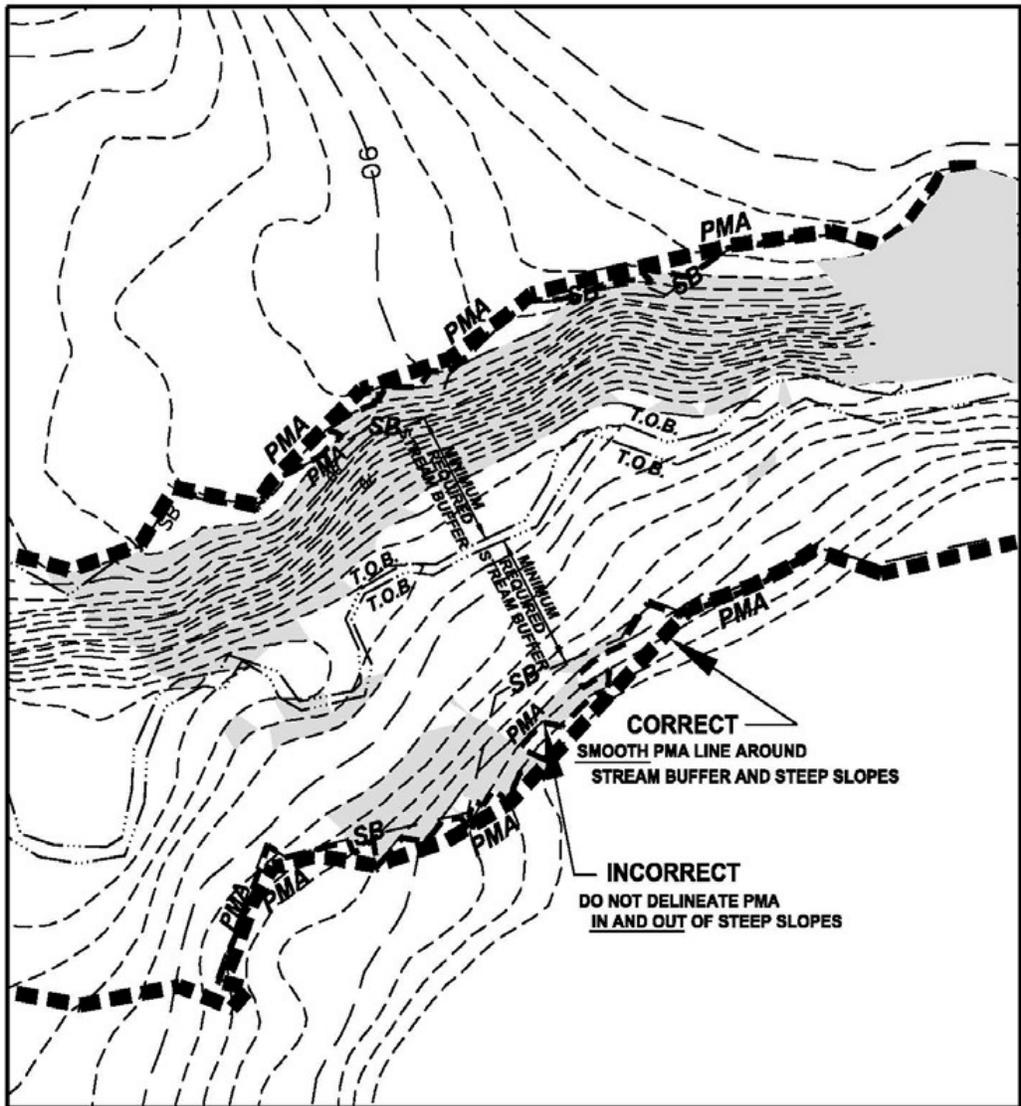
If present, the PMA is required to be shown on the Full, Intermediate, and Limited NRI plan using the standard symbol as shown in the standardized list of symbols. The PMA is not required to be shown on land areas within the CBCA. The symbol must be included in the legend. Map B-3 shows the elements of a PMA and its overall delineation. Map B-4 illustrates the correct and incorrect methods for delineating the PMA.

Map B-3. Delineation of Primary Management Area



\*\* WHEN STREAM BANKS ARE 10 FEET OR LESS APART, SHOW ONLY THE CENTERLINE OF THE STREAM AND MEASURE THE STREAM BUFFER FROM THE CENTERLINE.

**Map B-4. Correct Method for Delineation of Primary Management Area**



<b>T.O.B.</b>		REGULATED STREAM (TOP OF BANK)
<b>T.O.B.</b>		MINIMUM REQUIRED STREAM BUFFER
		STEEP SLOPES (15% OR GREATER)
<b>PMA</b>		CORRECT DELINEATION OF PMA
		INCORRECT DELINEATION OF PMA

**NOTE: SYMBOLS SHOWN ARE EXAGGERATED FOR ILLUSTRATIVE PURPOSES ONLY.  
REFER TO THE STANDARD SYMBOLS FOR CORRECT LABELING.**

### 3.11 FOREST STAND DELINEATION

A forest stand delineation (FSD) is required as part of the NRI and shall be prepared in conformance with Part B, Section 5.0, Forest Stand Delineation. All existing forest cover and tree cover, as determined from fieldwork and the most current available aerial photos, shall be shown on the NRI plan. These areas shall be designated with a graphic symbol that delineates the woody vegetation beginning with the extent of canopy for those areas that are considered regulated woodlands. A symbol for hedgerows and shrub/scrub areas is also required to be shown.

For CBCA NRIs, the FSD must also identify and provide the acreage of the on-site developed woodland as defined in Subtitle 5B. The applicant should consult with Environmental Planning Division staff to determine if a simplified forest stand delineation is acceptable.

**Due to the detailed nature of the FSD requirements, the instructions and requirements for preparing the FSD have been separately placed in Section 5.0.**

### 3.12 FOREST INTERIOR DWELLING SPECIES (FIDS HABITAT AND BUFFER)

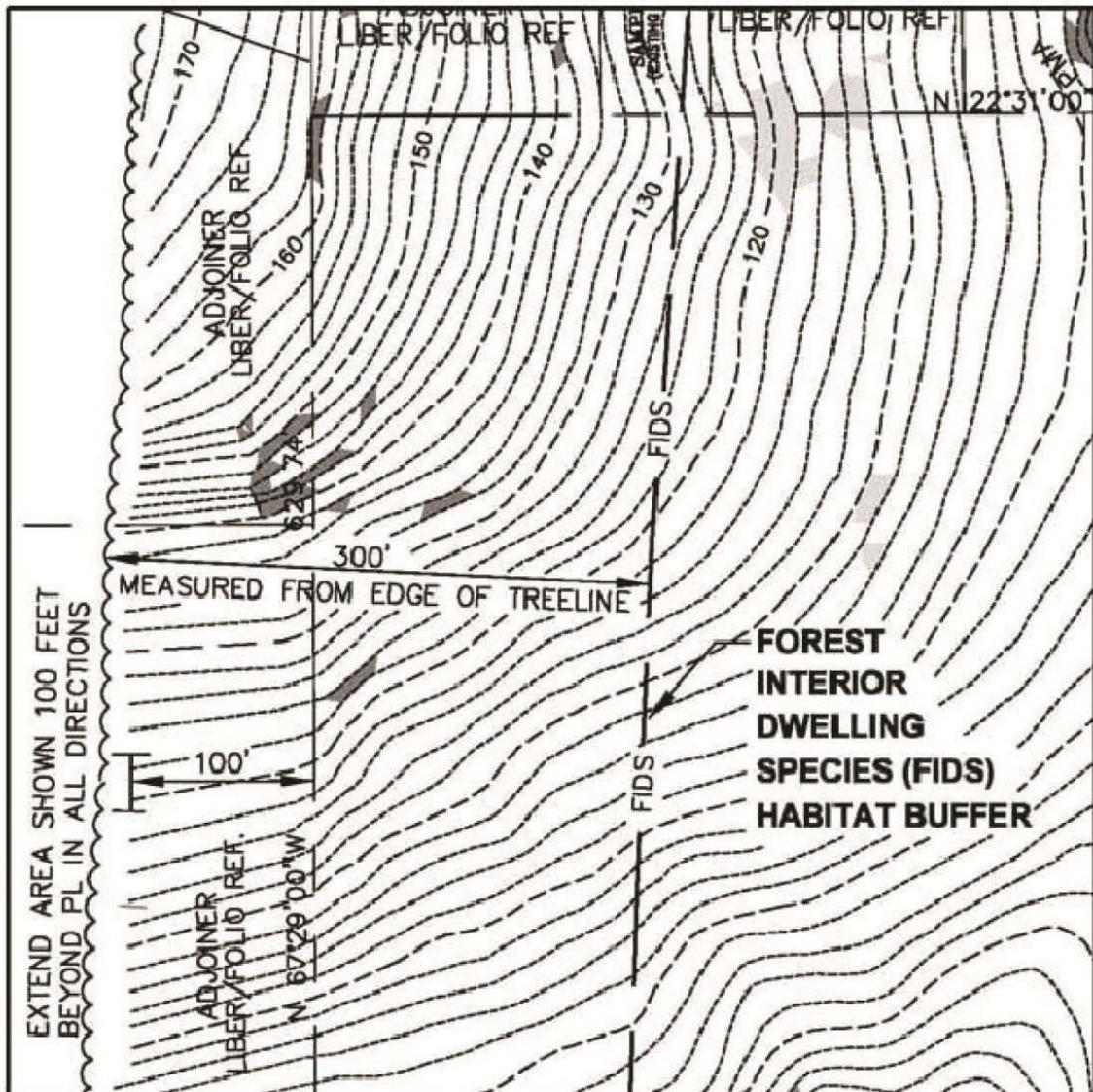
Forest interior dwelling species (FIDS) habitat is a woodland area of sufficient size to be favorable to the breeding of certain interior-dwelling bird species, which are assumed to be present if the majority of the forest is dominated by pole-sized or larger trees (five inches or greater diameter at breast height) or has a closed canopy. These areas must meet one of the following conditions:

- a. The woodlands are a minimum of 50 acres in size and contain at least 10 acres of forest interior habitat. Forest interior habitat is forest that is greater than 300 feet from the nearest forest edge.
- b. The woodlands are riparian forest at least 50 acres in size and have a minimum average width of 300 feet and are located within the watershed of a regulated stream.

Although a site may contain a limited acreage of woodland, it may still be considered FIDS habitat or FIDS buffer if it is contiguous with a larger tract of off-site woodlands that, when reviewed together, meet the above criteria.

To delineate the FIDS buffer, start at the existing tree line and measure into the forest 300 feet. The area within this 300-foot-wide area should be labeled FIDS buffer and the standard symbol should be included in the legend. The FIDS habitat is located in forests more than 300 feet from the forest edge and meets one of the two conditions listed above. FIDS buffers and habitats are areas where forest fragmentation should be avoided in future land designs.

Map B-5. Forest Interior Dwelling Species (FIDS) Habitat Buffer



-  EXISTING TREELINE
-  FOREST INTERIOR DWELLING SPECIES HABITAT BUFFER  
(MEASURED 300 FEET FROM EDGE OF EXISTING TREELINE)

### 3.13 RARE, THREATENED, OR ENDANGERED SPECIES

Locations of flora and fauna that are designated as rare, threatened, or endangered (RTE); in need of conservation; or as a watch-list species (as determined by DNR Natural Heritage Service Headquarters) must be shown on the NRI plan. The applicant should first review the DNR Natural Heritage Program Sensitive Species Project Review Area Map available on the DNR website ([mdmerlin.net](http://mdmerlin.net)).

The list of rare, threatened and endangered species and information regarding these species can be accessed by going to the link provided in the list of data sources in Appendix—Introduction. Well ahead of the NRI plan submittal, the applicant should send a vicinity map and a letter briefly explaining the project and requesting the identification of significant species to the following address:

DNR Natural Heritage Program  
Attention: Environmental Review Coordinator  
Tawes State Office Building  
580 Taylor Avenue, E-1  
Annapolis, MD 21401

DNR will check their database for known occurrences of significant species or habitats and will send a response letter. This request takes a few weeks to process and should be one of the first steps in the preparation of the NRI application.

### 3.14 ARCHEOLOGICAL AND HISTORIC RESOURCES AND SITES

Known historic resources, cemeteries, archeological sites, existing buildings, and foundations, as well as paving and man-made landforms such as terracing, must be shown on the NRI plan. The applicant may obtain information from PGAtlas.com on the locations of Prince George's County historic sites and historic resources and on National Register properties. This information must be included in the NRI General Notes (see Appendix B), and the locations of known resources and sites must be shown on the plan. Applicants may also wish to consult the Maryland Historical Trust's Medusa (see data sources in Appendix—Introduction) for information on documented properties that do not appear on PGAtlas.com.

The applicant is encouraged to contact the Planning Department's Historic Preservation staff to verify the presence or absence of historically significant resources and sites on or near the property during the NRI preparation process. This additional information may be required during subsequent review and approval processes, including the preliminary plan review and approval process, and may pose limitations on the development of the site.

### 3.15 EASEMENTS

There are several types of easements or buffers that can exist on a property that may affect the development on a site. At a minimum, the following easements must be shown on an NRI plan if they exist:

- Cemetery easements
- Conservation easements (local and Maryland Environmental Trust)
- Floodplain easements
- Water, sewer, and utility easements
- Drainage easements
- Storm drain easements
- Woodland conservation easements
- Historic easements (local and Maryland Historic Trust)
- Agricultural easements (HARPP and MALPH)
- Environmental setting ( for historic sites)

- Landscape buffer easements
- Landscape easements
- Scenic easements
- Road and access easements
- Master Plan of Transportation right-of-way

Other types of easements may also be required to be shown on the NRI if applicable to development of the site. Easement information for a site may generally be obtained from the most current record plat or deeds, but may not include any easements that may have been recorded separately in the land records after recordation or sale. These are also generally obtainable with an up-to-date title search.

### 3.16 SCENIC RESOURCE POLICY AREAS

Scenic Resource Policy Areas (SRPA) are designated areas established to protect significant scenic, cultural, and historic resources within Prince George's County. SRPAs are identified through the comprehensive plan, area master plan, or functional master plan process. Properties located in a SRPA are subject to applicable design standards at time of permit review. Currently there are two designated SRPAs within the County:

- Mount Vernon Viewshed
- Lower Patuxent Scenic Byway

To determine if a site is within an SRPA, the applicant may obtain information from PGAtlas.com. This information must be included in the general notes.

### 3.17 NOISE

Noise is an unwanted or excessive sound that may come from various sources.

Traffic-generated noise from master-planned roadways designated as arterial or higher may affect certain proposed uses of a site. Designations of roadway classifications are available on PGAtlas.com. A note must be included on the plan indicating if the site is adjacent to, or in the vicinity of, any roadways designated as arterial or higher.

Joint Base Andrews (JBA) is a local noise generator that may also affect the proposed use of a site. If a site lies within the noise contours as found in the most recently approved noise contours for JBA, then a note must be added to the plan that includes the noise contour within which the property lies.

Noise information must be included in the standard NRI notes, including the distance of the site from known noise generators located in the vicinity of the site. Other noise generators might include concrete recycling facilities, industrial uses with outdoor equipment, and gravel mining.

# 4.0 CBCA NRI PLAN REQUIREMENTS

## 4.1 CHESAPEAKE BAY CRITICAL AREA

Land within the CBCA is subject to Subtitle 5B of the County Code, which requires the delineation of environmental features specific to the CBCA, and contains regulations for the protection of those specific environmental features. Like all other sites, land area within the CBCA is required to have an NRI for all development projects that require a grading permit.

It should be noted that some sites are only partially located within the CBCA. For these sites, one NRI plan can be prepared. The area within the CBCA must conform to the NRI requirements for this section and Section 3 (Part B) where applicable, while the area outside of the CBCA must conform to the NRI requirements of Section 3 (Part B) only.

Land within the CBCA is within one of the following CBCA overlay zones:

- Intense Development Overlay (I-D-O)
- Limited Development Overlay (L-D-O)
- Resource Conservation Overlay (R-C-O)

While the regulatory requirements for these overlay zones may vary, all CBCA NRI plans must provide the information listed in Section 3 (Part B), with the exception of the Primary Management Area (PMA) and the stream buffers of ESAs 1-3, because lands within the CBCA are not subject to those buffer regulations defined in Subtitle 24, but are subject to the buffers described in Section 5B-121.

In addition to the specified required elements of Section 3, the CBCA NRI plan is required to show the following:

- a. Mean high-water line
- b. Critical area buffer, both the primary buffer and secondary buffer if present
- c. Developed woodlands
- d. Subtitle 5B CBCA Lot Coverage Table
- e. Subtitle 27 Zoning Net Lot Coverage Table

## 4.2 MEAN HIGH WATER LINE

The local and state codes define the mean high-water line (also referred to as mean high-tide line) as the average level of high tide at a given location for all tidal waters, regulated streams, and tidal wetlands. For sites that contain, or are within the vicinity of, tidal waters, streams, or wetlands, the mean high-water line must be delineated on the NRI plan.

For open water, the mean high-water line is sometimes easy to determine when there is a bulkhead or a vertical bank at the high tide line. In the case of a typical shoreline, the mean high-water line is sometimes identified using the rack line. A rack line is an area along the tidal shore where uprooted bay grasses, sticks, shells, and other debris are deposited by the tide. This is generally a reasonable indicator of the mean high-water line. For shorelines that are protected with a rock revetment, water stains, algae, or barnacles on the rocks are usually good indicators of the location of mean high-water line. (The Green Book for the Buffer, September 2012).

For tidal wetlands, the mean high-water line is located at the landward edge of the delineated wetland (see Section 3 regarding wetland delineation).

For regulated streams, the mean high-water line is located at the edge of each bank of the stream channel.

The location of the mean high-water line must be delineated on the NRI plan. The symbol for the mean high-water line shall be clearly shown and identified in the legend using the standard symbol (see Appendix—Introduction for a list of standard symbols).

## 4.3 CRITICAL AREA BUFFER

The Critical Area Buffer is a protective buffer that is measured landward from the mean high-water line for tidal waters, the edge of the bank of a tributary stream, or the edge of a tidal wetland. The critical area buffer consists of a primary buffer which may be expanded by a secondary buffer as described below.

### 4.3.1 Primary Buffer

The primary buffer is the area of land 100 feet from the mean water line of tidal waters, the edge of the bank of tributary streams, and the landward extent of tidal wetlands.

If a subdivision or a change in the use is proposed in the Resource Conservation Overlay (R-C-O) Zone of the CBCA, the primary buffer is 200 feet from all tidal waterways and tidal wetlands. For regulated streams in the R-C-O, the minimum primary buffer is 100 feet.

### 4.3.2 Secondary Buffer

The secondary buffer is an expansion of the primary buffer and consists of environmental features that are contiguous with the primary buffer. The Secondary buffer includes any of the following features when they are present and contiguous with the primary buffer:

- A steep slope at a rate of four feet for every one percent of slope, or the entire steep slope to the top of the slope, whichever is greater
- Any nontidal wetlands to the upland boundary of the nontidal wetland
- The 100-foot buffer that is associated with a nontidal wetland of special state concern as stated in COMAR § 26.23.06.01
- The 100-year floodplain
- The landward edge of the hydric soils or highly erodible soils, up to a maximum of 300 feet total (including the 100-foot Primary Buffer)

## 4.4 DEVELOPED WOODLANDS

In addition to the delineation of woodlands required on an NRI, the CBCA NRI must also identify and delineate all developed woodlands. Developed woodlands are areas of woodland and other vegetation that do not meet the definition of woodlands but contain trees and other natural vegetation. The canopy of individual trees and areas such as scrub-shrub and invasives, which do not meet the definition of woodland, qualify as developed woodlands and are subject to the requirements of Subtitle 5B.

Because developed woodlands are treated the same as other regulated woodlands with respect to the requirements of Subtitle 5B, the area of developed woodlands must be delineated on the NRI. The acreage must be provided separately and in combination with the other regulated woodlands on the site statistics table.

A simplified forest stand delineation (FSD) must be provided on the plan for all areas of developed woodlands on the site. If a detailed FSD is required for the presence of woodlands, the forest stand information for developed woodlands may be incorporated into the overall FSD report.

The developed woodland shall be identified on the plan by a tree line symbol that is distinct from the standard symbol for existing woodlands. See Appendix—Introduction for a list of Standard Symbols.

## 4.5 EXISTING LOT COVERAGE

The CBCA NRI is required to provide the existing lot coverage calculations, which are used in the review of conservation plans. There are two types of lot coverage that must be provided.

Each structure that meets lot coverage listed in the table below must be identified and labeled on the plan with the structure name and lot coverage area.

#### 4.5.1 Chesapeake Bay Critical Area Lot Coverage

The Chesapeake Bay Critical Area Ordinance (Subtitle 5B) defines lot coverage in the CBCA as “the percentage of a gross area of a lot or parcel that is existing or proposed to be (1) occupied by a structure, accessory structure, parking area, driveway, walkway, impermeable deck or stairway, or roadway; or (2) covered with, gravel, stone, shell, impermeable decking, pavers, permeable pavement, or any man made material. Lot coverage in the Critical Area does not include (1) a fence or wall that is less than one-foot in width that has not been constructed with a footer; (2) a walkway in the Primary or Secondary Buffer, including a stairway that provides direct access to a community or private pier; (3) a wood mulch pathway, or (4) a deck with gaps to allow water to pass freely.”

The existing lot coverage information is used to evaluate the final proposed lot coverage in comparison with the allowable lot coverage on development applications for land within the CBCA. The allowable lot coverage is based on the designated CBCA Overlay Zone of the subject site and can be found in Subtitle 5B of the County Code.

The following table is a sample of the CBCA existing lot coverage table to be provided on all NRI plans for land within the CBCA. A copy of this table is in Appendix B, but because this table contains formulas to calculate the values, this table should be obtained from the EPS web page at [www.pgplanning.org](http://www.pgplanning.org).

**Table B-10. Sample Subtitle 5B (CBCA) Existing Lot Coverage Table**

<b>Existing Lot Coverage Chesapeake Bay Critical Area (CBCA)</b>			
<b>Area Calculations</b>			
CBCA Overlay Zone		LDO	
Enter gross lot size in square feet (SF):		25,042	
Enter % CBCA lot coverage allowed:		15%	
Total SF CBCA lot coverage allowed:		3,756	
<b>CBCA Lot Coverage by Category</b>	<b>Surface Material<sup>1</sup></b>	<b>Percent Impervious<sup>2</sup></b>	<b>Existing Lot Coverage Area<sup>3</sup> (SF)</b>
Dwelling	Asphalt shingles	100%	3,000
Accessory Structures	Pool	100%	0
Sidewalk	Concrete	100%	70
Porches	asphalt shingles	100%	50
Driveway	Concrete/ gravel	100%	1,325
Patio or Pavers	Stone steps to water (in buffer)	0%	181
Deck	Wood with gaps	0%	1150
Other Surfaces	Rip rap	0%	56
<b>Total Existing CBCA Lot Coverage =</b>			<b>4,445</b>
<b>CBCA Percent Impervious Surface =</b>			<b>17.8%</b>

<sup>1</sup>All existing or proposed surfaces that contribute to lot coverage.

<sup>2</sup>All surfaces are 100% impervious to water (except decks that are constructed with gaps between the wood to allow water to permeate are considered 0% impermeable).

<sup>3</sup>Enter lot coverage in square feet for each category (enter all numbers as positive numbers).

## 4.5.2 Zoning Ordinance Net Lot Coverage

The Zoning Ordinance (Subtitle 27) defines lot coverage as “Buildings (including covered porches) and areas for vehicular access and parking of vehicles.”

The existing net lot coverage is used to evaluate the final lot coverage in comparison with the allowable lot coverage on development applications for land within the CBCA. The allowable lot coverage based on the underlying zone can be found in Subtitle 27 of the County Code. Note, certain structures that are required to be documented as coverage in the CBCA may not apply when calculating net lot coverage as defined by Subtitle 27. As such, in some cases the net lot coverage area will differ from the CBCA lot coverage area.

The following table is a sample of the Subtitle 27 existing lot coverage table to be provided on all NRI plans for land within the CBCA. A copy of this table is in Appendix B, but because this table contains formulas to calculate the values, this table should be obtained from the EPS web page at [www.pgplanning.org](http://www.pgplanning.org).

**Table B-11. Sample Subtitle 27 (Zoning) Existing Net Lot Coverage Table**

<b>Zoning Ordinance (Z.O.) Net Lot Coverage Calculations</b>	
<b>Area Calculations</b>	
Enter Zone	R-R
Enter net lot area in square feet (SF)	25,042
Enter % of Z.O. lot coverage allowed	15%
Total SF Z.O. lot coverage allowed	3,756
<b>Lot Coverage by Category</b>	<b>Existing Lot Coverage (SF)</b>
Roofed Structures <sup>1</sup>	3000
Driveway <sup>2</sup>	1,325
<b>Total Existing Z.O. Lot Coverage =</b>	<b>4,325</b>
<b>Total Percentage Z.O. Lot Coverage =</b>	<b>17.3%</b>

<sup>1</sup>Includes dwellings, accessory structures, covered porches, covered decks, covered stoops and covered patios.

<sup>2</sup>Includes any area used for vehicle parking and vehicle access to the dwelling regardless of surface.

## 5.0 FOREST STAND DELINEATION

A forest stand delineation (FSD) is defined as a detailed accounting of woody vegetation and existing site conditions, prepared in plan and document form. The purpose of an FSD is to provide an accurate depiction of the forest species, composition, age, condition, location, and acreage existing on a property prior to disturbance. FSDs are used to determine the most suitable areas for both development and woodland and wildlife habitat conservation. FSDs are required to be prepared by a qualified professional and must provide all the information contained in the FSD checklists and include the standard FSD notes as provided in Appendix B. Refer to Table I-3 for an overview of when an FSD is required.

Prior to the design team beginning their work on a project, the FSD should be analyzed to determine what existing resources on-site should be preserved and how the proposed development might affect the resources that remain. The FSD, combined with the NRI, should be used as the base sheet upon which the design work commences.

FSDs are reviewed as part of the review of the associated application and are not reviewed separately. Comments are provided through the coordinating reviewer and revised plans are submitted through the appropriate section. The County Code requirements with respect to FSDs can be found in Subtitle 25-123.

## 5.1 TYPES OF FOREST STAND DELINEATION

The FSD must cover the legal boundaries of a lot or parcel, or combination of lots and parcels, that are to be the subject of the proposed application. The FSD must be prepared at the same scale as the associated plans. There are three types of FSDs described below that are prepared in association with different types of development applications. A site visit by the qualified professional is required for all types of FSDs. The following criteria should be used to determine which FSD type is best suited for the subject application.

### 5.1.1 Simplified Forest Stand Delineation

A simplified FSD may be submitted when the woodland disturbed will be less than 5,000 square feet or:

- A standard or numbered letter of exemption is in the application process.
- A basic plan for the purpose of rezoning a property is being considered.
- An NRI that has no regulated environmental features and limited areas of woodland on-site is being submitted.

The collection of data samples is not required; however, a brief narrative description of the woodlands and a calculation of the amount of woodlands on the site must be provided on the plan.

A separate text document is not required; however, a site visit must be conducted in order to verify information collected from various sources. The plan must accurately locate all existing woodlands on the lot(s) or parcel(s). The submittal requirements must include the plan elements outlined in this section and all of the information contained in the simplified FSD checklist provided in Appendix B.

### 5.1.2 Intermediate Forest Stand Delineation

An intermediate FSD may be submitted when:

- The site does not have an existing tree conservation plan.
- The proposed development will disturb more than 5,000 square feet of woodlands but less than ten percent of the property.
- The site will be established as a woodland conservation bank.

Intermediate FSDs may be submitted as part of an NRI, as determined by the Planning Director or designee per Section 25-123(a)(4)(B).

Intermediate FSDs shall include a plan showing the location of all woodlands on the property and the associated text per the intermediate FSD checklist provided in Appendix B. Intermediate FSDs must contain all of the information required for a simplified FSD for the entire site and text and sampling data for the areas proposed for development. The text may be provided in a separate document, or if space allows, the required information may be placed on the plan itself.

This option is used mainly for permit applications containing a single-family home or other low-intensity uses. An intermediate FSD provides the same information as that required for a detailed FSD, except that the sampling is limited to the portion of the property that will be disturbed and an additional 200 feet beyond the conceptual limit of disturbance. The FSD for the remainder of the property may be prepared as a simplified FSD. The use of the intermediate FSD option is at the discretion of the Planning Director or designee.

### 5.1.3 Detailed Forest Stand Delineation

A detailed FSD shall be submitted when the site or application does not qualify for a simplified or intermediate FSD. A detailed FSD shall include a plan showing all the required information and shall be prepared using the methodology outlined below. A detailed FSD checklist is provided in Appendix B.

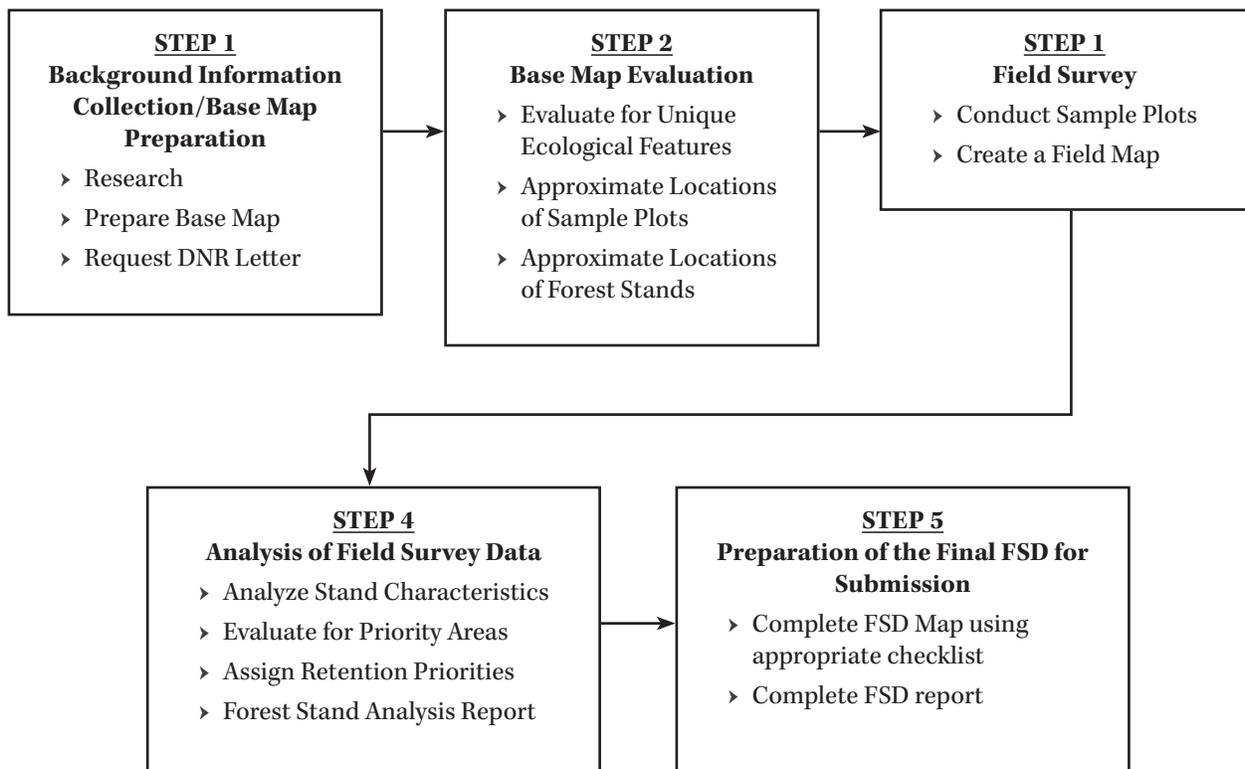
A detailed FSD is required when:

- An NRI will be prepared.
- The site is greater than 40,000 square feet in size with greater than 10,000 square feet of woodlands and does not meet the eligibility for an intermediate FSD.

## 5.2 FOREST STAND DELINEATION PREPARATION METHODOLOGY

The following steps outline the sequential procedure for gathering background information about a site, preparing a base map, evaluating the base map, performing a field evaluation, analyzing the results of the field data, and preparing the final FSD map and report.

**Figure B-1. FOREST STAND DELINEATION PREPARATION STEPS**



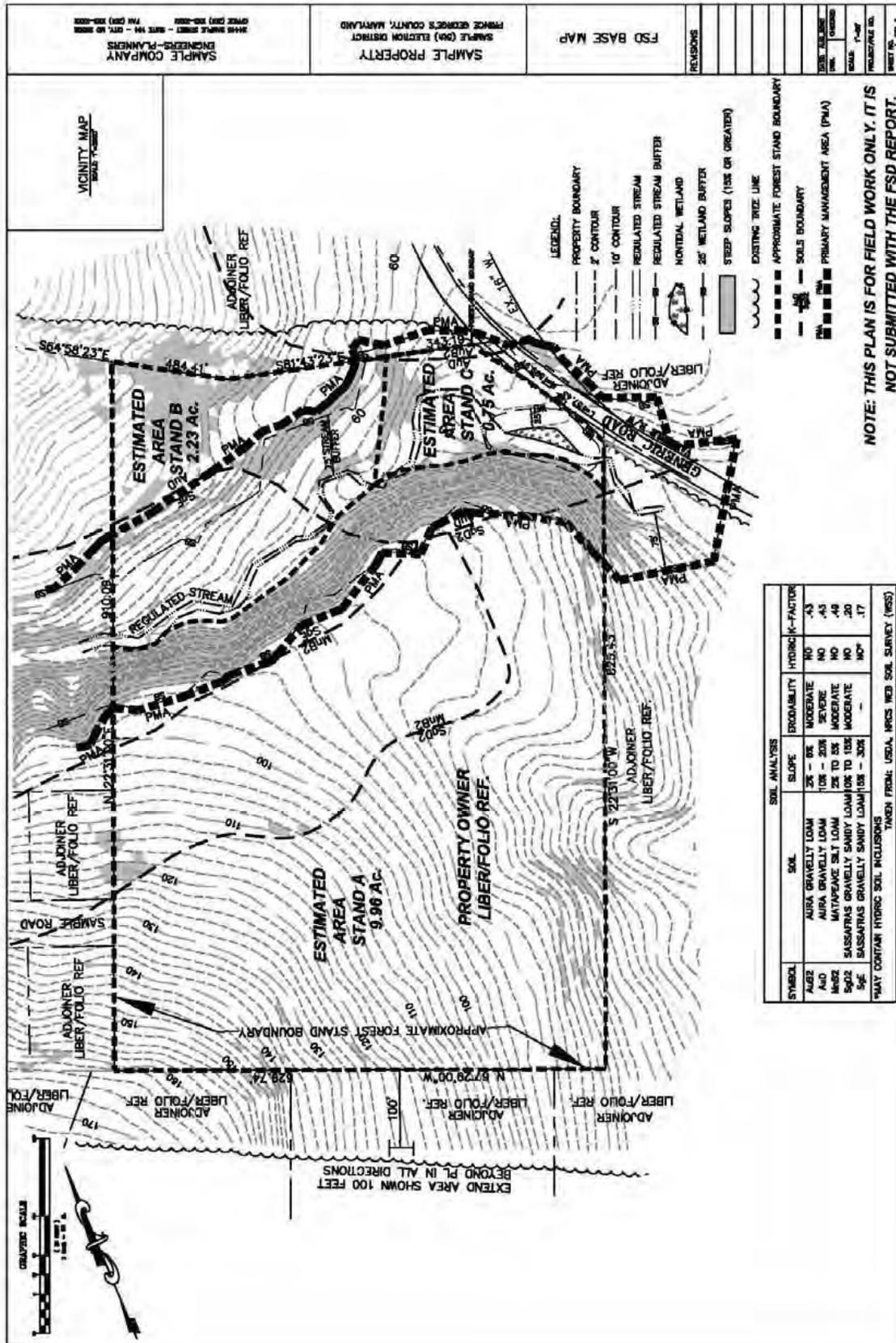
## 5.2.1 Step 1: Background Information Collection/Base Map Preparation

The base map shall be prepared at the same scale as the proposed development plan and shall sufficiently indicate all of the required features where applicable. The base map is prepared using the data sources found in the introduction to the technical manual. The base map is used to make a preliminary determination of the location of the forest stands on a site before doing any field verification or sampling.

A base map may be used to satisfy the requirements of a simplified FSD. The base map shall include the following (See Map B-6 for a sample base map.):

- Property boundaries
- Topography
- North arrow
- Regulated streams and their required buffers
- 100-year floodplains
- Nontidal or tidal wetlands and their required buffers
- Steep slopes
- All features such as roads, structures, and disposal areas
- Critical habitat areas
- Soils (locations of mapping units within each soil series shown on the plan and further identified with k-factor, hydric rating, hydrologic soil group, drainage class, and other classifications useful in determining location of forest stands)
- Estimated forest stand boundaries (prefield sampling)

Map B-6. Sample Base Map



At the time of base map preparation, a letter should be sent to DNR requesting the status of rare, threatened, and endangered species. After DNR researches the subject property, a letter of determination is sent to the property owner or authorized representative. This letter of determination shall be included with the FSD report.

## 5.2.2 Step 2: Base Map Evaluation

Before going out to the field, the base map is used to prepare for the field survey. Aerial photographs, both current and historic, are useful tools in the evaluation of the base map. Historic aerials reveal the past uses of the property. For example, an abandoned farm field that is now partially wooded would be expected to have pioneer stage successional species composition, while a site whose historic aerials reveal that it has long been wooded would be expected to have a mature forest. Areas of unique ecological character should be noted on the plan before going out to the field, so that sample point locations can be easily selected to ensure that all existing forest stands are sampled. The unique ecological features include:

- Slope aspect (north vs. south facing slopes)
- Elevation (upland vs. bottomland)
- Soils (hydric or highly erodible)
- Tree species composition and age (rough estimate from aerial photos)

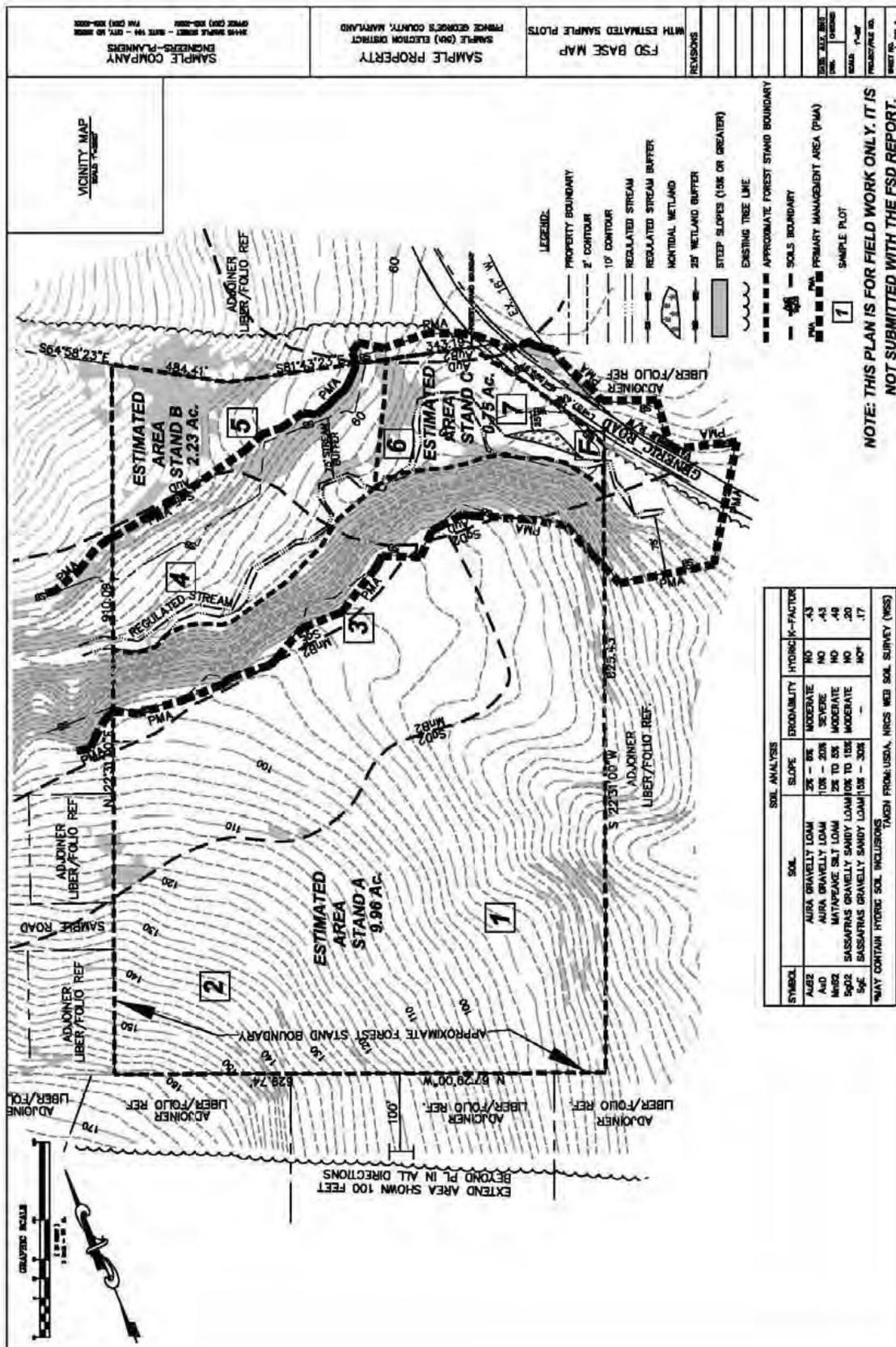
These characteristics can be used to determine probable site conditions and give an approximation of where forest stand boundaries may exist. The approximate stand boundaries should be marked on the base map using these features as a guide. Forest stand boundaries mark a transition from one ecological association to another. For example, a stand boundary might exist along a contour that differentiates upland forest stand associations from lowland stand associations. Likewise, a stand boundary might exist along a ridgeline that differentiates north facing slope forest stand associations from south facing slope associations. These approximate stand boundaries are used to estimate the sample point locations that will be needed for the field survey. The random placement of proposed sample plots should be put on the base map for use in the field (see Map B-7.). Final locations of sample plots may change or shift during the field survey. Additional sample points may also be required if field conditions warrant additional sampling not previously shown on the base map.

The **minimum number of sample plots** as required by the state Forest Conservation Technical Manual is as follows:

- One plot per four acres of forest stand area
- Two plots minimum per stand
- Three plots minimum for the total forested area of the site

Using these standards, there will always be at least three sample plots for the entire forested area on a site and at least two sample plots for each stand. If there is only one stand on the site and it is less than four acres, it will still require three sample plots to be in conformance with the state standards.

Map B-7. Sample Base Map with Estimated Sample Plots and Estimated Forest Stand Boundaries



### 5.2.3 Step 3: Field Survey

A field evaluation that includes sample points is required for intermediate and detailed FSDs. A simplified FSD does not require sample points, unless additional site verification is deemed necessary as determined by the Planning Director or designee.

#### 5.2.3A GENERAL SITE CONDITIONS

A field evaluation shall be performed to verify the existing features and environmental conditions of the property shown on the base map. This evaluation is used to record sample point data, verify the woodland and trees on-site, and note the location of regenerating areas, hedgerows, specimen trees, and any other significant environmental features. During the field evaluation, notes and sketches of field conditions shall be added to the base map, creating a field map. A copy of the appropriate FSD checklist should be taken out into the field to ensure that all required information is collected.

An additional field evaluation may be deemed necessary to verify the presence or absence of RTE species' habitats based on the DNR letter of determination that critical habitats exist on-site or by the positive identification of an RTE during the FSD field evaluation. The RTE survey must be performed following standard protocol established by DNR. The timing of the study may be limited to a distinguishing feature of the RTE, such as flowering period or breeding or spawning season. The identification of RTEs is not limited to the wooded areas of the site. The entire site must be evaluated for the possible presence of RTE habitat and/or species.

#### 5.2.3B SAMPLE POINTS AND SAMPLE POINT DATA SHEETS

The state Forest Conservation Technical Manual describes the required data collection for the preparation of an FSD. For the purposes of preparing an FSD, the state manual may be used for the collection of data with regard to the method used. The number of sample plots required is described in the Forest Stand Delineation Preparation Methodology. The random placement of the sample plots is completed during the preparation of the base map. A data sheet is to be filled out for each sample plot to document the species, size class, and canopy dominance for all trees greater than two inches diameter at breast height (DBH). A sample plot data sheet is provided in Appendix B.

Alternative sample data sheets may be used as long as all of the required information shown on the sample is provided. Other documented parameters include basal area, size and number of standing dead trees, a list of common understory species, a list of herbaceous species, percent of canopy closure, percent of understory cover, percent of herbaceous cover, percent of downed woody material, percent of invasive cover, and stage of plot succession. Other site information affecting the forest should be noted, such as evidence of past harvesting, storm damage, disease, or insect infestation. Information related to future preservation areas should also be noted, such as the presence of debris piles, dumping areas, and/or any non-natural debris that should be removed before construction. These areas should also be shown on the FSD map.

Sample point data is to be collected by both a fixed plot sampling method and the variable plot wedge prism or angle gauge method.

Sample plots 1/10th of an acre in size are typically used; however, sample plots 1/20th of an acre or even 1/100th of an acre may be appropriate in cases where areas of regeneration have created a density that lends to an unreasonable tallying process for a larger sample plot. Other sampling methods may be used as long as those methods yield realistic data, and the information provided is statistically viable. The information to be reported must be converted to sample plots using 1/10th acre in size. When alternative methods are used, the preparer must describe the method in the text and clearly state why this alternative method was used. Sample point data sheets are required to be submitted as part of the FSD text.

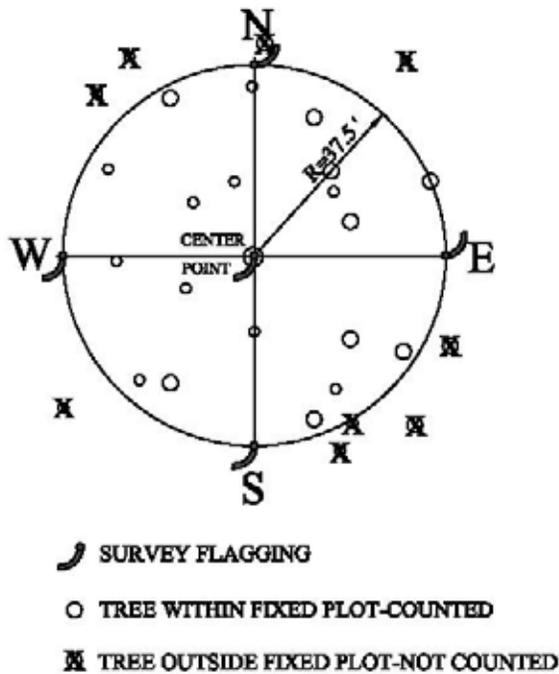
The center of all sample points must be identified in the field by survey flagging labeled with the corresponding sample point number. The flagging may be placed around a tree at the center of a plot or by using a wooden stake with flagging. The stake and/or flagging should remain in place after the FSD preparation for future reference in the field.

The 1/10th-acre "fixed plot" sampling method involves establishing a circle with a 37.5-foot radius around each fixed sample point. Within this circle, trees greater than two inches DBH are identified, measured, and recorded. A list of the common understory species 3 to 20 feet in height and a list of the herbaceous species up to three feet in height within the circle are also recorded. (See Figure B-2.)

The variable plot wedge prism or angle gauge sampling method makes use of a wedge prism or angle gauge with a predetermined basal area factor (BAF) rating. The wedge prism and angle gauge are tools traditionally used for sampling random points while cruising for timber; however, these tools are also effective for determining basal area associated with fixed plots.

Once all of the sample data have been collected in the field and the data sheets have been completed, they are used to classify each forest stand. Dominant/co-dominant species, average DBH, and the makeup of the understory and herbaceous layers are summarized.

**Figure B-2. 1/10th-acre Fixed Plot Sampling Method**



To measure cover:

Estimates of canopy closure are becoming increasingly important in forest management. Several techniques have been used to estimate canopy closure, including the densimeter and ocular estimates using a crown density scale. The crown density scale produces a more accurate estimation of cover and is the recommended method. (See Crown Density Scale, Appendix B.)

Basal area should be measured as a total for all species using a BAF wedge prism or an angle gauge at the center of all sample points. A Biltmore stick or diameter tape may be used to measure the diameter of all trees within the sample plot. Please note that, if a Biltmore stick or diameter tape is used, it is important that each individual tree be measured within the plot because using a general size class will give an inaccurate measurement of basal area.

### 5.2.3C SPECIMEN, CHAMPION, AND HISTORIC TREES

Specimen trees are defined in the WCO as trees having a diameter at breast height of 30 inches or more; trees having 75 percent or more of the diameter at breast height of the current champion of that species; or a particularly impressive or unusual example of a species due to its size, shape, age, or any other trait that epitomizes the character of the species. Champion tree lists are maintained at the national, state, and local levels. The Champion Tree List for Prince George’s County is maintained and updated by the Department of Parks and Recreation and may be accessed by going to the link provided in data sources in Appendix—Introduction.

Historic trees are defined by COMAR Subtitle 5, Section 5-1607, C(4) as trees that are part of a registered historic site or are associated with a registered historic structure.

The entire site must be walked to ensure that all existing specimen, champion, and historic trees have been flagged, recorded, and mapped. Required tree information includes the species, DBH, and condition. The condition comments column is used to provide information regarding the condition rating given to a particular tree.

Possible condition ratings are provided in Table B-12 (below). The last column of the table contains the condition ratings that result from using methods presented in The Guide to Plant Appraisal prepared by the Council of Tree & Landscape Appraisers and published by the International Society of Arboriculture.

**Table B-12. Specimen, Champion, and Historic Tree Rating Guide**

Rating	Conditions That May Warrant This Rating	Appraisal Guide Ratings
EXCELLENT	Exceptionally healthy condition based on observations of leaf, stems, and trunk. Form and habit exceptional or typical of species. Live growth or buds to the terminal ends of branches. Normal leaf size, distribution, and color. Trunk in excellent condition with form typical of species. No disturbances to the root zone or the root zone has been formed over a period of years in an urban setting without disturbance.	90-100
GOOD	Generally healthy condition. Form and habit typical of species. Live growth or buds to the terminal ends of branches. Normal leaf size, distribution, and color. Trunk in excellent condition with form typical of species. Little or no disturbances to the root zone or the root zone has been formed over a period of years in an urban setting without disturbance.	80-90
FAIR	Generally healthy condition, with some minor problems noted. Form and habit typical of species or with some deviations that may impair future preservation. Live growth or buds to the terminal ends of branches. Leaf size, distribution, and/or color atypical of species. Trunk condition impaired by a structural defect. Limited areas of disturbance to the root zone or the root zone has been formed over a period of years in an urban setting with some minor disturbances.	70-80
POOR	Generally poor condition, with some major problems noted. Live growth or buds not present on the terminal ends of branches. Leaf size, distribution, and/or color atypical of species. Trunk condition impaired by one or more structural defects. Extensive areas of disturbance to the root zone or the root zone has been formed over a period of years in an urban setting with some major disturbances.	Less than 70

The location of all specimen, champion, and historic trees can be field located preliminarily; however, at the time of TCP2 preparation and final site design, all specimen, champion, and historic trees inside the limit of disturbance (LOD) and any specimen, champion, and historic trees located outside the LOD within 100 feet of the LOD, MUST be survey located to ensure that they relate spatially to the development being proposed. The following note must be added to the TCP2: “All specimen, champion, and historic trees inside the LOD and outside the LOD within 100 feet of the LOD have been survey located.”

There are three different types of specimen, champion, and historic tree tables. For FSDs and NRIs, the tree table shall contain the columns as shown in Table B-13. For TCP1s, the tree table must also include a column stating the disposition of the trees as shown in Table B-14. For TCP2s, an additional column is required to describe the treatments for trees to be preserved. A sample of this table is provided in Table B-15.

**Table B-13. Sample FSD and NRI Specimen, Champion and Historic Tree Table**

NUMBER	COMMON NAME	SCIENTIFIC NAME	DBH (INCHES)	CONDITION RATING	CONDITION COMMENTS
1	Red Maple	<i>Acer rubrum</i>	38	Good	
2	Red Maple	<i>Acer rubrum</i>	40	Poor	Storm damage
3	Yellow Poplar	<i>Liriodendron tulipifera</i>	40	Poor	Lightning strike
4	White Oak	<i>Quercus alba</i>	31	Fair	Some breakage
5	Yellow Poplar	<i>Liriodendron tulipifera</i>	31	Good	
6	Yellow Poplar	<i>Liriodendron tulipifera</i>	31	Good	
7	White Oak	<i>Quercus alba</i>	32	Good	
8	Yellow Poplar	<i>Liriodendron tulipifera</i>	31	Fair	Powdery mildew; atypical form
9	White Oak	<i>Quercus alba</i>	31	Good	
10	Chestnut Oak	<i>Quercus prinus</i>	32	Fair	Some breakage

Note: All specimen, champion, and historic trees were field located.

**Table B-14. Sample TCP1 Specimen, Champion, and Historic Tree Table**

NUMBER	COMMON NAME	SCIENTIFIC NAME	DBH (INCHES)	CONDITION RATING	CONDITION COMMENTS	DISPOSITION
1	Red Maple	<i>Acer rubrum</i>	38	Good		Save
2	Red Maple	<i>Acer rubrum</i>	40	Poor	Storm damage	Remove
3	Yellow Poplar	<i>Liriodendron tulipifera</i>	40	Poor	Lightning strike	Remove
4	White Oak	<i>Quercus alba</i>	31	Fair	Some breakage	Save
5	Yellow Poplar	<i>Liriodendron tulipifera</i>	31	Good		Save
6	Yellow Poplar	<i>Liriodendron tulipifera</i>	31	Good		Save
7	White Oak	<i>Quercus alba</i>	32	Good		Save
8	Yellow Poplar	<i>Liriodendron tulipifera</i>	31	Fair	Powdery mildew; atypical form	Save
9	White Oak	<i>Quercus alba</i>	31	Good		Save
10	Chestnut Oak	<i>Quercus prinus</i>	32	Fair	Some breakage	Save

Note: All specimen, champion and historic trees were field located.

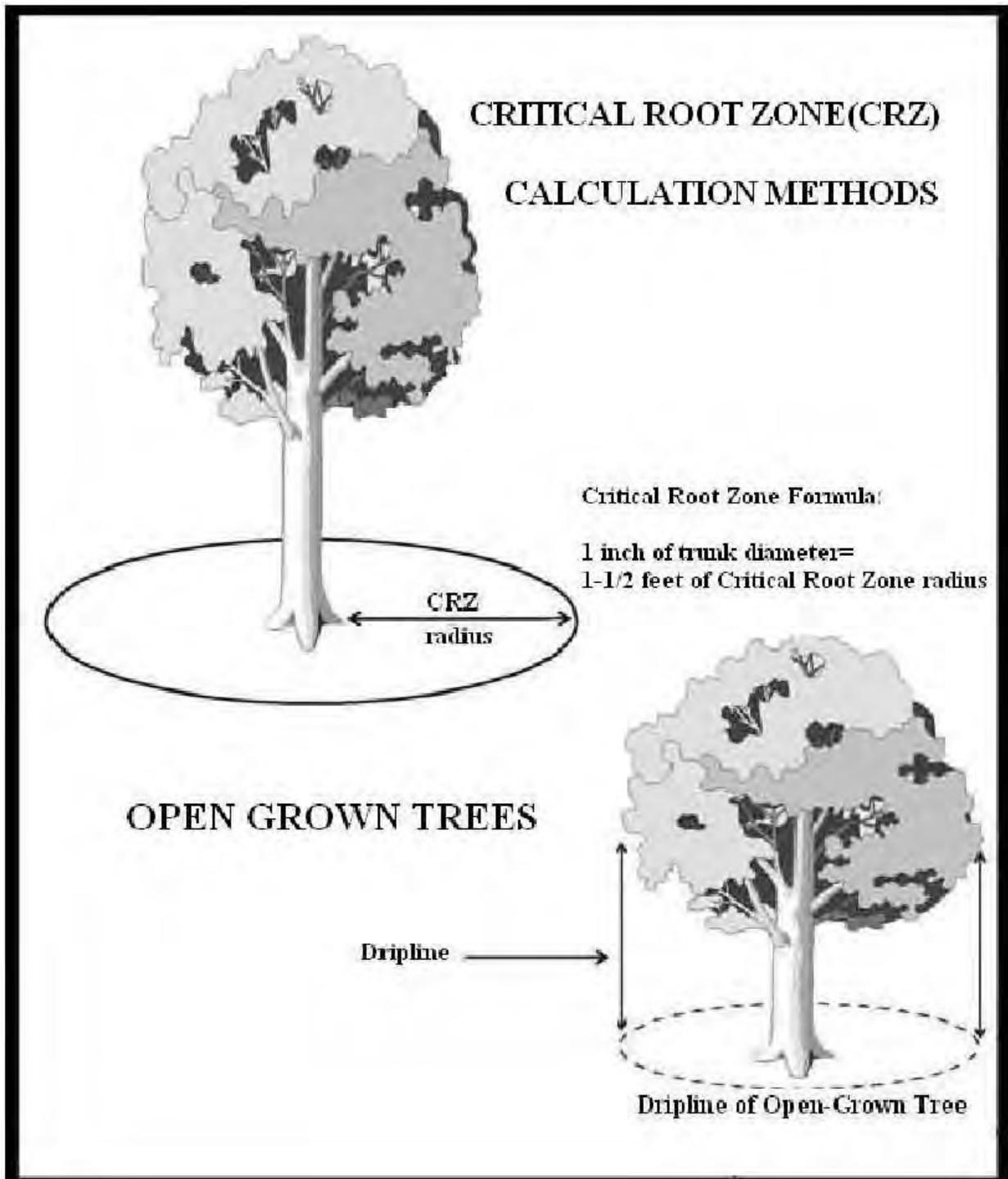
The “Disposition” column is used on Type 1 and Type 2 TCPs but is not needed for the FSD or NRI.

**Table B-15. Sample TCP2 Specimen, Champion, and Historic Tree Table**

NUMBER	COMMON NAME	SCIENTIFIC NAME	DBH (INCHES)	CONDITION RATING	CONDITION COMMENTS	DISPOSITION	PRESERVATION COMMENTS
1	Red Maple	<i>Acer rubrum</i>	38	Good		Save	Root Prune and Fertilize
2	Red Maple	<i>Acer rubrum</i>	40	Poor	Storm damage	Remove	
3	Yellow Poplar	<i>Liriodendron tulipifera</i>	40	Poor	Lightning strike	Remove	
4	White Oak	<i>Quercus alba</i>	31	Fair	Some breakage	Save	Crown thin to remove breakage
5	Yellow Poplar	<i>Liriodendron tulipifera</i>	31	Good		Save	Root prune and fertilize
6	Yellow Poplar	<i>Liriodendron tulipifera</i>	31	Good		Save	Root prune and fertilize
7	White Oak	<i>Quercus alba</i>	32	Good		Save	Root prune and fertilize
8	Yellow Poplar	<i>Liriodendron tulipifera</i>	31	Fair	Powdery mildew; atypical form	Save	Root prune and fertilize
9	White Oak	<i>Quercus alba</i>	31	Good		Save	Root prune and fertilize
10	Chestnut Oak	<i>Quercus prinus</i>	32	Fair	Some breakage	Save	Crown thin to remove breakage

Note: All specimen, champion and historic trees within 100 feet of the LOD have been survey located.

Figure B-3. Example of Specimen Tree and Critical Root Zone (CRZ)



Source: Adapted from Fairfax County, Virginia, Public Facilities Manual.

## 5.2.4 Step 4: Analysis of Field Survey Data

The objective of this step is to first evaluate the existing resources on the site and then to determine which woodlands contain the most valuable areas for preservation. A forest analysis is completed for each forest stand using the individual data sheets and the forest stand summary sheets as described in this section. The forest analysis worksheet as provided in Appendix B shall be completed for each forest stand. The worksheet uses the information from the individual data sheets and forest stand summary sheets to evaluate the forest structure, condition, and the location of regulated features for each forest stand to determine the priorities for retention and restoration. The individual data collected at each sample plot is combined and averaged to give an accurate report of the stand. The analysis of each forest stand shall be summarized in a written narrative and included in the FSD report. A forest analysis worksheet for each stand must also be included in the report. This evaluation is used by the site designers and engineers to prepare the site layout and the subsequent tree conservation plan.

### 5.2.4A SUMMARY OF STAND CHARACTERISTICS AND FOREST STAND SUMMARY SHEETS

A Forest Stand Summary Sheet shall be completed for each forest stand. All of the individual data sheets completed within a forest stand are combined and averaged for all information recorded. For example, if six (6) sample plots are taken in the forest stand, the data is added together from each individual data sheet and divided by six for an average. Along with the individual data sheets, the forest stand summary sheets are required to be submitted as part of the FSD report. The Forest Stand Summary Sheet is provided in Appendix B.

### 5.2.4B ANALYSIS OF STAND CHARACTERISTICS

Forest stands should be evaluated based on stand composition, structure, condition, and function for each individual stand.

**Stand composition:** Species diversity is a major component in the evaluation of stand composition. Higher species diversity results in more sustainable forests, while low species diversity usually indicates poor environmental conditions or stands experiencing transition, which can be associated with recent site disturbance, poor soils, drought, etc. The dominant and co-dominant species, common understory species, herbaceous species, specimen trees, and the presence or absence of invasive species within each stand, encompass the stand composition.

Stand composition is considered site-specific, and any unique conditions are summarized and considered when assigning retention priority.

**Stand structure:** Stand structure is measured by basal area, density, canopy closure, and the presence or absence of multiple layers.

**Stand condition:** Stand condition is characterized by density and basal area, understory species, successional stage, presence or absence of invasive species, insect infestation and/or disease. Stand condition is indicative of the health of the forest and is an important factor for assigning retention priority and evaluating potential preservation methods. Successional stages to be used include pioneer, early successional, midsuccessional, subclimax, and climax.

**Stand function:** Stand function is characterized by stand composition, structure, and condition as they pertain to maintaining or enhancing existing water quality protection, maintaining or enhancing wildlife habitat, accomplishing landowner uses, and implementing the priorities for conservation defined in Subtitle 25-121.

### 5.2.4C ASSIGNING CONSERVATION PRIORITIES

Priority areas include features for preservation and areas that are a high priority for replanting as outlined in the WCO. The following section describes how priorities are assigned to existing forest stands. Forest stands are prioritized for preservation based on the completed forest analysis worksheet. The FSD text must include a description of what elements are present that resulted in the priority assigned to each stand. In some cases, only a portion of a stand may contain an element that results in a certain priority rating; however, if, for example, an area contains only one specimen tree and otherwise would be a Priority 3 stand, the presence of the one specimen tree does not necessarily result in an automatic rating of Priority 1.

Best judgment should be used by the preparer in assigning priorities that reflect the overall character of the stand.

The following characteristics are used to assign stand priorities:

### **Priority 1**

Land designated in Subtitle 25 as woodland and wildlife habitat conservation priorities, whether the area is currently wooded or not.

1. Green infrastructure network elements designated in the Countywide Green Infrastructure Plan and any subsequent updates or within the designated green infrastructure networks in master or sector plans.
2. Critical habitat areas.
3. Contiguous wooded areas with high structural and species diversity, few nonnative and invasive species present, very good overall stand health, and high potential to provide a significant amount of habitat for forest interior dwelling plant, animal, and bird species.
4. Champion trees designated by the United States, the State of Maryland, the County, or municipalities.
5. Specimen, champion, and historic trees.
6. Forest legacy areas as defined by the state.
7. Trees that are within the environmental setting of a historic site or associated with a historic resource.

Priority 1 areas may also include:

8. Primary management areas not within the green infrastructure network
9. 100-year floodplain
10. Wetlands and their buffers
11. Regulated streams and their buffers
12. Extensive areas of steep slopes
13. Hydric and highly erodible soils
14. FIDS habitat

### **Priority 2**

Areas that contain locally significant features including, but not limited to, the following:

1. Woodlands adjacent to Priority 1 woodlands
2. Areas of Marlboro and/or Christiana complex
3. Land adjacent to special roadways and their associated buffers

### **Priority 3**

All other areas on the property are ranked as Priority 3.

In addition to the three priorities listed above, the forest analysis worksheet, provided in Appendix B, provides the framework for determining preservation and restoration priorities based on the composition, structure, condition, function, and location of each stand. The worksheet is required to be provided on the FSD or NRI when sampling points are used to determine the priority for preservation or restoration. Restoration can include the replanting of areas currently devoid of woodlands, areas with low stocking levels, or areas that contain high percentages of invasive plants. The total number of points possible for the stand analysis is 60.

**Table B-16. Assigning Priorities for Preservation**

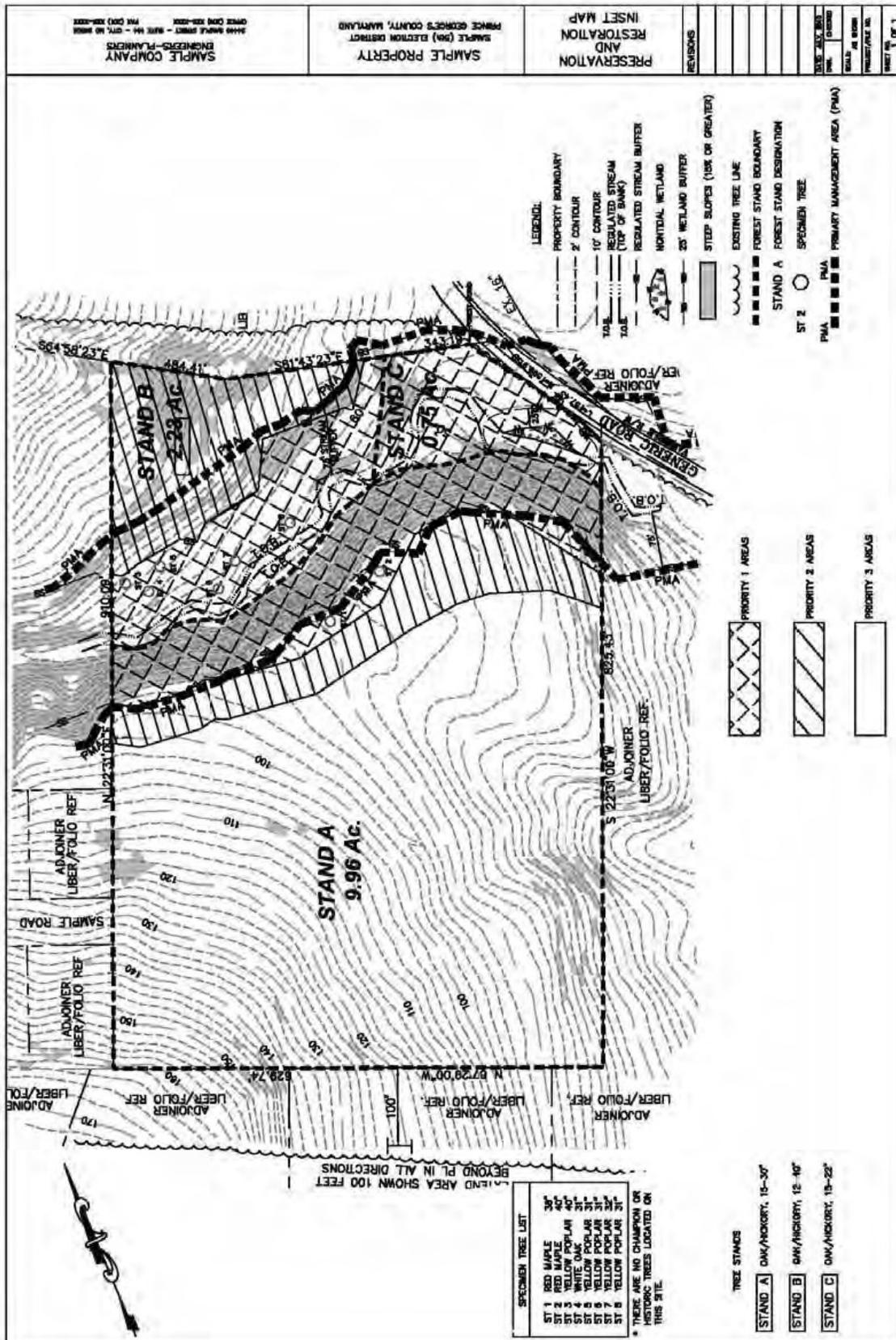
<b>Priority for Preservation</b>	<b>Guidelines for Priority Designation</b>
HIGH	Location in Priority 1 areas regardless of structure or condition (see below) or more than 15 points in either structure or condition or total stand analysis points of 45 or greater.
MEDIUM	Location in a Priority 2 area or 12-15 points in structure and condition or total stand analysis of 30 or greater.
LOW	Location in a Priority 3 area or less than 12 points in structure or condition or total stand analysis less than 30.

**Table B-17. Assigning Priorities for Restoration**

<b>Priority for Preservation</b>	<b>Guidelines for Priority Designation</b>
HIGH	Location in a Priority 1 area
MEDIUM	Location in a Priority 2 area
LOW	Location in a Priority 3 area

Once the preservation and restoration priorities have been established, a priority area inset map is created. This map is to be located on the final FSD and should depict the assigned priority areas. (See Map B-8.)

Map B-8. Example of Priority Area Inset Map



#### 5.2.4D FOREST STAND ANALYSIS REPORT

From the forest stand summary and analysis information, a narrative is written. The narrative begins with a brief introduction describing overall site conditions. The introduction is then followed by a description of the forest association or species composition and condition, any past or present management, presence or absence of critical habitat areas, disease, insects, or invasive plant species on the site. A statement regarding the presence of any historic sites and/or scenic or historic roads should also be included. A suggested format for the FSD report is provided in Appendix B.

#### 5.2.5 Step 5: Preparation of the Final Forest Stand Delineation for Submission

A complete FSD comprises an FSD map and an FSD report. The FSD map contains all of the information contained in the appropriate checklist and all of the information gathered during the site visit. The final FSD report provides a written description for all of the information shown on the plan and includes all applicable data sheets and any determination letters received by DNR regarding rare, threatened, or endangered species existing on the site.

The FSD submission **MUST INCLUDE** both the FSD map and FSD report for acceptance.

