HARFORD COUNTY CHESAPEAKE BAY CRITICAL AREA PROGRAM MANUAL

Wetlands near US 40

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Chapter 1

INTRODUCTION TO HARFORD COUNTY'S CHESAPEAKE BAY CRITICAL AREA PROGRAM

Harford County's Critical Area Program was developed in response to the Chesapeake Bay Initiatives enacted by the State of Maryland. In particular, the Chesapeake Bay Critical Area Act of 1984, as amended, and the Chesapeake Bay Critical Area Program Development Criteria approved by the General Assembly in 1986 guided the development of the Critical Area Program. The Chesapeake Bay Critical Area Act was adopted in recognition of the many findings of the Chesapeake Bay Initiative.

Among these findings were that the Chesapeake Bay and its tributaries are natural resources of great significance to the State and the nation. The shoreline and adjacent lands constitute a valuable, fragile, and sensitive part of this estuarine system, where human activity can have a particularly immediate and adverse impact on water quality and natural habitats. The capacity of the shoreline and adjacent lands to withstand the continuing demands upon them, without further degradation to water quality and natural habitats, is limited.

National studies have documented that the quality and productivity of the Chesapeake Bay waters and tributaries have declined due to the cumulative effects of human activities that increase levels of pollutants, nutrients, and toxins in the Bay System.

Protective land uses such as forest and agriculture in the Bay region have declined. Those portions of the Chesapeake Bay and its tributaries within Maryland are particularly stressed by the continuing population growth and development activity concentrated in the Baltimore-Washington metropolitan corridor. The quality of life for the citizens of Maryland is enhanced through the restoration of the quality and productivity of the waters of the Chesapeake Bay and its tributaries.

Restoration of the Chesapeake Bay and its tributaries is dependent, in part, on minimizing further adverse impacts to the water quality and natural habitats of the shoreline and adjacent lands. The cumulative impact of current development is detrimental to these purposes. There is a critical and substantial State interest for the benefit of current and future generations in fostering more sensitive development activity in a consistent and uniform manner along shoreline areas of the Chesapeake Bay and its tributaries so as to minimize damage to water quality and natural habitats.

To address these findings, the Act required local governments to develop detailed management programs for those areas within 1,000 feet of tidal waters and tidal wetlands and any additional areas that the local jurisdiction deemed important to carry out the purposes of the Act.

GOALS AND OBJECTIVES

The goals and objectives of Harford County's Local Critical Area Management Program are:

- To minimize adverse impacts on water quality that result from pollutants being discharged from structures, or that have runoff from surrounding lands;

- To conserve fish, wildlife and plant habitat; and

- To establish land use policies for development in the County's Chesapeake Bay Critical Area that accommodate growth, but acknowledge the fact that even if direct pollution of the Bay is controlled, the number and activity of persons in the Critical Area can still create adverse environmental impacts.

It should also be noted that Harford County's Critical Area Program was built upon the steps already taken by the County to protect its natural resources through such measures as its Natural Resources District, whose objectives are similar to those of the Chesapeake Bay Critical Area Act. The County's Critical Area Program has become the Master Plan element for the portion of the County it covers, and as such supports the visions of the Maryland Economic Growth, Resource Protection, and Planning Act of 2009, and the updated visions promulgated by the State in 2009.

Since the County's Critical Area is relatively small in proportion to the County as a whole, Harford County's Critical Area Program will also identify aspects of the Critical Area Program that are appropriate to adopt county-wide to protect the quality of the County's waters and natural resources. Particular attention will be focused on ways that the County's sediment control and stormwater management programs can be more effective since runoff from development activities outside of the Critical Area can have a major impact on the County's tidal waters and natural resources.

In addition, the area to be included in Harford County's Critical Area Program is dominated by the Aberdeen Proving Ground, which is not subject to local control. However, when the Critical Area Program was established, the Proving Ground developed an Addendum to the County's Critical Area Management Program describing how their activities will be carried out in a manner that is consistent with the Criteria to the maximum extent possible.

SUMMARY OF HARFORD COUNTY'S CRITICAL AREA PROGRAM

The focus of the County's Critical Area Program is the regulation of development activities to achieve the objectives of the Program. As described in detail in Chapter 2, the County's Critical Area is divided into three types of management areas in which different types and intensities of uses are permitted: Intensely Developed Areas (IDA), Limited Development Areas (LDA), and Resource Conservation Areas (RCA).

The Criteria also specify management actions that are to be taken with respect to the following types of activities: water dependent facilities, shore erosion protection, forestry, agriculture, surface mining, and natural park activities. The County's approach to the management of such activities within the Critical Area is discussed in Chapters 3 - 8, respectively.

In addition, the Criteria requires the protection of the following types of Habitat Protection Areas (HPAs), no matter where they occur in the Critical Area:

- A 100-foot Buffer adjacent to tidal waters, tidal wetlands, and tributary streams;
- Habitats of State-designated threatened or endangered species or species in need of conservation;
- Natural heritage areas;
- Colonial water bird nesting sites;
- Riparian forests and other forested areas utilized as breeding habitat by Forest Interior Dwelling Species;
- Historic waterfowl staging and concentration areas in tidal waters, tributary streams, or tidal and nontidal wetlands;
- Plant and wildlife habitats determined to be of local significance because they contain certain species uncommon or of limited occurrence in the jurisdiction or because species are found in unusually high concentrations;
- Anadromous fish propagation waters;
- Wetlands or other identified aquatic habitats; and
- Other areas that may, in the future, be identified by State and Federal agencies as important plant and wildlife habitat areas.

Harford County also protects nontidal wetlands in the Critical Area consistent with guidelines established in its Zoning Code. Section 267-63.7 discusses the measures used to ensure the protection of such areas. Harford County also recognizes nontidal wetlands as a significant environmental feature outside of the Critical Area. In addition to the State requirements, nontidal wetlands are protected through the County's Natural Resource District (NRD), observed in Section 267-62 of the Zoning Code.

Within each chapter of this document, you will find:

I. A summary of the requirements of the Critical Area Criteria;

II. An identification and analysis of significant issues and factors;

III. A discussion of existing federal, State and local regulations and programs, utilized in their initially adopted or modified form in implementing the Critical Area Program; and

IV. A discussion of modifications that were made to local regulations and programs to address Criteria requirements, including improvement of intergovernmental coordination.

A significant part of Harford County's Critical Area Program is the inventorying and mapping of the pertinent features of the County's Critical Area. Several series of the County's tax maps were developed to depict this information:

- Land Use Management - delineating the location of the Critical Area boundary and the three types of Land Use Management Areas, IDA, LDA and RCA;

- Buffer Elements - depicting the 100-foot minimum Critical Area Buffer, Modified Buffer Areas, soils and slopes (15% or greater) with developmental constraints and nontidal wetlands;

- Forest and Bird Resources - showing wooded areas, forest interior dwelling bird species and riparian habitat, colonial waterbird nesting sites, and migratory waterfowl concentration areas;

- Habitats of Local Significance - which include habitat protection areas of threatened and endangered species habitats; and

- Land Use/Land Cover in the Critical Area.

As part of the original Harford County Chesapeake Bay Critical Area Program adoption process in 1988, a substantial amount of public review was undertaken in order to ensure adequate opportunity for comment by pertinent State and local agencies, interested organizations, and the general public. The public review process for the 2022 update of the Program is presented in Appendix A.

As part of the Comprehensive Review described below, the Critical Area Maps are digitally updated on the County's Geographic Information System (GIS). The remapping process is described in more detail in Chapter 2. The current Harford County Critical Area Map is presented in Figure 1.

PROGRAM IMPLEMENTATION

Due to the comprehensive nature of the Critical Area Program requirements, many government agencies are involved in the implementation of the County's Critical Area Program. All of these agencies play a role in reviewing projects developed in the County's Critical Area. The Department of Planning and Zoning is charged with the lead role of coordinating project review and insuring conformance with the requirements of the local Program. These include:

- County Department of Planning and Zoning

- County Department of Public Works

- County Department of Parks and Recreation

- County Department of Inspections, Licenses and Permits

- Harford Soil Conservation District

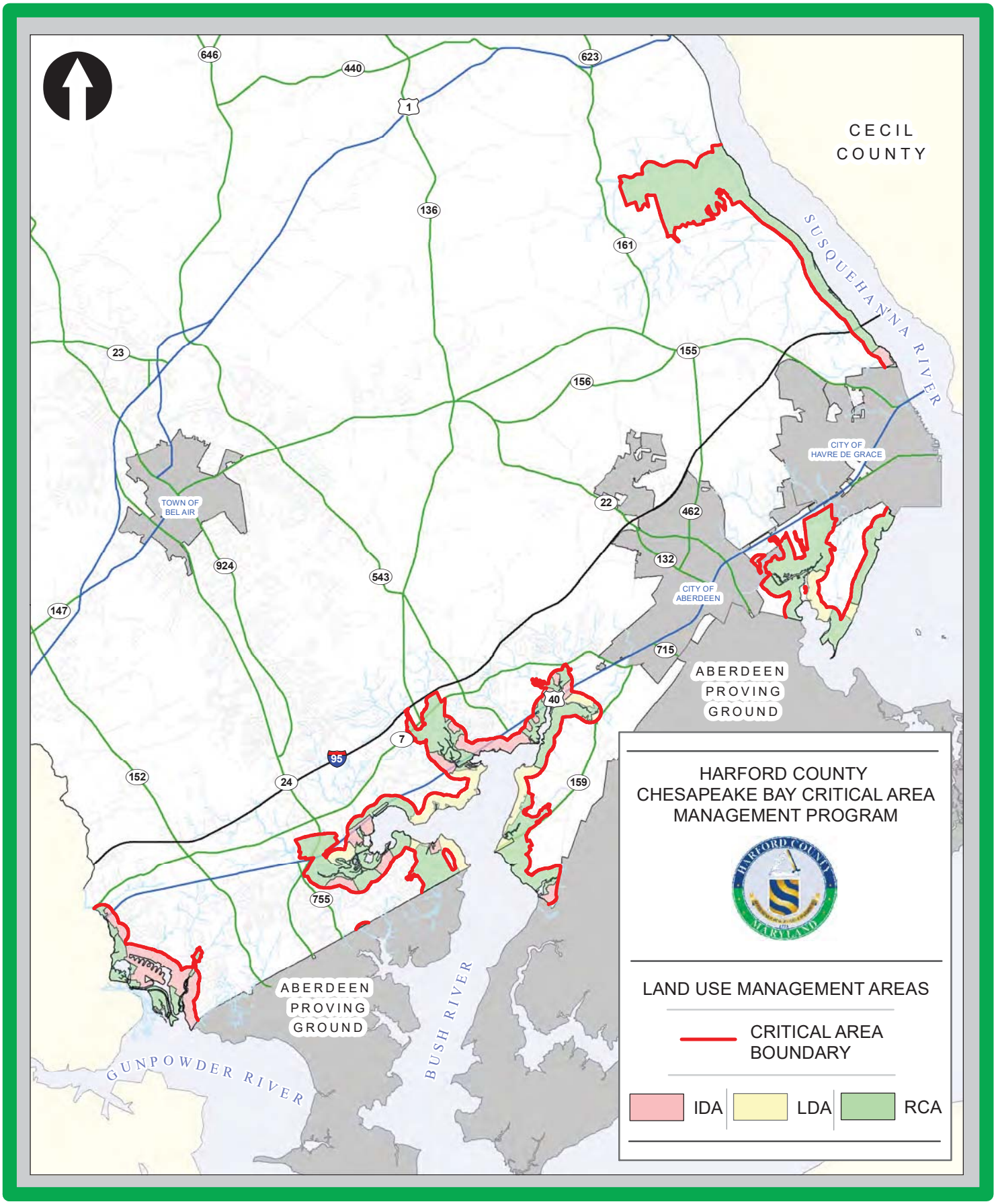
- State Project Forester and County Forestry Board

- County Department of Health

- State Department of Natural Resources

- State Department of the Environment

FIGURE 1


CECIL
COUNTY
SUSQUEHANNA RIVER
CITY OF
HAVRE DE GRACE
TOWN OF
BEL AIR
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HARFORD COUNTY
CHESAPEAKE BAY CRITICAL AREA
MANAGEMENT PROGRAM
LAND USE MANAGEMENT AREAS
CRITICAL AREA
BOUNDARY
IDA
LDA
RCA

The County's Critical Area Program was fully implemented upon approval by the State Critical Area Commission and subsequent County Council action. Originally approved in June 1988, the Program includes adoption of the local Management Program and required changes to the Zoning Code and Subdivision Regulations. The County's Master Water and Sewer Plan was also revised in a manner consistent with the Local Critical Area Program.

A comprehensive update of the Critical Area Program is required to be undertaken every 6 years per COMAR 8-1809(g). This comprehensive update must contain an updated resource inventory, an accounting of the growth allocation acreage, and any necessary amendments to the program or adopted maps for better consistency with the State criteria and regulations and to more effectively protect natural resources within the Critical Area. The County completed comprehensive updates in 1996, 2002, 2011, and 2022.

In the Spring of 2021, the State's Critical Area Program received an addendum with the passage of House Bill 1253 amending the provisions of Subsection 8-1808 of the Natural Resource Article of the Annotated Code of Maryland. Changes to the regulations were made in effort to address the State goal to achieve 50% renewable energy power by 2030. Because the County Council approved changes to the Zoning Code that restrict solar energy systems within the Critical Area, the State changes were not incorporated into the 2022 update of the Harford County Critical Area Program.

Much of the the Anita C. Leight Estuary Center is in the Resource Conservation Area of the Chesapeake Bay Critical Area.

Chapter 2

DEVELOPMENT IN THE CRITICAL AREA

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

One of the principal objectives required of a local jurisdiction's Chesapeake Bay Critical Area Program is the minimization of both direct and secondary impacts of development activities on water quality and fish, wildlife, and plant habitats. Development activities are defined by the Criteria as "human activity that results in disturbance to land, natural vegetation, or a structure." Local jurisdictions are to achieve this objective by dividing their Critical Area into one of three designated land use management areas (IDA, LDA, or RCA) based upon land uses as of December 1, 1985.

The Criteria also require that local jurisdictions establish special provisions regarding the location of water dependent facilities (those facilities that require a location at or near the shore; i.e., within the minimum 100-foot Critical Area Buffer that is otherwise to be maintained in a natural condition). Harford County's approach to water dependent facilities is discussed in the next chapter.

DEFINITION OF THE LAND USE MANAGEMENT AREAS

The Criteria defines the three types of Land Use Management Areas within a local jurisdiction's Critical Area as follows:

Intensely Developed Area (IDA) is an area of at least 20 acres or the entire upland portion of the Critical Area within a municipal corporation, whichever is less, where residential, commercial, institutional, or industrial developed land uses predominate, and a relatively small amount of natural plant and wildlife habitat occurs. Additionally, the area has at least one of the following characteristics:

- A housing density of at least four (4) dwelling units per acre; or
- Is served by public water and sewer systems with a housing density of more than three (3) dwelling units per acre.

Limited Development Area (LDA) is an area with low or moderate intensity development that contain areas of natural plant and wildlife habitat, where the quality of runoff from such areas has not been substantially altered or degraded. Additionally, the area has the following characteristics:

- A housing density ranging between one (1) dwelling unit per five (5) acres up to four (4) dwelling units per acre;

- Is served by a public water or sewer system;

- Is not dominated by agricultural land, wetlands, wooded area, barren land, surface water, or open space; or
- Is less than 20 acres and otherwise qualifies as an IDA.

Resource Conservation Area (RCA) is an area dominated by natural environments such as wetlands, surface water, forests, and open space. Additionally, the area may have at least one of the following characteristics:

- A housing density of no more than one (1) dwelling unit per five (5) acres; or

- Resource–based activities such as agriculture, forestry, fisheries, or aquaculture.

DEVELOPMENT RESTRICTIONS

The location of new or expanded solid or hazardous waste collection or disposal facilities, as well as sanitary landfills, are prohibited anywhere in the Critical Area unless no alternative outside of the Critical Area exists and the facility is needed to correct an existing water quality or wastewater management problem.

Replace any vegetation removed at a rate of 1:1, to include trees and large shrubs, or as amended in the County Ordinance, 2022.

Within each type of management area, the Criteria specify certain requirements that local jurisdictions are to place on activities occurring in that area.

Within IDA, a local jurisdiction is to:

- Develop a strategy for reducing the impacts that existing development has on water quality through public education programs, urban Best Management Practices (BMPs), urban forestry programs, etc;

- In the case of new development or redevelopment, pollution loadings are to be reduced by at least 10% from pre-development loadings through the use of stormwater management BMPs or offsets (measures to improve water quality undertaken off site);

- To the extent practicable, require future development to use "cluster" development as a means of reducing impervious areas and to maximize the amount of natural vegetation retained;

- If practical, establish permeable areas in vegetation;

- Maintain existing public access areas and encourage the establishment of new public access to the shoreline, no more than three (3) feet wide, or six (6) feet wide for ADA accessibility;

- Locate ports and industries using water transportation near existing port facilities or in areas

identified as future port facility sites in accordance with the provisions of the Criteria; and

- Maintain and enhance biological resources (particularly wooded areas) where possible for their positive effects on water quality and plant and wildlife habitat.

Within LDA, a local jurisdiction is to:

- Maintain and, if possible, improve the quality of runoff and groundwater entering the Chesapeake Bay and its tributaries through the implementation of effective sediment control, stormwater management measures, and the retention of natural areas;

- Limit the intensity of development to ensure that the prevailing character of an area as identified by the existing density and land use is maintained;

- Establish procedures to retain at least 80% of forest cover on sites proposed for development and maintain wildlife corridors to adjacent areas;

- Establish at least 15% of an unforested development site with afforestation;

- Prohibit development on slopes greater than 15%;

- Limit lot coverage to 15% of a site, except as provided for in Section 267-63.5 of the Harford County Zoning Code;

- Discourage development on soils with development constraints (highly erodible soils, soils with severe septic constraints, etc.) and only allow development on such soils if mitigation measures are applied to adequately address the identified constraints and to avoid significant adverse impacts on water quality or fish, plant or wildlife habitat; and

- Promote the use of cluster development to minimize the extent of lot coverage and maximize the retention of natural vegetation.

Within RCA, local jurisdictions are to:

- Limit development to a density of one (1) dwelling unit per 20 acres. However, the owner of an undeveloped parcel is allowed to build one (1) residential structure regardless of the density requirement, provided that the other provisions of the Criteria have been satisfied. Additionally, 5% of the amount of land designated as RCA in 1985 can be developed more intensely through growth allocation.

- Promote the continuation of agriculture, forestry, and preserve natural habitats;

- Ensure that land use management practices are consistent with the Criteria pertaining to Habitat Protection Areas, agriculture, and forestry;

- Prohibit any new industrial, institutional, and commercial uses; and

- Promote agricultural land conservation easements to retain the existing character of the area.

II. SIGNIFICANT ISSUES AND FACTORS

The following items are major issues and factors regarding development activities in the Critical Area that were addressed by Harford County during the development of the Critical Area Program:

- The mapping of the three land use management areas and the identification of additional "expansion" areas that need to be included in Harford County's Critical Area in order to address the objectives of the Criteria;

- Improvement of the effectiveness of the County's existing sediment control and stormwater management programs by:

    1. The establishment of an approach for reducing pollutant loadings from development or redevelopment in IDA by at least 10% from pre-development conditions;

    2. The development of an urban stormwater retrofitting strategy for reducing the impacts on water quality from existing development; and

    3. The identification of modifications to sediment control and stormwater management practices and procedures needed to ensure the impacts of new development on water quality and fish, plant and wildlife habitat in the Critical Area are minimized.

- The identification of areas with steep slopes or areas containing soils with development constraints in which development must be restricted;

- The establishment of procedures for the conservation of wooded areas, particularly for the afforestation/reforestation of areas to replace wooded areas cleared for development in the LDA, RCA, and IDA (after 2008);

- The establishment of procedures for allocating new growth in LDA and RCA at densities greater than the Criteria would otherwise allow (an amount equal to 5% of the County's total RCA acreage is allowed: 2.5% in LDA and 2.5% in RCA, with a reservation of 20 acres to be utilized by Harford County); and

- The establishment of procedures relating to grandfathered projects, non-conforming uses, and other projects requiring special procedures because of site-specific or project-specific characteristics.

The approach that Harford County has taken to address each of these issues is discussed below.

MAPPING HARFORD COUNTY'S CRITICAL AREA

DATA COLLECTION AND ANALYSIS FOR DESIGNATION OF LAND USE MANAGEMENT AREAS

In the original mapping of the Critical Area, Harford County used 1980 aerial photograph prints at a 1 inch = 600 feet scale as the basic source of information for the delineation of the three types of land use management areas. These prints were large enough in scale and of sufficient clarity to allow an accurate representation of land use in the County's coastal areas. To identify any changes in land use that might have occurred since 1980, a videotape of the Critical Area was made in early 1986 using a helicopter and a video camera. This information was then used to create the County's tax maps designating the pertinent areas. The maps have been subsequently checked for consistency with 1986 aerial photos that were obtained subsequent to the initial mapping effort.

In order to accurately delineate tidal wetland boundaries and the Critical Area's 1,000-foot boundary, the Department of Natural Resources' wetlands maps showing the preliminary boundary determination at a scale of 1 inch = 200 feet were photographically reduced to 1 inch = 600 feet and the information was transferred to the tax map.

Harford County remapped its Critical Area in 1994-1995 in a digital format using the County's Geographic Information System (GIS). Harford County obtained copies of the State Wetland Maps from the Department of Natural Resources (DNR). These maps are aerial photographs at an approximate scale of 1 inch = 200 feet that show the authoritative boundary of the extent of tidal influence. The extent of tidal waters and tidal wetlands was copied from the State Wetland Maps onto mylar base maps generated by GIS for the County's Critical Area. These interpretations were verified by DNR, and were then digitized into the GIS. The digitized shoreline was then used to recalculate the 1000-foot Critical Area boundary using a program in the GIS. Expansion areas and boundaries between Land Use Management Areas were digitized from the original Program maps and were corrected according to descriptive text in the Critical Area Program documents. Maps of natural resources, sensitive environmental areas, and Critical Area regulatory features were then created using existing data in the GIS and data digitized from the original Program maps. Figures 2 and 3 show the Land Use Management designations for Harford County's northern and southern regions of Critical Area.

APPROACH USED TO DELINEATE THE LAND USE MANAGEMENT AREAS

The basic definition of each of the three types of management areas stated in Section I above was used as the major determinant in designating specific geographic areas as one of the three types of land use management areas. (For example, the basic definition of IDA is areas where institutional, and/or industrial developed land uses predominate, and where relatively little natural habitat occurs.) The characteristics listed after the basic definition were used as supplemental factors in characterizing specific areas where appropriate.

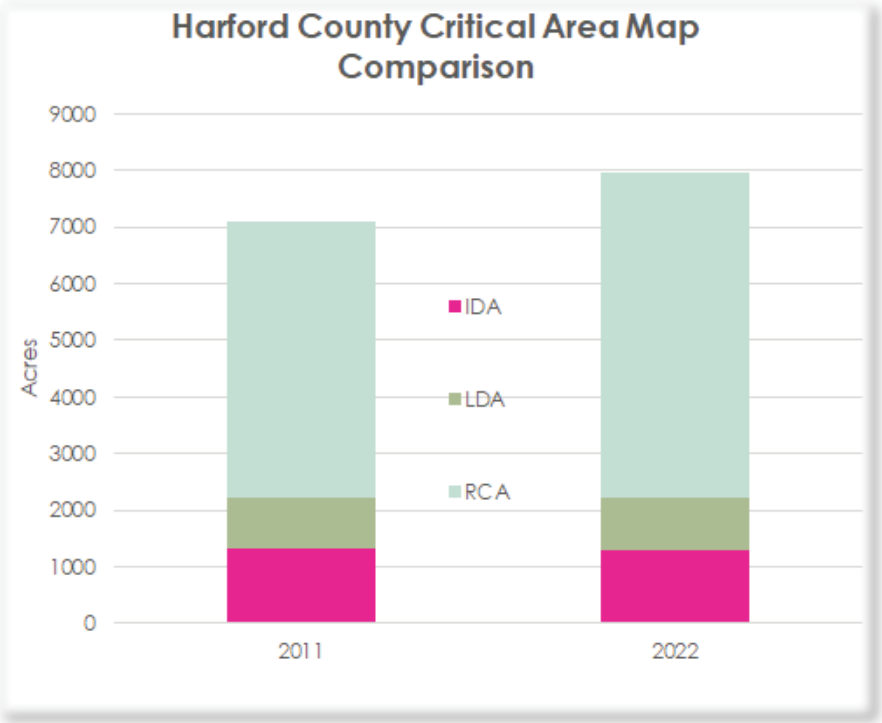
Analysis for designation purposes was undertaken on a community or sub-area basis, using changes in land cover and the type and intensity of land use to determine boundaries between the different types of land use management areas. Property lines were used as a supplemental factor for determining such boundaries where appropriate. To be used as a factor in delineating an area as LDA, water and sewer services had to have been actually in place on or immediately adjacent to a site as of December 1, 1985.

In the case of undeveloped areas located within existing developed areas, the following methodology was used:

- Areas under 20 acres were designated the same as the surrounding areas except that any areas of significant natural resource value, such as tidal wetlands, contained in such areas were mapped RCA;

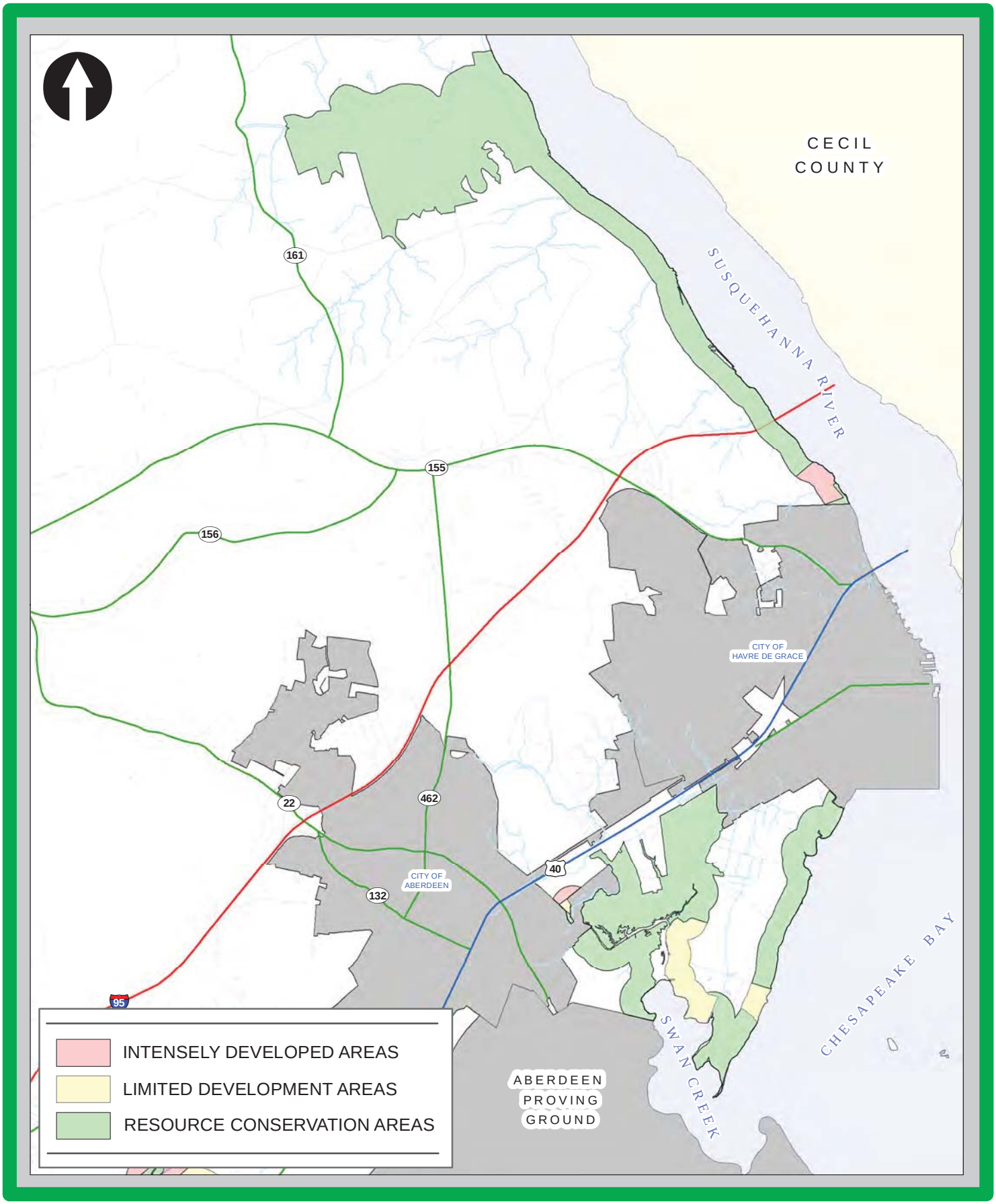
- The designation of areas between 20 and 25 acres depended upon the significance of the natural features found on the site, the configuration of the site with respect to the shoreline and the pattern of development along the immediately adjacent shorelines; and

- Contiguous undeveloped areas 25 acres or greater were designated RCA.



In the 2022 update, county managed critical area expanded by about 12%. This excludes municipal and federal lands in the critical area. Most expansion occurred in Resource Conservation Land Use. This was caused by changes in mapping tidal wetlands and parks. There was minimal impact to private property

FIGURE 2



LAND USE MANAGEMENT AREAS IN THE SUSQUEHANNA RIVER &
SWAN CREEK PORTIONS OF THE CRITICAL AREA

Intensely Developed Area (IDA)
May be developed with medium to high density housing, commercial, or industrial uses, according to the underlying zoning designation with special pollution limits, habitat protection, and a buffer at the shore.


Waters Edge Development in IDA

Limited Developed Area (LDA)
May be developed with low to medium density housing, commercial and small industrial uses according to the underlying zoning designation.


Forest Greens in the LDA

Resource Conservation Area (RCA)
Limited to one dwelling unit per 20 acres, agricultural and forest uses and resource utilization according to the permitted use list.

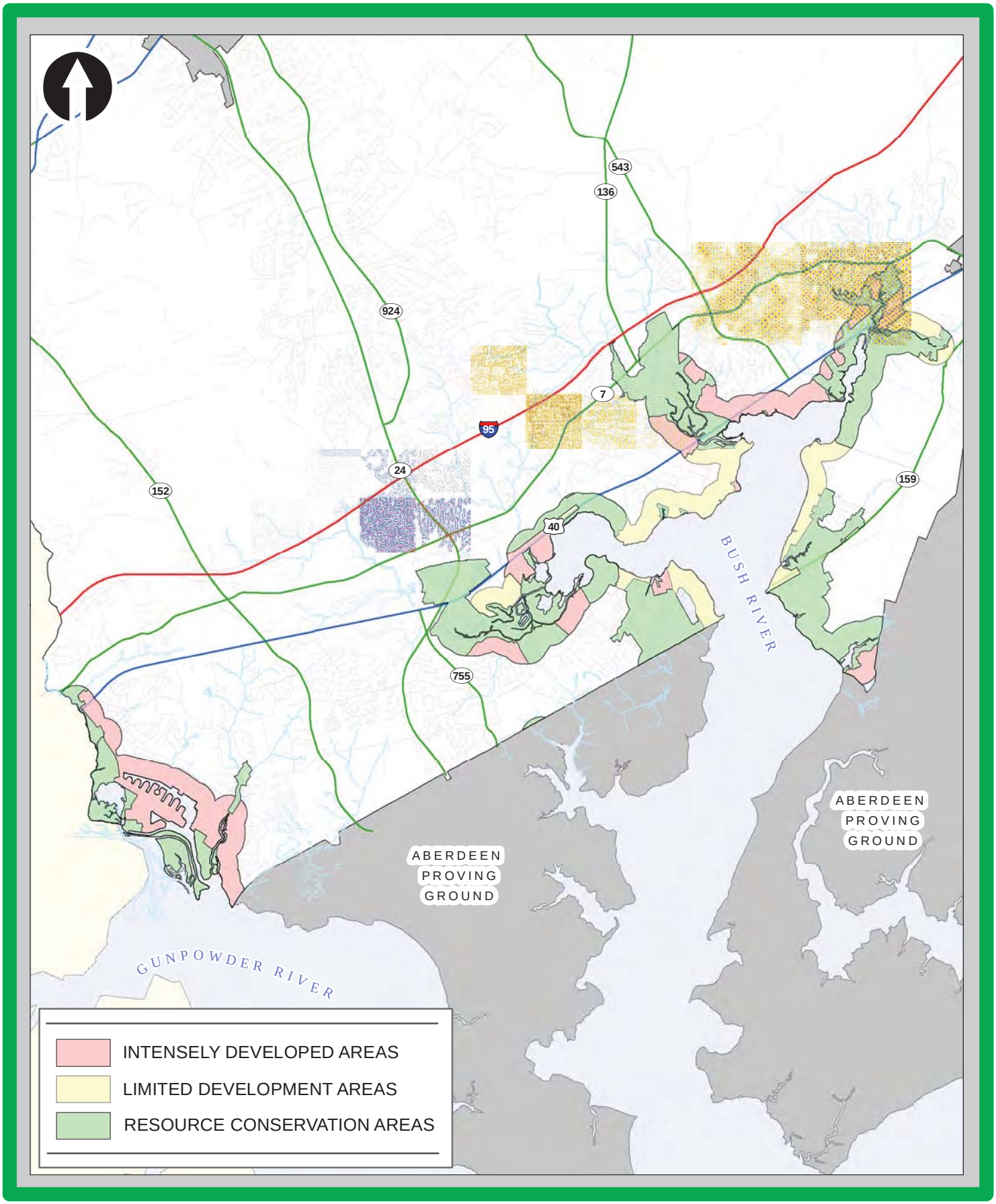

Perryman Park lands in RCA

EXPANSION OF HARFORD COUNTY'S CRITICAL AREA

As permitted by the Critical Area Law, Harford County has expanded the original 1000-foot boundaries of its Critical Area in several areas in order to more fully meet the objectives of the Chesapeake Bay Critical Area Act and Program. The reasons for such expansion are:

- To include certain contiguous nontidal wetlands;
- To ensure adequate protection for State designated Threatened and Endangered Species such as the Maryland Darter, and areas determined to be Habitats of Local Significance (as defined by the Criteria);

FIGURE 3



LAND USE MANAGEMENT AREAS IN THE GUNPOWDER RIVER &
BUSH RIVER PORTIONS OF THE CRITICAL AREA

- To make the Critical Area boundary coincident with that of the 100-year floodplain in certain locations (within which development is already severely restricted by local regulations) or that of the County's Natural Resources District if it is extended further landward;

- To include certain contiguous park land; and

- To provide protection to the headwaters of tributary streams that already are almost entirely located in the Critical Area.

ACREAGE OF THE LAND USE MANAGEMENT AREAS

With the original expansion areas, the total area in Harford County's Critical Area was 8,205 acres at the time of Program approval (June, 1988) with 6,178 acres designated as RCA (74.0%); 1,242 acres designated as IDA (14.9%); and 926 acres designated as LDA (11.1%). Through the Growth Allocation process from 1988 to 2010, 20.85 acres of RCA were converted to LDA, 96.65 acres of RCA were converted to IDA, and 71.57 acres of LDA were converted to IDA. Havre de Grace is allotted 20 acres of growth allocation to use from the designated RCA acreage, but have not used any of this growth allocation.

In 2021, 10.94 acres of a LDA parcel, owned by the Harford Land Trust in Aberdeen, was downzoned to RCA. Because the LDA parcel was an original designation at the time of the County's adoption of the Critical Area Program, the downzoned parcel was then calculated into the County's original Growth Allocation numbers for its RCA designations. Including the newly designated RCA parcel, the County's Growth Allocation amount is now 280 acres.

STORMWATER MANAGEMENT AND SEDIMENT CONTROL ISSUES

10% POLLUTANT REDUCTION LOADING IN IDA

Harford County's approach to meeting this requirement was originally based on the 1993 method developed by the Metropolitan Washington Area Council of Governments for the Chesapeake Bay Critical Area Commission. This formula was updated by the Center for Watershed Protection for the Critical Area Commission in the Fall of 2003, naming phosphorus as a keystone pollutant. An Excel worksheet has been supplied by the Critical Area Commission to calculate the formula and is described in Appendix B.

A simple formula is used to calculate pre-development and post-development pollutant loadings in an area. The formula considers the amount of rainfall occurring on the site, a runoff coefficient that is determined by the amount of impervious surface on the site prior to and after development, and a phosphorous runoff concentration value that is based on whether the proposed development is new development or redevelopment. For undeveloped sites that are proposed for intensive development through the growth allocation process, a fixed benchmark loading is established. Pollutant removal rates have also been established for various stormwater management measures that could be used to accomplish the required pollutant reductions.

If total compliance is not achievable through on-site measures, then the use of off-site measures will be required to make up the difference between the pollutant reduction required and the amount that can be

reduced through on-site measures. The use of off-site measures, outside of the Critical Area, will be considered if the measures provide pollutant reduction within the same sub-watershed or watershed as the project. If compliance cannot be accomplished on-site or off-site as stated above, then a fee in-lieu will be considered. A fee-in-lieu will be charged to developers based upon the amount of the uncontrolled pollutant load discharged from the site and the estimated cost of constructing and maintaining an off-site area.

URBAN STORMWATER RETROFITTING STRATEGY

The National Pollutant Discharge Elimination System (NPDES) Program is a Federally mandated program under the Clean Water Act. Under 1987 Amendments to the Clean Water Act, permit requirements were established for stormwater discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or storm drain systems for municipalities with populations over 100,000 people. Harford County obtained its first municipal NPDES permit in 1994, with resubmittal and recertification required every five years. The initial application involved mapping of the County's stormwater sewer system, identifying stormwater facilities and implementation of a water quality monitoring program.

Components of the County's NPDES permit include stormwater management, erosion and sediment control, illicit discharge detection and elimination, road maintenance, and watershed assessment and planning. Once sources of pollutants are identified on a watershed basis, restoration projects are identified and implemented through the capital budget. Monitoring to determine the effectiveness of stormwater management and progress toward meeting water quality goals is an integral part of the NPDES program.

Restoration of impaired waters is addressed through the development of Total Maximum Daily Loads (TMDLs) by the Maryland Department of the Environment (MDE). TMDLs identify the maximum pollutant loading that a waterbody can assimilate and still meet water quality standards. MDE has determined that jurisdictions that implement the requirements of their municipal NPDES permit are controlling stormwater to the maximum extent practical, thereby meeting the waste load allocations specified in the TMDL. Continued monitoring and NPDES program assessment ensure that progress toward meeting water quality goals is achieved.

Sediment and Erosion Control in Harford County mandate that any disturbance of land 5,000 square feet or greater, or movement of more than 100 cubic yards of earth, must have an approved Erosion and Sediment Control Plan in order to receive a grading permit. The Harford County Department of Public Works, Planning and Zoning, and the Harford Soil Conservation District work jointly in approving Sediment Control Plans. The Harford County Department of Public Works issues the grading permit after the approval of the plan.

IDENTIFICATION OF AREAS WITH SIGNIFICANT DEVELOPMENT CONSTRAINTS

The Criteria identified two major types of areas with significant development constraints: steep slopes and sensitive soils. Development is prohibited on slopes greater than 15% in the LDA and RCA. Development is only allowed on soils having development constraints if the proposed project includes mitigation measures that adequately address the identified constraints and it is shown that such development will not have significant adverse impacts on water quality and plant, fish or wildlife habitat.

Harford County has reviewed information provided by U.S. Department of Agriculture's Natural Resources Conservation Service to identify areas with slope and soil constraints. Table 1 lists the type of soils having one or more development constraints, as defined in COMAR 27.01.01.B(30) and (32): hydric soils, soils with hydric components, potentially highly erodible soils, highly erodible, potentially steep slopes, and steep slopes.

Hydric soils are identified as being wet frequently enough to periodically produce anaerobic conditions, thereby influencing the species composition or growth, or both, of plants. However, it should be noted that soils not on the survey list, but which meet hydric criteria, may be found in the field. Areas with hydric soils consisting of any size are classified as nontidal wetlands by Harford County, and thus, are unsuitable for development. Soils with hydric components are considered soils with significant development constraints.

Highly Erodible Soils are identified as having a slope greater than 15 percent, or those with a Kw factor of .35 or greater and a slope of 5% or greater. Soils with a slope range including 15% or greater, or with a Kw factor of .35 or greater and a slope range including 5% or greater, are listed as potentially highly erodible soils for which site specific analyses will have to be made.

Steep slopes are identified by analysis of the soil classifications in the soil surveys. This was done based upon assurance from the Harford County District Conservationist that such soil classifications were an accurate representation of areas with steep slopes. Slope characteristics can be found on soils having a slope range between 8% and 20% and are therefore listed as potentially steep slopes for which on-site analysis will be needed. When applications are submitted, additional detailed topographical information is required to accurately identify steep slope areas. Steep slope analysis is evaluated through the County GIS.

Hydric soils, highly erodible soils, and steep slope areas have been mapped to assist in identification of areas with significant development constraints due to geomorphological characteristics.

TABLE 1

SOIL TYPES WITH DEVELOPMENT CONSTRAINTS

Map Unit Symbol	Soil Series Name	Kw ("wholesoil") Factor	Percent of Hydric Components	Surface Textural Class	Designated Class	SlopeRange
AdA	Aldino	0.49	5	silt loam	hydric components	0-3
AdB	Aldino	0.49	5	silt loam	hydric components, potentially highly erodible, potentially steep slopes	3-8
AdC	Aldino	0.49	5	silt loam	hydric components, highly erodible, steep slopes	8-15

TABLE 1 CONTINUED

SOIL TYPES WITH DEVELOPMENT CONSTRAINTS

AsB	Aldino	0.20	5	very stony silt loam	hydric components, potentially steep slopes	0-8
BaA	Baile	0.37	85	silt loam	hydric soils	0-3
BaB	Baile	0.37	85	silt loam	hydric soils, potentially highly erodible, potentially steep slopes	3-8
BeA	Beltsville	0.37	0	silt loam		0-2
BeB	Beltsville	0.37	5	silt loam	hydric components, potentially highly erodible	2-5
BeC	Beltsville	0.43	0	silt loam	highly erodible, potentially steep slopes	5-10
BrC2	Brandywine	0.17	0	gravelly loam	potentially highly erodible, steep slopes	8-15
BrD3	Brandywine	0.17	0	gravelly loam	highly erodible, steep slopes	15-25
BrE3	Brandywine	0.17	0	gravelly loam	highly erodible, steep slopes	25-45
CcA	Chester	0.32	5	silt loam	hydric components	0-3
CcB2	Chester	0.32	0	silt loam	potentially steep slopes	3-8
CcC2	Chester	0.32	0	silt loam	potentially highly erodible, steep slopes	8-15
CgB2	Chester	0.28	0	gravelly silt loam	potentially steep slopes	3-8
CgC2	Chester	0.28	0	gravelly silt loam	potentially highly erodible, steep slopes	8-15
CgD2	Chester	0.28	0	gravelly silt loam	highly erodible, steep slopes	15-25
ChB2	Chillum	0.32	0	silt loam		2-5
CkC2	Chillum-Neshaminy	0.49	0	silt loam	highly erodible, potentially steep slopes	5-10
CrE	Chrome	0.24	0	silty clay loam	highly erodible, steep slopes	15-45
Cu	Codorus	0.32	15	silt loam	hydric components	0-3
Cv	Comus	0.37	5	silt loam	hydric components	0-3
DcA	Delanco	0.37	0	silt loam		0-3

TABLE 1 CONTINUED

SOIL TYPES WITH DEVELOPMENT CONSTRAINTS

DcB	Delanco	0.37	0	silt- loam	potentially highly erodible, potentially steep slopes	3-8
EhB2	Elioak	0.37	0	silt loam	potentially highly erodible, potentially steep slopes	3-8
EhC2	Elioak	0.37	0	silt loam	highly erodible, steep slopes	8-15
En	Elkton	0.43	95	silt loam	hydric soils	0-2
EsA	Elsinboro	0.49	0	loam		0-2
EsB2	Elsinboro	0.49	0	loam	potentially highly erodible	2-5
EsC2	Elsinboro	0.49	0	loam	highly erodible, potentially steep slopes	5-10
EvC	Evesboro	0.05	0	loamy sand	potentially highly erodible, steep slopes	5-15
FgaA	Fallsington	0.28	85	loam	hydric soils	0-2
GcB2	Glenelg	0.24	0	loam	potentially steep slopes	3-8
GcC	Glenelg	0.24	0	loam	potentially highly erodible, steep slopes	8-15
GcC3	Glenelg	0.24	0	loam	potentially highly erodible, steep slopes	8-15
GcD	Glenelg	0.24	0	loam	highly erodible, steep slopes	15-25
GcD3	Glenelg	0.24	0	loam	highly erodible, steep slopes	15-25
GgB2	Glenelg	0.20	0	channery loam	potentially steep slopes	3-8
GgC2	Glenelg	0.15	0	gravelly loam	potentially highly erodible, steep slopes	8-15
GgC3	Glenelg	0.15	0	gravelly loam	potentially highly erodible, steep slopes	8-15
GgD2	Glenelg	0.15	0	gravelly loam	highly erodible, steep slopes	15-25
GgD3	Glenelg	0.15	0	gravelly loam	highly erodible, steep slopes	15-25
GnA	Glenville	0.37	10	silt loam	hydric components	0-3

TABLE 1 CONTINUED

SOIL TYPES WITH DEVELOPMENT CONSTRAINTS

GnB	Glenville	0.37	10	silt loam	hydric components, potentially highly erodible, potentially steep slopes	3-8
Hb	Hatboro	0.43	85	silt loam	hydric soils	0-3
HcA	Hatboro-Codorus	0.49	60	silt loam	hydric soils	0-3
JpB	Joppa	0.10	0	gravelly sandy loam		2-5
JpC	Joppa	0.10	0	gravelly sandy loam	potentially steep slopes	5-10
KeB	Kelly	0.49	5	silt loam	hydric components, potentially highly erodible, potentially steep slopes	3-8
KeC2	Kelly	0.49	5	silt loam	hydric components, highly erodible, steep slopes	8-15
KfD	Kelly	0.17	5	very stony silt loam	hydric components, potentially highly erodible, steep slopes	3-25
KpA	Keyport	0.49	5	silt loam	hydric components	0-2
KpB	Keyport	0.49	5	silt loam	hydric components, potentially highly erodible	2-5
KrA	Kinkora	0.43	100	silt loam	hydric soils	0-3
KrB	Kinkora	0.43	100	silt loam	hydric soils, potentially highly erodible, potentially steep slopes	3-8
LeB2	Legore	0.37	0	silt loam	potentially highly erodible, potentially steep slopes	3-8
LeC2	Legore	0.37	0	silt loam	potentially highly erodible, steep slopes	8-15
LeD2	Legore	0.37	0	silt loam	highly erodible, steep slopes	15-25
LeE	Legore	0.37	0	silt loam	highly erodible, steep slopes	25-45
LfC	Legore	0.15	0	very stony silt loam	potentially highly erodible, steep slopes	0-15

TABLE 1 CONTINUED

SOIL TYPES WITH DEVELOPMENT CONSTRAINTS

LfD	Legore	0.37	0	very stony silt loam	highly erodible, steep slopes	15-25
LfE	Legore	0.37	0	very stony silt loam	highly erodible, steep slopes	25-45
LgC3	Legore	0.37	0	silty clay loam	highly erodible, steep slopes	8-15
LgD3	Legore	0.37	0	silty clay loam	highly erodible, steep slopes	15-25
Lr	Leonardtown	0.37	85	silt loam	hydric soils	0-2
MbB2	Manor	0.28	0	loam	potentially steep slopes	3-8
MbC	Manor	0.28	0	loam	potentially highly erodible, steep slopes	8-15
MbD	Manor	0.28	0	loam	highly erodible, steep slopes	15-25
McB2	Manor	0.15	0	channery loam	potentially steep slopes	3-8
McC2	Manor	0.17	0	channery loam	potentially highly erodible, steep slopes	8-15
McC3	Manor	0.17	0	channery loam	potentially highly erodible, steep slopes	8-15
McD2	Manor	0.17	0	channery loam	highly erodible, steep slopes	15-25
McD3	Manor	0.17	0	channery loam	highly erodible, steep slopes	15-25
MdE	Manor	0.28	0	very stony loam	highly erodible, steep slopes	25-45
MfE	Manor	0.17	0	channery loam	highly erodible, steep slopes	25-45
MgC	Manor and Glenelg	0.15	0	very stony loam	potentially highly erodible, steep slopes	3-15
MgD	Manor and Glenelg	0.15	0	very stony loam	highly erodible, steep slopes	15-25
MkA	Matapeake	0.49	0	silt loam		0-2
MkB	Matapeake	0.49	0	silt loam	potentially highly erodible	2-5
MlaA	Mattapex	0.49	5	silt loam	hydric components	0-2
MlaB	Mattapex	0.49	5	silt loam	hydric components, potentially highly erodible	2-5
MsA	Montalto	0.37	0	silt loam		0-3
MsB2	Montalto	0.37	0	silt loam	potentially highly erodible, potentially steep slopes	3-8

TABLE 1 CONTINUED

SOIL TYPES WITH DEVELOPMENT CONSTRAINTS

MsC2	Montalto	0.37	0	silt loam	highly erodible, steep slopes	8-15
NeA	Neshaminy	0.37	0	silt loam		0-3
NeB2	Neshaminy	0.37	0	silt loam	potentially highly erodible, potentially steep slopes	3-8
NeC2	Neshaminy	0.37	0	silt loam	highly erodible, steep slopes	8-15
NsC	Neshaminy and Montalto	0.17	0	very stony silt loam	potentially highly erodible, steep slopes	0-15
NsD	Neshaminy and Montalto	0.17	0	very stony silt loam	highly erodible, steep slopes	15-25
NsE	Neshaminy and Montalto	0.32	0	very stony silt loam	highly erodible, steep slopes	25-45
Ot	Othello	0.43	95	silt loam	hydric soils	0-2
RuB	Russett	0.32	5	fine sandy loam	hydric components	0-5
RuD	Russett	0.32	0	fine sandy loam	potentially highly erodible, steep slopes	5-15
RuE	Russett	0.32	0	fine sandy loam	highly erodible, steep slopes	15-30
ShaB	Sassafras	0.20	4	sandy loam	hydric components	2-5
ShaC	Sassafras	0.20	4	sandy loam	hydric components, potentially steep slopes	5-10
SIB2	Sassafras	0.32	4	loam	hydric components	2-5
SIC2	Sassafras	0.32	0	loam	potentially steep slopes	5-10
SsD	Sassafras and Joppa	0.32	0	loam and gravelly sandy loam	potentially highly erodible, steep slopes	10-15
SsE	Sassafras and Joppa	0.32	0	loam and gravelly sandy loam	highly erodible, steep slopes	15-30
Sw	(Swamp)	0.05	100	-	hydric soils	0-1
Tm	(Tidal marsh)	-	100	mucky peat	hydric soils	0-1
WaA	Watchung	0.28	90	silt loam	hydric soils	0-3
WaB	Watchung	0.28	90	silt loam	hydric soils, potentially steep slopes	3-8
WcB	Watchung	0.17	100	very stony silt loam	hydric soils, potentially steep slopes	0-8
WhB	Whiteford	0.20	0	silt loam	potentially steep slopes	3-8
WhC2	Whiteford	0.20	0	silt loam	potentially highly erodible, steep slopes	8-15
WoaB	Woodstown	0.32	7	loam	hydric compon.	2-5

FOREST CONSERVATION MEASURES

One of the major objectives of the Critical Area Program is to maintain and, where possible, improve the quality and quantity of the wooded resources located in the Critical Area because of their value for water quality protection, wildlife habitat, recreation, etc.

DEVELOPMENT REQUIREMENTS IN IDA

All permanent disturbance, including new impervious surfaces and removal of vegetation, must be replaced at a 1:1 square footage basis. The 15% afforestation requirement does not apply in the IDA.

DEVELOPMENT REQUIREMENTS IN LDA AND RCA

The Criteria established specific requirements for the retention of forest cover, replacement of forest cover that is removed, and afforestation of presently unforested areas in the LDA and RCA.

No more than 20% of forest cover on a site may be removed and the amount of forest cover removed must be replaced on a 1:1 basis either on-site or elsewhere in the Critical Area. Up to 30% of the forest cover on a site may be removed, if the amount of forest cover removed is replaced on a basis of 1.5 times the total amount removed. Removal of forest cover is to be undertaken in a manner that minimizes the impact on the value of the forest cover for wildlife habitat, water quality protection, aesthetic enhancement, and recreation. In particular, wildlife corridors are to be maintained between existing on-site forested areas and forested areas adjacent to the site to provide continuity of existing plant and wildlife habitat.

Any wooded area cleared or cut prior to County approval, including any areas beyond which was permitted, is required to be replanted on a basis of three times the amount of land cleared or cut.

Areas that are presently unforested or those that have less than 15% of the area in existing in forest cover are required to have 15% of the total area afforested (planting of forest cover in areas presently unforested) and bonded through Harford County at $4.00 per square foot.

In undertaking afforestation efforts, priority will be given first to establishing Buffer areas along tidal waters and tributaries where they do not exist, and second to the afforestation of areas in a manner that would maximize their value for wildlife habitat and water quality protection. A mixture of trees, shrubs and ground cover will be planted as part of such afforestation efforts.

In replacing forest cover that was removed, priority shall be given to replacing the forest cover on-site in a manner that maximizes its value for wildlife habitat and water quality protection. If on-site replacement is not feasible, the developer has the option of finding a suitable location elsewhere in the Critical Area or paying a fee-in-lieu to cover the costs of afforestation efforts elsewhere in the County's Critical Area. Such a fee-in-lieu fee will cover the cost of the land purchases, trees, associated shrubs, and ground cover as appropriate, ground preparation, labor, maintenance and monitoring. The fee will be $4.00 per square foot of area cleared. Such in-lieu fee afforestation efforts will be undertaken as part of the County's Critical Area Forestry Program.

The long-term protection of the wooded areas that are retained and areas that are afforested must be guaranteed through the use of final plat restrictions, conservation easements, homeowner agreements, or similar instruments, as a condition of approval of a proposed development.

The above requirements will be implemented through use of a Forest Conservation Plan approved as part of the development review process by the Harford County Department of Planning and Zoning with technical assistance provided by the Maryland Department of Natural Resources. The contents of such a Forest Conservation Plan, including the procedures to be followed in undertaking afforestation efforts, are described in Appendix C, as amended.

GROWTH ALLOCATION

AREA AVAILABLE FOR GROWTH ALLOCATION

As noted above, development in the RCA is limited to a density of one dwelling unit per 20 acres. Since this is a severe restriction on development, the Criteria included a provision for allowing some additional growth in undeveloped areas. An amount of land equal to 5% of the total amount of land designated as RCA at the start of the Program (subtracting any areas that were designated as tidal wetlands) can be developed at a higher density than would otherwise be allowed by the Criteria.

One half (2.5%) of this higher density development can be located in areas currently designated as RCA and the other half is to be located in areas currently designated as LDA. In Harford County, 6,178 acres were designated as RCA at the start of the Program, including 137 acres within the corporate limits of Havre de Grace. After adding the 10.94 acres of RCA from the downzoning of the Harford Land Trust property in 2021, the County now has 6,189 acres of RCA that was part of the original Critical Area maps. Subtracting 595 acres of tidal wetlands located in the RCA, this allows a total growth allocation of 280 acres (140 acres being available for use in the RCA and 140 acres being available for use in the LDA).

As of the time of this Program update (2022), the available growth allocation acreage for Harford County (including Havre de Grace) is 22.5 acres to be used in the RCA and 68.43 acres to be used in the LDA.

Any alteration to the RCA by the construction of facilities that are approved by the State rather than the County, (i.e., power plants), will not be counted against a County's growth allocation.

In evaluating applications for growth allocation in Harford County, the following policies and site-specific factors will be considered in making any allocation awards:

GENERAL GROWTH ALLOCATION POLICIES

Due to the unique nature of the growth allocation process, and in order to maximize opportunities for a variety of projects with the greatest public benefits, growth allocation shall be awarded to projects that can initiate construction within 36 months of receiving the award. Construction shall be considered initiated when infrastructure plans and permits have been approved and on-site construction has commenced. Extensions of the time to initiate construction may be granted by resolution of the County Council. An extension shall not exceed 24 months.

Failure to initiate construction or obtain the necessary extensions will cause the growth allocation project approval to become null and void. The applicant must reapply for project approval through the Department of Planning and Zoning and the Chesapeake Bay Critical Area Commission. Furthermore, the designated land use area boundaries shall remain in effect unless revoked by legislative action of the County Council. Such a revocation shall be initiated by the Department of Planning and Zoning, and enacted by the County Council as a legislative amendment to the Critical Area Program. This action will require a change in the Critical Area Maps and the assessment of available growth allocation.

In acknowledgement of the responsibility that the County has under the Critical Area Program to ensure some continued opportunity for the expansion of the City of Havre de Grace within the Critical Area, a minimum of 20 acres of the total growth allocation available to the County for upgrade from RCA to other land use designations shall be reserved for the City. This allocation will be reevaluated when the County undertakes a comprehensive review of its program. Official notification of the review will be provided to the City. Upon notification of the review, the City must request in writing that any remaining reserved acreage be maintained for their use. All other policies and site-specific factors outlined in this program shall also apply to the review of growth allocations within the City of Havre de Grace. In 2021 the City provided written notification to the County to maintain the 20 acres of growth allocation for the City's use.

Due to the need to ensure that any projects receiving a growth allocation shall be developed as originally represented by the applicants in the Critical Area Assessment Reports, all growth allocation awards shall comply with such conditions of approval as determined by the County for each project or suffer revocation of their growth allocation award.

REQUIREMENTS FOR THE USE OF GROWTH ALLOCATION

When locating new Intensely Developed or Limited Development Areas, the following requirements shall apply:

- The County is limited to one growth allocation envelope per parcel unless:

    1. Having more than one growth allocation envelope will provide a benefit to water quality or habitat; and

    2. The Commission approves more than one growth allocation envelope.

- No more than one-half of the County's original growth allocation shall be located in Resource Conservation Areas;

- The County shall not approve a growth allocation in the Resource Conservation Area unless the development potential within the remaining Resource Conservation Area acreage outside the growth allocation envelope supports a minimum density of one dwelling per 20 acres;

- A new Limited Development Area shall only be located adjacent to an existing Limited Development Area or Intensely Developed Area;

- A new Intensely Developed Area shall only be located in a Limited Development Area or adjacent to an existing Intensely Developed Area, or is an existing grandfathered commercial, industrial, or institutional use;

- A new Intensely Developed Area shall only be located where impacts to the defined land uses of the Resource Conservation Area are minimized;

- A new Intensely Developed Area shall be at least 20 acres in total;

- A new Intensely Developed Area or Limited Development Area shall be located in a manner and incorporate measures to protect and optimize benefits to water quality and nearby Habitat Protection Areas as defined in the Harford County Zoning Code and in COMAR 27.01.09;

- New Intensely Developed or Limited Development Areas shall be located to minimize impacts to forests and developed woodlands. All wooded area removed shall be replaced as specified in the Zoning Code, and in accordance with the Forest Management Guide found in Appendix C of the Critical Area Program;

- A new Intensely Developed Area or a Limited Development Area in a Resource Conservation Area shall be located at least 300 feet beyond the landward edge of wetlands or tidal waters, and this 300 feet shall be established as Buffer; and

- New Intensely Developed Areas or Limited Development Areas shall conform to all of the criteria of Harford County's Code and Critical Area Program, and shall be so designated on the County's Critical Area Maps.

SPECIFIC FACTORS FOR GROWTH ALLOCATIONS

In reviewing map amendments or refinements involving the use of growth allocation, the County shall demonstrate that:

- The proposed classification change is consistent with the County's comprehensive plan and the growth allocation will implement the goals and objectives of the comprehensive plan;

- Public improvements shall be provided with the proposed development and may include, but are not limited to:

    1. Public access facilities to waterfront areas;

    2. Acceleration of the provision of public water and sewer services to areas with existing health problems; and

    3. Dedication of lands to public park purposes.

- A new Intensely Developed Area shall:

    1. Be served by a public wastewater system;

2. Have an allowed average density of at least 3.5 units per acre;

3. Be located in a preferential funding area if greater than 20 acres; and

4. Have a demonstrable economic benefit to the area.

- A new Limited Development Area shall:

  1. Be served by a public wastewater system or septic system that uses the best available nitrogen removal technology;

  2. Be clustered; and

  3. Be a completion of an existing subdivision, or an expansion to an existing business.

- Innovative site design and construction features shall be incorporated to minimize the disturbance of natural areas and reduce the impacts to Habitat Protection Areas, Resource Conservation Areas, and the adjacent communities. Such features may include the use of:

  1. Cluster development;

  2. Low-impact development practices as described in the articles of the U.S. Department of Housing and Urban Development, Office of Policy Development and Research, The Practice of Low Impact Development (July 2003); Prince George's County, Maryland Department of Environmental Resources, Low-Impact Development Design Strategies: An Integrated Design Approach (June 1999); and Prince George's County, Maryland Department of Environmental Resources, Low-Impact Development Hydrologic Analysis (July 1999);

  3. Shallow-marsh creation stormwater management measures;

  4. Buffer areas to minimize impacts on existing habitats and wildlife corridors and protect adjacent natural and developed areas from impacts of development;

  5. Landscaping plans and materials to enhance the establishment of vegetated Buffer areas on-site; and

  6. Conservation easements to permanently protect natural areas.

- The proposed classification change will use existing public infrastructure, where practical;

- The proposed classification change is consistent with State and regional environmental protection policies concerning the protection of threatened and endangered species and species in need of conservation that may be located on-site or nearby;

- There shall be no impacts on a priority preservation area, as defined under §2-518 of the

Agriculture Article;

- There shall be no environmental impacts associated with wastewater and stormwater management practices or discharges to tidal waters, wetlands, tributary streams, or other Habitat Protection Areas; and

- There shall be no environmental impacts associated with location to a coastal hazard area or an increased risk of severe flooding attributable to the proposed development.

- There will be strict compliance with the standards for growth allocation as described in the Zoning Code.

- Since the Criteria require that the amount of forest removed from areas designated as RCA and LDA not be reduced (and if possible, increased), all projects given a growth allocation will have to replace forest removal at a ratio of one-to-one or greater**,** on-site or off-site within the Critical Area. If such replacement is not feasible, an in-lieu fee of $4.00 per square foot of area cleared shall be paid to the County.

- Since adverse impacts on water quality from such projects are to be minimized, pollutant loading from projects granted growth allocation will have to be maintained at pre-development levels, and in the case of new IDAs reduced 10% from pre-development levels. To the maximum extent possible, pollutant reduction measures shall be constructed on-site within the Critical Area. Consideration of the establishment of treatment facilities outside of the Critical Area will be given if the proposed treatment facility provides water quality benefits to the same sub-watershed or watershed.

GROWTH ALLOCATION APPROVAL PROCESS

In order for the County to adequately evaluate requests for growth allocations, an application for growth allocation must be filed with the Department of Planning and Zoning, meeting all of the requirements described in the Zoning Code and in COMAR 27.01.02.06-1. In addition**,** the information required for concept plan or preliminary plan approval in the Critical Area (as appropriate) must be submitted and accompanied by a statement from the applicant regarding how the proposed development addresses the policies and factors noted above. Applications for growth allocation will be considered an amendment to the designated land use area boundaries shown on the County tax maps.

Preliminary review and comment shall be requested from the Maryland Department of the Environment, Maryland Department of Natural Resources, United States Fish and Wildlife Service, Maryland Historical Trust, and U.S. Army Corps of Engineers regarding:

- Rare, threatened, and endangered species;

- Forest interior dwelling birds and colonial water birds;

- Anadromous fish and their propagation waters and any other aquatic species located onsite;

- Plant and wildlife habitat and historic waterfowl staging and concentration areas;

- Submerged aquatic vegetation;

- Riparian forests and tidal and nontidal wetlands; and

- Natural heritage areas and other historical and cultural resources.

The Department of Planning and Zoning shall hold a pre-application meeting with the applicant and notify the applicant in writing of the sufficiency of their application within 30 days of receipt. If the Department of Planning and Zoning determines the application to be insufficient, the applicant shall submit the additional information within 30 days of notification; otherwise, the application shall be considered null and void.

The Department of Planning and Zoning shall present a recommendation report to the Planning Advisory Board and the Environmental Advisory Board within 90 days of determination of a complete application.

The Department of Planning and Zoning shall present an updated recommendation report to the County Council that includes all recommendations from the Planning Advisory Board and the Environmental Advisory Board, within 90 days after having presented to the Board members.

The County Council shall hold a public meeting in the following manner:

1. The Department of Planning and Zoning shall publish a notice of the date, time, and place of the hearing in two local County newspapers, at least two weeks prior to the hearing;

2. The Department of Planning and Zoning shall send notice of the hearing to all property owners wholly or partially within, or immediately adjacent to, the requested area of change;

3. The County Council shall establish conditions of approval that are consistent with the intent of the County's Critical Area Program, which may include a Buffer Management Plan or Habitat Protection Plan; and

4. At any time after the hearing, the County Council may approve or deny the proposed change in classification.

An applicant may not submit a new application for the same request for two years following a denied application.

Within 30 days of the County Council's approval, the application shall be sent to the Critical Area Commission for review. No application shall be considered final until written approval is received from the Critical Area Commission. Any application sent to the Critical Area Commission shall be accompanied by pertinent findings, plans, environmental reports, and studies as described below:

- A written finding that ensures the requested change is consistent with the purposes, policies, goals, and provisions of the Critical Area Law and all Criteria of the Critical Area Commission;

- All information and documentation relevant to the local jurisdiction's determination that the project meets the standards listed under Natural Resources Article, §8-1808.1(c)(2), Annotated Code of Maryland, Section 267-63.7 of the Harford County Zoning Code, and Appendix K of the Harford County Critical Area Program;

- All information and documentation that addresses the factors to be considered by the Critical Area Commission under Natural Resources Article, §8-1808.1(c)(4), Annotated Code of Maryland, Section 267-63.7 of the Harford County Zoning Code, and Appendix K of the Harford County Critical Area Program;

- A conceptual site development plan and environmental features map in accordance with COMAR 27.01.02.06-1.B;

- An environmental report that includes the following, when applicable:

    1. A Buffer Management Plan and/or Habitat Protection Plan in accordance with COMAR 27.01.02.06-2.B and C;

    2. The preliminary stormwater management plan for compliance with the 10% pollutant reduction rule, including all worksheets and supporting documentation;

    3. Comments from the Maryland Department of the Environment, Maryland Department of Natural Resources, United States Fish and Wildlife Service, Maryland Historical Trust, and U.S. Army Corps of Engineers; and

    4. A landscape plan demonstrating any proposed removal of vegetation from the site and the proposed replacement and/or addition of vegetation.

- A map that shows the land area where the local jurisdiction proposes a change of Critical Area land classification; and

- Verification that the acreage proposed for reclassification is accurately depicted on the map and is equal to the amount of acreage to be deducted from the local jurisdiction's existing total allotment of growth allocation, when applicable.

If the reclassification is approved by the Critical Area Commission with one or more conditions, the County has 60 days to notify the Critical Area Commission of its intent to adopt the conditions.

Prior to approving the final site plan or subdivision plat, the County shall ensure that:

1. All conditions of approval are incorporated into the final plan, public works agreement, deed covenants, etc; and

2. A note is added on the final plan or plat to ensure that the approved change in Critical Area classification shall be considered null and void, and shall return to its prior classification if an applicant fails to start the approved project or to request a timeline extension within two years of the project approval date.

a. A timeline extension may be approved by the County, not to exceed an extension greater than two years time. No more than one extension shall be granted.

The County's official Critical Area maps shall be amended to reflect the new land classification, and a copy of the new map shall be provided to the Critical Area Commission within 120 days of the Commission's approval.

CALCULATING GROWTH ALLOCATION DEDUCTIONS

The use of growth allocation shall be deducted from the available growth allocation in the following manner:

- When a 300-foot setback from wetlands and tidal waters is not provided, as in a case where existing non-conforming or grandfathered structures are located in the setback, the County shall require the deduction of the area of the Buffer;

- For growth allocation used in the Limited Development Area, the acreage deducted shall match the acreage of the area shown (growth allocation envelope) on the official Critical Area map as amended by the County and Critical Area Commission; and

- The County shall deduct the acreage of the entire Resource Conservation Area parcel that is used for growth allocation, whether or not it is all used for growth allocation.

The County may exclude the following from a growth allocation deduction:

1. The remaining Resource Conservation Area outside the growth allocation envelope, if at least 20 acres remains;

2. The remaining Resource Conservation Area outside the growth allocation envelope if it is less than 20 acres but contiguous to a permanently protected Resource Conservation Area on another parcel, and the sum of the remaining Resource Conservation Area and protected Resource Conservation Area is at least 20 acres;

3. The acreage of a 300-foot setback; and

4. The acreage of tidal wetlands on the parcel.

GRANDFATHERED PROJECTS AND OTHER PROJECTS REQUIRING SPECIAL EVALUATION PROCEDURES

The Criteria require that special conditions be applied to projects approved prior to formal adoption of a Critical Area program, in the case of non-conforming uses and structures, and other projects deserving special consideration because of site-specific characteristics.

GRANDFATHERED PROJECTS

As discussed in more detail in Appendix D, development that was approved in the Critical Area prior to formal adoption of the County's Critical Area Program is counted against the County's available growth allocation unless certain conditions are complied with. To avoid any reduction in the County's total growth allocation, Harford County took the following approach concerning grandfathered projects.

Provided that Habitat Protection Areas, as identified in Chapter 9 of this document, are protected and the requirements relating to water-dependent facilities and adequate stormwater management measures are complied with – withstanding the density limitation that would otherwise be applied – the following types of developments are considered grandfathered:

- Construction of a single family dwelling on an undeveloped, legal parcel of land that existed as of December 1, 1985;

- Construction of subdivisions that received final approval prior to June 1, 1984, provided that lots not individually owned are consolidated or reconfigured to comply with the provisions of Harford County's Critical Area Management Program to the maximum extent possible;

- Construction of subdivisions that received final approval between June 1, 1984 and December 1, 1985;

- Construction of subdivisions that received final approval after December 1, 1985, and prior to the date of approval of Harford County's Critical Area Management Program (1988). Such subdivisions shall be consistent with the provisions of the County's Critical Area Management Program or the development of such areas must utilize a portion of the County's growth allocation; and

- The expansion by no more than 50% of commercial uses on parcels designated LDA because they did not meet the minimum 20-acre size required for IDA designation.

NONCONFORMING USES AND VARIANCE PROVISIONS

Provisions will be made for the continuation of non-conforming uses in the Critical Area provided that any intensification or expansion of such uses are only allowed through a variance granted in accordance with conditions that ensure that the objectives of the County's Critical Area Program are still being addressed, particularly those relating to protection of water quality and fish, plant, and wildlife habitat. In addition to non-conforming uses, such variance procedures may also be utilized in cases where because of unusual site-specific conditions, literal application of the requirements of the Program would place an unreasonable hardship on a landowner.

MODIFIED BUFFER AREAS

The County has mapped certain sections of the shoreline that meet the conditions for a Modified Area as described in COMAR 27.01.09.01-8. These areas – that would otherwise be designated as the previously described 'Buffer' – are largely or totally developed, or they include undeveloped lots of record that are 200 feet or less in depth, the development of which is grandfathered under the provisions of COMAR 27.01.09.01.07, and they meet the provisions of the County's Critical Area Program. In such areas, the existing pattern of residential, industrial, commercial or recreational development prevents the Buffer from fulfilling the water quality and habitat protection objectives set forth in COMAR 27.01.09.01.

In lieu of the Buffer requirements, the County administers a set of rules for development and redevelopment, as outlined in Section 267-63 of the Zoning Code. An offsetting program is also established whereby the adverse effects of any new lot coverage created are mitigated.

The following standards apply when mapping new areas as 'Modified Buffer':

- Only lots of record as of December 1, 1985 are eligible for mapping as Modified Buffer Areas (MBAs);

- The parcel or lot being considered for MBA status shall contain a Buffer that was significantly impacted by development at the time of program adoption and that prevents the Buffer from fulfilling its functions;

- Developed parcels or lots shall contain a Buffer intrusion by the principal structures (excluding utilities or septic systems);

- Undeveloped or vacant parcels or lots (i.e., infill) may be designated as a MBA if development within the Buffer cannot be avoided based on the size of the parcel or lot, area of the parcel or lot within the Buffer, or the surrounding pattern of development;

- If only part of a parcel or lot meets the criteria for designation as a Modified Buffer Area, then only portions of the parcel or lot shall be designated as a Modified Buffer Area. The portion of the parcel designated as a Modified Buffer Area will be subject to the Modified Buffer Area requirements. Portions of the property that are not designated as a Modified Buffer Area shall comply fully with the 100-foot Buffer restrictions; and

- Any proposal by the County for designation of an area as a MBA shall include, at a minimum, a written evaluation and supporting reasons which demonstrate the degree to which the proposed MBA does not perform each of the following Buffer functions:

    1. Provide for the removal or reduction of sediments, nutrients, and potentially harmful or toxic substances in runoff entering the Bay and its tributaries;

    2. Minimize the adverse effects of human activities on wetlands, shorelines, stream banks, and aquatic resources;

    3. Maintain an area of transitional habitat between aquatic and upland communities;

    4. Maintain the natural environment of streams; and

    5. Protect riparian wildlife habitat.

III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

The County's development review process through which proposed developments are reviewed in accordance with the County's Subdivision Regulations and Critical Area Ordinance is the principal

program that is pertinent to the regulation of development in the Critical Area. Federal and State regulatory programs may place restrictions on a proposed activity because of its impacts on water quality, flooding, or significant natural resources such as tidal and nontidal wetlands or rare and threatened species habitat, but they generally do not otherwise place restrictions on the density or location of a proposed activity.

COUNTY DEVELOPMENT REVIEW PROCESS

The Department of Planning and Zoning is responsible for the approval of all subdivision of land. The subdivision process in Harford County is organized into a step-by-step approach. Concept plans are required for larger projects so that major issues associated with these projects can be resolved early, eliminating costly delays in the later stages of the review of a project. These larger projects requiring concept plans, subdivision plans or site plans, require that a community input meeting be held prior to plan submittal. Any projects proposed for development within the Critical Area must have a Critical Area Report as part of the submission to the County. All subdivision plans, special exceptions, rezonings and variances must comply with the Critical Area Criteria. Concept plans are approved by the Department of Planning and Zoning after they have been circulated among relevant State and local agencies for their review and comment. Review agencies include the Department of Public Works, Health Department, Board of Education, Department of Parks and Recreation, State Highway Administration, Soil Conservation District, and other relevant Federal, State, and County agencies.

At the preliminary plan stage, sufficiently detailed information, including Critical Area Criteria, is to be provided concerning the project so that a decision can be made on the acceptability of the project subject to the review of engineering design information submitted as part of the final plan review. Preliminary plans are reviewed by a Development Advisory Committee (DAC) composed of local and State agencies in addition to the Department of Planning and Zoning. DAC meetings are held to address concerns identified by the reviewing agencies. These concerns may then need to be resolved. prior to the project being approved. Any approved preliminary plan must be consistent with the concept plan submitted for the project.

Engineering designs of the location of proposed lots, building setbacks, roads, public utilities, etc., developed in accordance with the approved preliminary plan must be submitted at the final plan stage. The final plan is generally accompanied by a Public Works Agreement and/or Public Works Utility Agreement that specifies the developer's commitment to ensure that public utilities, roads, etc., will be provided in accordance with the final plan, along with a bond or other surety agreement to allow the County to take remedial action if they are not adequately constructed. Building permits are reviewed for zoning conformance by the Department of Planning and Zoning. Appeals of subdivision and building permit decisions by the Department of Planning and Zoning may be made to the County Administrator and the Circuit Court. The Department of Public Works, with technical assistance from the Soil Conservation District, is responsible for review of sediment control and stormwater management plans that are to be approved before the final plat is signed. The Department of Public Works is also responsible for development and revision of the County's Water and Sewer Plan.

Requests for rezonings are acted upon by a Hearing Officer, acting as an agent of the County Council. The Department of Planning and Zoning provides technical information and policy recommendations to the Hearing Examiner for consideration in making a decision. Prior to submittal to the Hearing Examiner, proposed rezonings are reviewed by the Planning Advisory Board, which may make additional recommendations. The County Council hears appeals of the Hearing Officer's decisions and makes the

final decision on Comprehensive Rezonings and revisions to Comprehensive Plans, and County Ordinances based upon the recommendation of the Department of Planning and Zoning and other pertinent local agencies. The County Council's decision on these matters may be appealed to the Circuit Court.

IV. MODIFICTAIONS MADE TO LOCAL REGULATIONS AND PROGRAMS

THE NATURAL RESOURCES DISTRICT

The Critical Area Ordinance is fully consistent with the detailed requirements of the Critical Area Program. The criteria for Habitat Protection Areas protects the resources within the Critical Area and the Natural Resource District criteria protects the same resources outside of the Critical Area.

SUBDIVISION REGULATIONS

The County's Subdivision Regulations play an important role in meeting the Critical Area Program Development Criteria, particularly in terms of the information required for a concept plan or preliminary plan application, the factors to be considered in approving such plans, and the information that must be provided on final plats and supporting documents.

APPLICATION REQUIREMENTS FOR SUBDIVISIONS

With regard to information requirements for concept plans and preliminary plans, the most important requirement is that adequate information be supplied on the nature, location, and density of the proposed development. To cover projects both inside and outside of the Critical Area, this includes conceptual plans for sediment and erosion control, stormwater management, and information on the geomorphological and natural features found on or immediately adjacent to the site, including the following:

- Topography;
- Soils present, including identification of the location of soils with development constraints (highly erodible soils, hydric soils, etc);
- Steep slopes between 15% and 25%, and slopes greater than 25%;
- 100-year floodplain as identified in the FEMA flood insurance study or in more detailed studies undertaken or approved by the County;
- Perennial and intermittent streams and tidal waters;
- Tidal wetlands;
- Nontidal wetlands identified by existence of predominantly hydric soils or obligate, facultative wet hydrophytic vegetation;

- Extent of mapped Natural Resources District including any required Buffer areas;
- Extent of Critical Area including required Buffer/Modified Buffer areas;
- Extent of limit of disturbance;
- Vegetative cover (particularly wooded areas); and
- Important areas as have been identified by the State or County. Maps showing the geographical location of these areas are available for review at the Harford County Department of Planning and Zoning. Such areas include the following:

    4. Habitats of State Designated Threatened or Endangered Species, Species of Local Significance, and Species in Need of Conservation;

    5. State Natural Heritage Areas;

    6. Anadromous fish spawning and nursery areas;

    7. Submerged aquatic vegetation beds;

    8. Other areas identified by State and Federal agencies as important plant or wildlife habitat areas; and

    9. Habitats determined to be of special significance because they contain uncommon species or those of limited occurrence in the jurisdiction, or the habitat contains an unusual diversity of species, or species are found in unusually high concentrations.

PLAN APPROVAL REQUIREMENTS FOR SUBDIVISIONS

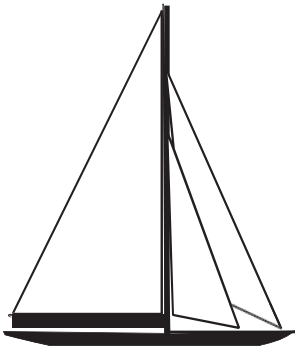
Factors that shall be considered in determining whether proposed concept plans and preliminary plans will be approved include:

- Location of the site and distribution of land use on or adjacent to the site;
- Consistency with the Critical Area regulations;
- Potential impacts on water quality;
- Potential impacts on significant natural features (tidal and nontidal wetlands, wooded areas, plant and wildlife habitat identified as State or local importance, etc.);
- Limitations on development due to soil or slope constraints;
- Existing and proposed roads and transportation networks;
- Proposed open space;

- Location and adequacy of proposed utilities; and

- Proposed sediment and erosion control and stormwater management plans.

Regarding the approval of final plats, detailed information is required on lot lines, building setbacks, roads, utilities, and natural features to be left undisturbed, including any Buffer areas needed to address requirements of the Natural Resources District (outside of the Critical Area) or the Critical Area. It shall also be required that the final plat be accompanied by a Public Works Agreement certifying that sediment control and stormwater management plans have been approved, and that measures such as conservation easements, homeowner agreements, or similar instruments have been instituted to ensure that Buffer areas, nontidal wetlands, and other significant natural features are protected in perpetuity.



Chapter 3

WATER DEPENDENT FACILITIES

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

The Criteria defines water-dependent facilities as "those structures or works associated with industrial, maritime, recreational, educational, or fisheries activities that require location at or near the shoreline within the Buffer." Examples of such facilities are ports, the intake and outfall structures of power plants, water-use industries, marinas and other boat docking structures, public beaches, and other public water-oriented recreation areas (ie, community and con-commercial activity areas), and fisheries activities.

According to the Criteria, water dependent facilities can be located in the Buffer area of those lands designated as IDA or LDA if it can be shown that:

- The facility is water-dependent;
- The project meets a recognized private right or public need;
- Adverse effects on water quality, fish, plant, and wildlife habitat are minimized;
- Insofar as possible, nonwater-dependent structures or operations associated with water-dependent projects or activities are located outside of the Buffer.

Facilities associated with public beaches and other public water-oriented recreation/education areas, fisheries activities, or scientific research efforts can be located in the Buffer of lands designated as RCA provided that certain conditions are met.

To ensure that the potential adverse impacts of water-dependent facilities are minimized, the Criteria require that local jurisdictions develop a planning process to ensure that the following factors are considered in determining areas suitable for new or expanded water-dependent facilities:

- The activities shall not significantly alter existing water circulation patterns or salinity regimes;
- The water body upon which the activities are proposed has adequate flushing characteristics in the area;

Disturbance to wetlands, submerged aquatic vegetation, or other areas identified as important aquatic habitat will be firstly avoided or minimized;

- Adverse impacts to water quality that may occur as a result of the activities, such as nonpoint source run-off, sewage discharge from land activities or vessels, or pollutant run-off from boat cleaning and maintenance operations, are firstly avoided or minimized;

- Shellfish beds shall not be disturbed or be made subject to discharge that will render them unsuitable for harvesting;

- Dredging shall be conducted in a manner, and using a method, which causes the least disturbance to water quality and aquatic and terrestrial habitats in the area immediately surrounding the dredging operation or within the Critical Area, generally;

- Dredged spoil shall not be placed within the Buffer or elsewhere in that portion of the Critical Area that has been designated as a Habitat Protection Area except in previously approved channel maintenance disposal areas or as used for shore erosion protection measures;

- Interference with the natural transport of sand shall be firstly avoided minimized.

The Criteria also establish specific conditions relating to the following types of water-dependent facilities: ports, industrial facilities, marinas and other commercial maritime facilities, community piers and other related noncommercial boat docking and storage facilities, public beaches and other public water-oriented recreation or education areas, scientific research facilities and commercial fishing facilities.

New commercial marinas and related maritime facilities are not allowed in RCA. However**,** existing commercial marinas located within the RCA may be permitted to expand if it can be shown that the expansion will result in an overall improvement in water quality at the marina site or a reduction in the pollutant loading from the marina. New marinas, which can be located in LDA or IDA, must establish a means of minimizing the discharge of bottom wash waters into tidal waters as a condition for their approval. New and existing marinas must meet the sanitary requirements for such facilities established by the Maryland Department of the Environment (MDE).

New or expanded community marinas and other noncommercial boating, docking, and storage facilities may be located in the Buffer throughout the Critical Area if they meet the following conditions:

- The facilities do not offer food, fuel, or other goods and services for sale and do provide adequate and clean sanitary facilities;

- The facilities are community-owned, established, and operated for the benefit of the residents of a platted and recorded riparian subdivision;

- The facilities are associated with a residential development and are consistent with all of the standards and regulations for the Critical Area;
- Disturbance to the Buffer is the minimum necessary to provide a single point of access to the proposed facilities (3 feet wide, or 6 feet wide to accommodate Americans With Disabilities (ADA) wheel chair access);

- If community piers or slips are provided as part of a development built or constructed after June 24, 1988, private piers in the development are not allowed**.** Private piers are not otherwise regulated by the Criteria; and

- The number of slips or piers, permitted at the facility shall be the lesser of a or b below:

  a. One slip for each 50 feet of shoreline in the subdivision in the IDA and LDA, and one slip for each 300 feet of shoreline in the subdivision in the RCA; or

  b. A density of slips or piers according to the following:

Number of Platted Lots or Dwellings in the Critical Area Subdivision	Number of Permissible Slips and Private Piers
up to 15	1 for each lot
16 – 40	15 or 75%, whichever is greater
41 – 100	30 or 50%, whichever is greater
101 – 300	50 or 25%, whichever is greater
Over 300	75 or 15%, whichever is greater

Public beaches or other public water-oriented recreation or education areas including, but not limited to, publicly owned boat launching and docking facilities and fishing piers are allowed in the Buffer within Intensely Developed Areas, as well as areas for passive recreation, nature study, hunting and trapping, and for education. Elsewhere in the Critical Area Buffer, they must meet the following conditions:

- Adequate sanitary facilities are provided;

- Service facilities are located outside the Buffer;

- Permeable surfaces are used as the primary surfacing material;

- Disturbance to vegetation is firstly avoided or otherwise minimized;

- Habitat Protection Areas are protected; and

- All nonwater-dependent structures or facilities associated with these projects are located outside of the Buffer.

Water-dependent scientific research facilities operated by governmental agencies or educational institutions can be located in the Buffer as long as all associated nonwater-dependent structures or facilities are located outside of the Buffer.

Commercial water-dependent fisheries facilities including, but not limited to, structures for crab-shedding, fish off-loading, docks, and shore-based facilities necessary for fisheries activities are allowed in the Buffer throughout the Critical Area.

II. SIGNIFICANT ISSUES AND FACTORS

The major issues associated with water-dependent facilities are development of a planning process for identification of areas suitable for sites of water-dependent facilities, and development of an implementation program for ensuring that new or expanded facilities are developed in a manner that minimizes adverse impacts on the Buffer, on water quality and on fish, plant and wildlife habitat.

DEVELOPMENT OF PLANNING PROCESS FOR THE LOCATION OF WATER-DEPENDENT FACILITIES

There are two existing commercial/industrial facilities that require intrusion into the Buffer. The Vulcan Materials quarry operation along the Susquehanna River has docking facilities to allow water transport of the rock, sand, and gravel materials mined there. The other facility is the Exelon Power Company electric generating plant on the Perryman peninsula, which requires a utility corridor for secondary intake and output water pipes.

Table 2 lists the existing marinas, boat launching ramps and associated facilities in Harford County's Critical Area. Figures 4 and 5 show the locations of these facilities in the Critical Area. The potential for additional marinas in the County is not great because of the shallow water depths, extensive marsh areas, and the limitation on large boat transit into the Chesapeake Bay due to the Amtrak bridges that cross the Gunpowder and Bush Rivers.

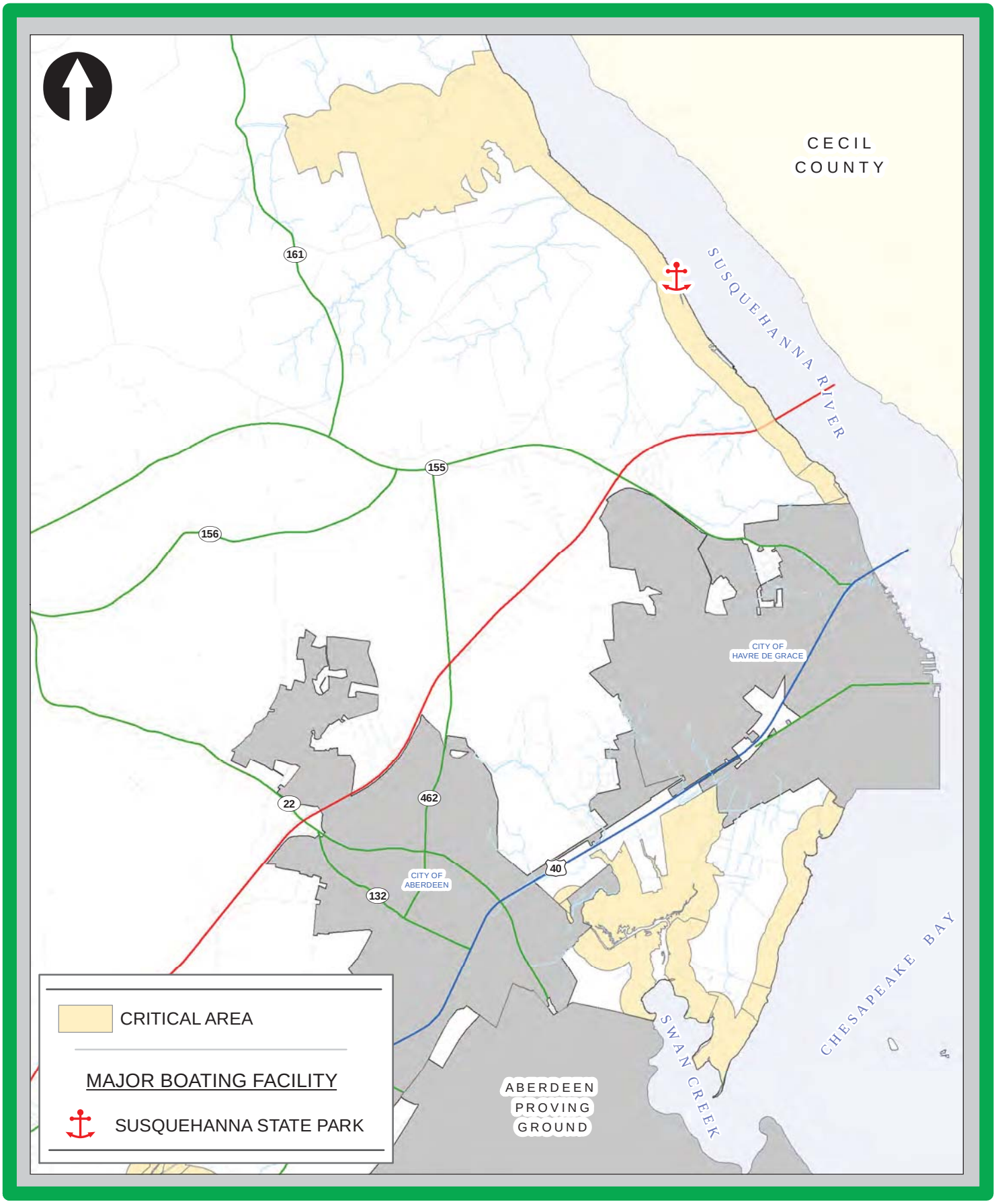
TABLE 2

EXISTING MARINAS AND OTHER RECREATIONAL BOATING FACILITIES IN HARFORD COUNTY'S CRITICAL AREA

MARINAS			PIERS AND LAUNCHES	
Bush River Yacht Club Long Bar Harbor Road Abingdon, MD 21009 410-676-1122	3 acres, 145 slips		Elks Club Riverview Drive Abingdon, MD	pier
Gunpowder (Oasis Marina) 510 Riviera Drive Joppa, MD 21085	11 acres, 290 slips, 1 launch, 180 storage spaces		Freys Landing Freys Road	undeveloped launch
Otter Point Yacht Club 600 Otter Point Road Abingdon, MD 21009 410-676-1744	PRIVATE 0.3 acres, 58 slips, 32 parking spaces		Mariner Point Park Kearney Drive Joppa, MD 21085	39 acres, 4 launches developed park land
Flying Point Marina 324 Flying Point Road Edgewood, MD 21078 410-676-7311	10 acres, 119 slips, 125 parking spaces, 1 launch		Otter Point Landing Otter Point Road	1 acre, 1 fishing pier, 1 launch
Long Bar Harbor Marina 4228 Birch Avenue Abingdon, MD 21009 410-679-0880	7.5 acres, 32 slips, parking spaces		Willoughby Beach Public Landing Kennard Avenue	1.3 acres, pier, launch
			Susquehanna State Park (Lapidum)	launch
			Flying Point Park Kennard Avenue Edgewood, MD	fishing pier, 2 launches

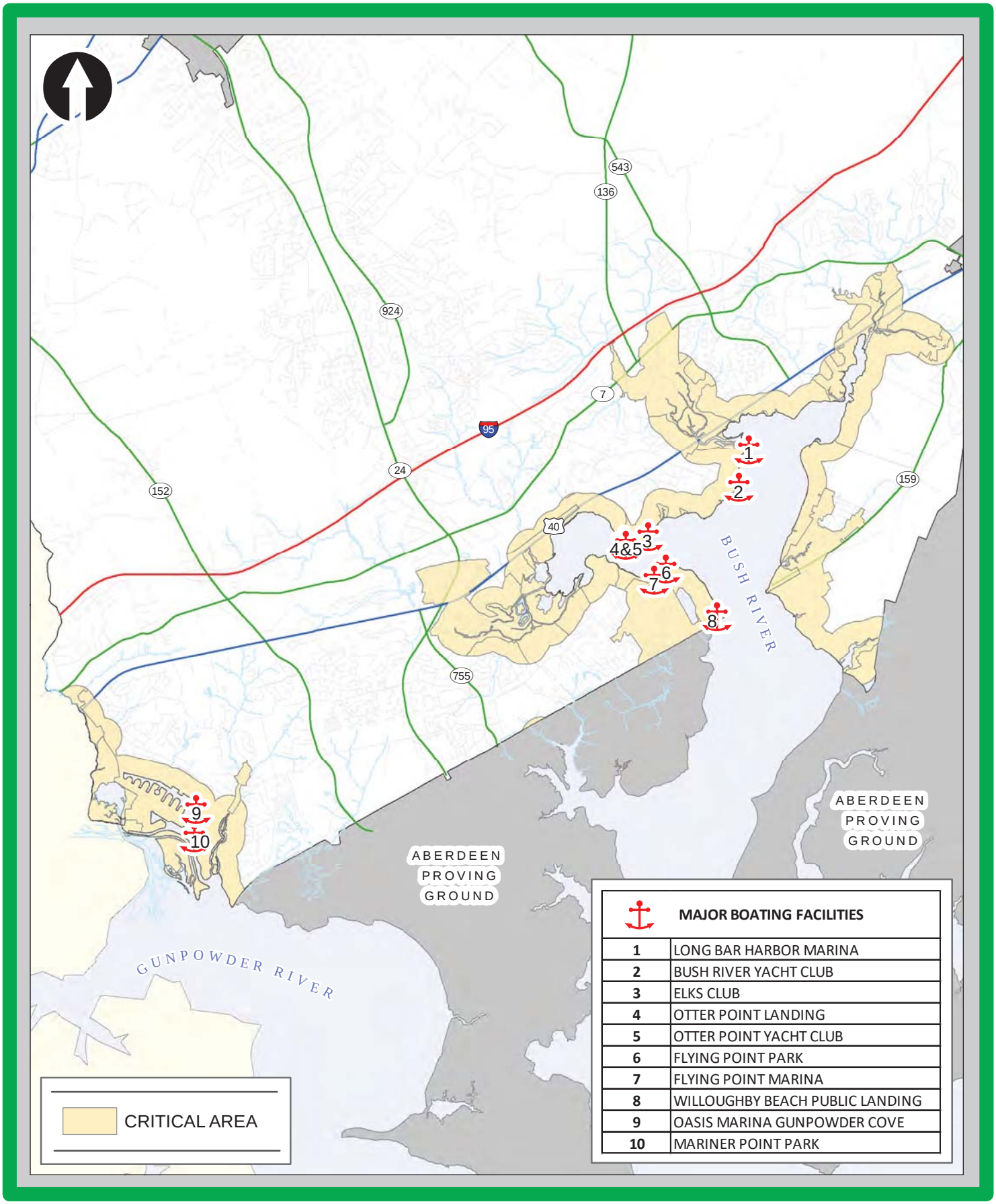
Sources: Harford County Chamber of Commerce
Harford County Parks and Recreation Harford County
Department of Planning and Zoning

FIGURE 4



MARINAS AND PUBLIC LANDINGS IN THE SUSQUEHANNA RIVER &
SWAN CREEK PORTIONS OF THE CRITICAL AREA

FIGURE 5



MARINAS AND PUBLIC LANDINGS IN THE GUNPOWDER RIVER &
BUSH RIVER PORTIONS OF THE CRITICAL AREA

Grounds. Nevertheless, Harford County shall consider several factors when evaluating proposals for new or expanded marinas (or other water-dependent facilities) in the Critical Area, detailed below:

- Significant impacts to submerged aquatic vegetation beds, marsh areas, spawning or nursery areas of anadromous fish, the habitats of rare or threatened species and species of local significance, or habitats of local significance are not unacceptable. Less severe impacts require mitigation. In addition, mitigation must be provided for any significant impacts on shallow water habitats (areas with depths of less than four feet) from dredge or fill operations.

- Areas with high shoaling and sedimentation rates or long access channels shall be avoided as sites for water-dependent facilities due to the significant amount of dredging required. The impacts of the proposed dredging on aquatic habitat, circulation pattern, salinity regimes, and the availability of appropriate dredge material disposal sites shall also be considered. Areas designated as Habitat Protection Areas, including all Buffers, are not acceptable areas, except where there is an existing channel maintenance dredged material disposal area, or where the dredged material is used for shore erosion protection. Utilization of the Best Management Practices for reducing impacts associated with dredging operations, as described in Appendix E, is required.

- Interference with navigation, as determined by Maryland Department of the Environment, caused by the proximity of a boating facility near State or federally maintained channels constitutes grounds for denial of a proposed project.

- Location of new facilities in areas with flushing rates of five days or greater – as determined by using the EPA flushing model documented in the publication, *Coastal Marinas Assessment Handbook* – are considered unacceptable. Projects in proposed areas with poor to fair water quality conditions, as determined by State Water Quality Standards, are required to show that stormwater management measures and associated Best Management Practices instituted as part of the project will result in a net improvement in water quality conditions. Projects proposed in good water quality conditions are required to show that they will not result in a deterioration of water quality conditions.

- New nonwater-dependent facilities must be located outside of the Buffer. Adequate road access to the site must be available, and appropriate stormwater management measures and sewage disposal facilities must be provided. The location of new marinas and commercial or industrial operations will be prohibited in areas designated as RCA. As a condition for approval of the expansion of existing marinas in the RCA, appropriate measures to improve the water quality conditions are required. Water quality conditions at the site and the quality of the runoff from the site shall be improved. Such improvement may include the installation of pump-out facilities.

DEVELOPMENT OF AN APPROPRIATE IMPLEMENTATION PROGRAM

In order to ensure that the potential adverse impacts of new or expanded water-dependent facilities are adequately addressed, provisions enacting the considerations discussed in the previous section have been included in the Zoning Code. The type of information required of an applicant so that the Department of Planning and Zoning can adequately review proposed projects is discussed in detail in Appendix E. Such information includes the relationship of the proposed site to submerged aquatic beds, wetlands, and other

significant fish, plant, and wildlife habitats, existing substrate conditions, existing water depths, water quality conditions, and the characteristics for the on-shore portion of the facility.

It is also important to ensure that appropriate Best Management Practices are utilized for activities at the marinas in order to minimize adverse impacts on water quality and aquatic resources. Best Management Practices include the use of porous surfaces and retention of vegetation wherever possible, provision of adequate toilet facilities and trash receptacles, and in the case of boat washing facilities, the use of measures to prevent discharge of foulants, oil/grease, and detergents to tidal waters, etc. In addition, provision has been made for review by the Department of Planning and Zoning for proposed community piers and public access facilities to ensure that the conditions of the Criteria described in Section I above are met.

III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

FEDERAL REGULATORY PROGRAMS

In accordance with Section 10 of the Rivers and Harbor Act of 1899 and Section 404 of the Clean Water Act of 1977, the U.S. Army Corps of Engineers, in conjunction with other federal agencies, regulates any construction, excavation, or deposition of materials in navigable waters and the discharge of fill or dredged material in all other waters of the United States, including adjacent wetlands. Thus, marinas, piers, mooring buoys, boat launching ramps, and any other facilities placed in wetlands, tidal waters, or streams must receive a permit from the Corps of Engineers. The roles of various federal agencies in this regulatory process are shown in Table 3. In making decisions regarding proposed projects, the Corps also considers any comments submitted by State and local agencies, interested organizations, or the public. The main factors considered by the Corps when reviewing proposed projects are:

- Keeping waterways open to navigation;
- Prohibiting obstruction of channels or access to navigable waters;
- Potential impact of the project on fish and wildlife resources;
- Potential impact of the project on water quality;
- Protection of historical, scenic, and recreational areas;
- Impacts of dredging activities; and
- Selection of appropriate dredged material disposal areas.

As noted below, the Corps must receive water quality certifications and Coastal Zone Management consistency determinations from the State prior to approving project proposals.

TABLE 3

FEDERAL AGENCIES INVOLVED IN REVIEW OF MARINAS AND OTHER WATER-DEPENDENT FACILITIES

AGENCY	AUTHORITY	FUNCTION
U.S. Army Corps of Engineers	Section 404, Federal Clean Water Act	Reviews and evaluates applications, issues public notices, coordinates with other agencies at all levels, issues or denies permits.
	Section 10, Rivers and Harbors Act of 1899	
	National Environmental Policy Act	
	Fish and Wildlife Coordination Act	
U.S. Department of the Interior: Fish and Wildlife Service	National Environmental Policy Act	Reviews and evaluates projects based upon the impacts to fish and wildlife.
	Fish and Wildlife Coordination Act	
Environmental Protection Agency	Federal Clean Water Act	Reviews and evaluates the impacts on water quality and aquatic resources. Has final authority regarding these concerns.
National Marine Fisheries Service	Fish and Wildlife Coordination Act	Reviews and evaluates projects based upon the impacts to marine fisheries and shellfish fisheries.

STATE REGULATORY PROGRAMS

All activities proposed to be undertaken in tidal waters or tidal wetlands must receive a State wetlands permit or license from the State of Maryland. Specifically, activities occurring below the mean high tide line require a wetlands license from the Board of Public Works. Activities proposed in areas containing marsh vegetation that are periodically flooded (at least once a year) require a permit from the Department of Environment. In both cases, application is made to the Wetlands Permits Division of the Department of Environment since it advises the Board of Public Works on wetlands applications. The Wetlands Permits Division coordinates its review of proposed projects with the Corps of Engineers and considers comments made by other State agencies, local governments, and other interested parties in making its decisions. The roles played by the various State agencies in reviewing proposed projects, including marinas and other related facilities, are summarized in Table 4. The factors considered by the Wetlands Division in making a decision on proposed projects include the following:

- The location of a boating facility or its associated activities should be such that it does not create

or aggravate:

a. Adverse impacts on wetlands, aquatic resources, and navigation;

b. Congestion and safety problems;

c. Turbidity or other adverse water quality impacts;

d. Shore erosion problems; and/or

e. Other adverse environmental impacts.

- Encouragement of centralized, common boating facilities for subdivision developments or communities;

- Limitations on artificial channeling and avoidance of dead-end or deep canals;

- Encouragement of extending docking facilities to deep water as an alternative to dredging, when feasible;

- Ecologically sound design of bulkheads and shore erosion protection measures (e.g., placement behind, rather than in front of, a marsh fringe, use of vegetative measures/rip rap whenever possible), and normally not permitting such work where it would adversely affect navigation, surface drainage, significant flora or fauna, and the like;

- Use of only such filling as is necessary for a shore protection work and prohibition on filling to create fast land;

- Denial of nonwater-dependent uses of wetlands (i.e., residential structures, parking lots, restaurants or factories);

- Prohibition of navigational or water exchange obstructions; and

- Encouragement of the siting of boat facilities in areas with optimum conditions (e.g., location in lower tributary is preferred over headwater areas to encourage flushing and proximity to deep water; a location site that does not interfere with existing fishing, water recreation, bridges, and the like; location to avoid necessity of crossing vegetated wetlands; and limitation of structural encroachment into channels).

TABLE 4

STATE AGENCIES INVOLVED IN REVIEW OF MARINAS AND OTHER WATER-DEPENDENT FACILITIES

AGENCY	AUTHORITY	FUNCTION
Maryland Department of Environment	Title 16, Environment Article	Reviews and evaluates applications for issuance or denial of wetlands licenses and permits, provides recommendations for wetland protection and preservation.
	Tidal Wetlands Acts	
	Section 401 & 404, Federal Clean Water Act	Reviews and evaluates COE permit applications for compliance with water quality standards, issues Water Quality Certificates.
Maryland Department of Environment, Nontidal Wetlands Division	Title 9, Environment Article	Reviews and evaluates applications for wetland permits, coordinates with COE for Section 404 Wetlands Joint Application Permits, issues or denies wetland permits.
Board of Public Works	Tidal Wetlands Acts	Reviews and issues wetland licenses for work in State wetlands, provides advisory comments from State Wetlands Permits Division.
Department of Natural Resources & Critical Area Commission	Section 10.2A.03, Natural Resources Article	Reviews permits for impacts to State's rare, threatened, or endangered species, colonial waterbird nesting sites, historic waterfowl staging areas, and forest interior dwelling birds.
	COMAR 27.01.09.03	
	COMAR 27.01.09.04	
	COMAR 27.02.05.12	
Department of Natural Resources Fisheries Service	Section 4.2.A.03, Natural Resources Article	Reviews permits for impacts to anadromous fish.
	COMAR 27.01.09.04	
	COMAR 27.02.05.12	

LOCAL REGULATIONS

Within the Chesapeake Bay Critical Area, the County's Natural Resources District (NRD) regulations have been replaced with the Critical Area Program Ordinance, as described above in Chapter 2. County regulations also limit the extension of structures from the shoreline such as docks, piers, or boathouses to no more than 25% of the distance to the opposite shore or two hundred fifty (250) feet, whichever is less. Presently, marinas, boat launching facilities, and storage and repair facilities are permitted by right in areas zoned B3, CI or GI (General Business, Commercial and General Industrial Districts) and by Special Exception in other areas.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

As part of its Critical Area Program, Harford County has instituted a planning process for the review and approval of proposed new or expanded water-dependent facilities. Proposed facilities will be reviewed to ensure that their adverse impacts are minimized on water quality, water circulation regimes, wetlands, submerged aquatic vegetation and their important aquatic habitats, longshore transport, and the Buffer and other Habitat Protection Areas. The location of new marinas will be prohibited in areas designated as RCA. Appendix E contains a description of the information that will be required for proposals for water dependent facilities and the best management practices that new or expanded facilities will be required to utilize.

Provision has also been made in the Critical Area for review and approval by the Department of Planning and Zoning of community piers to ensure that they meet the slip limitations of the Criteria, namely that they serve the residents of riparian subdivisions approved in accordance with the provisions of the Criteria (discussed in Chapter 2 and elsewhere), do not offer food, fuel, etc. for sale, provide adequate sanitary facilities, and are used instead of private piers.

Non-water dependent structures, including boat houses and renewable energy generating systems, shall not be permitted on piers, whether or not they are privately, publicly, or commercially owned.

The Zoning Code contains the following requirements for public beach areas or other public water-oriented recreation or education areas to be located in the Buffer including publicly owned boat launching and docking facilities:

- Adequate sanitary facilities shall be present;
- Service facilities are located outside of the Buffer;
- Permeable surfaces are used wherever possible (not eligible for mitigation credit); and
- Disturbance to natural vegetation is firstly avoided or otherwise minimized.

Similarly, water-dependent research facilities and activities proposed within the Buffer are required to ensure that adverse impacts are minimized on water quality, significant fish, plant, and wildlife habitat, and ensure that associated nonwater-dependent structures or facilities are located outside of the Buffer.

Chapter 4

SHORE EROSION PROTECTION

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

The Criteria require that local jurisdictions designate and map the following shoreline areas:

- Shoreline areas where no significant shore erosion occurs;
- Shoreline areas of erosion where nonstructural measures would be a practical and effective method of erosion control; and
- Shoreline areas of erosion where only structural measures would provide effective and practical erosion control.

Areas of significant erosion are defined as those areas that erode two feet or more per year. The Criteria further provide that structural control measures shall be used only in areas where nonstructural measures are impractical or ineffective. Where structural erosion control is necessary, the measure that best provides for conservation of fish and plant habitat shall be used where practical and effective.

II. THE LIVING SHORELINE PROTECTION ACT OF 2008

In 2008, the Living Shoreline Protection Act was passed by the Maryland General Assembly. It required that improvements to protect a person's property against erosion shall consist of nonstructural shoreline stabilization measures that preserve the natural environment, except in certain situations. The Maryland Department of Environment will identify and map the areas that are appropriate for structural shoreline stabilization (ex. bulkheads/rip rap). Structural measures may be permissible in some areas where the property owner can demonstrate to Maryland Department of Environment's satisfaction that nonstructural measures are not feasible due to heavy tides, excessive erosion, and/or areas that are too narrow for effective use of nonstructural shoreline stabilization measures.

APPROPRIATE USE OF STRUCTURAL AND NONSTRUCTURAL MEASURES FOR SHORELINE EROSION CONTROL

It should be noted that most of the County's tidal shorelines, particularly those along the Chesapeake Bay, are located on the Aberdeen Proving Ground that is in the jurisdiction of the federal government. Significant portions of the County's shoreline are bordered by marsh areas, have no appreciable erosion, and thus need no shore erosion protection. Therefore, according to the Criteria, nonstructural

measures must be the first type considered along the remainder of the shoreline when selecting an appropriate shore erosion protection measure. A description of historical shore erosion processes in Harford County can be found in Appendix F.

The final determination of whether a nonstructural measure would be appropriate at a particular site will require field analysis by the Maryland Department of Environment. Nevertheless, certain decisions can be made as to whether nonstructural measures are appropriate in a given area. Along certain shorelines, the use of nonstructural measures may not be appropriate because of a predominance of existing structural measures or the presence of a water-dependent facility requiring a bulkhead for its operation.

Nonstructural shore erosion protection can take several forms. The simplest method involves planting existing shores with marsh grass throughout the intertidal zones as well as above the high tide line. Such an approach is likely to be appropriate in cases where the shores are sandy, with an appropriate near-shore profile and a continued source of sand is available for long-shore transport. In other cases, new shores can be created by sloping the existing bank seaward and placing stone containment structures at the edge of the new shore. Stabilization of the new shore is accomplished by planting appropriate vegetative materials. In all cases, at least six hours of direct sunlight along the shoreline is needed to ensure appropriate vegetative growth.

There are certain situations located along the shoreline where slope stabilization should occur. These areas are defined as where erosion of the slope in the Buffer is occurring above mean high water. Stabilization of the slope may only occur in accordance with an approved Buffer Management Plan reviewed and approved by Planning and Zoning, and in consultation with the Soil Conservation District and the Critical Area Commission.

ENSURING APPROPRIATE USE OF SHORE EROSION PROTECTION MEASURES

The Criteria require that nonstructural measures be used whenever possible in order to conserve and protect plant, fish, and wildlife habitat. In cases where structural measures must be used, the measure that is practical and effective while best providing for conservation of fish and plant habitat shall be used. In most cases, the use of stone revetments (rip-rap) would be most appropriate. They can be designed to fit the existing shape and height of the shoreline, with the slope and rough surface area reducing wave energy. Also, a revetment's increased surface area (compared to a bulkhead) and surface irregularities produce excellent habitat for marine animals and do not create a barrier for the movement of creatures between upland areas and the water.

Provisions in the Zoning Code require an Erosion and Sediment Control Plan to be submitted to Planning and Zoning where structural measures must be used. The information required by the Army Corps of Engineers and the Department of the Environment for a 404 Joint Permit Application is sufficient for submission as an Erosion Control Plan.

III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

STATE AND FEDERAL REGULATORY PROGRAMS

STATE WETLANDS PERMIT/LICENSE

Building a shore erosion control structure usually involves construction at, or seaward of, mean high tide, and therefore, compliance with State requirements for wetland alteration is necessary. The State Wetlands Law (Environment Article, Title 16) requires property owners to obtain permission from the State before altering tidal wetlands. Alterations include any form of filling or dredging; construction of bulkheads, revetments, boat ramps, below-ground utilities, storm drain structures, groins, breakwaters, jetties, and similar structures or activities.

A State wetlands license is required from the Board of Public Works in the case of projects proposed below mean high tide. A State wetlands permit is required from the Maryland Department of Environment in the case of projects proposed waterward of the mean high tide line (ie, projects in or over the water) that are subject to periodic flooding (at least once a year), or that support aquatic growth. In the case of both types of projects, application should be made to the Department of Environment since it makes recommendations to the Board of Public Works on projects requiring a State wetlands license. In its review of such projects, the Department of Environment examines the project's potential adverse environmental impacts, particularly those affecting vegetated marsh areas and areas of submerged aquatic vegetation.

U.S. ARMY CORPS OF ENGINEERS PERMITS

A Section 10 and/or Section 404 permit from the U.S. Army Corps of Engineers is also likely to be required for installation of shore erosion control measures. In the use of nonstructural measures and revetment (rip-rap) structures, a general permit may be obtained which gives automatic approval to a project if certain conditions are met and State approval is obtained.

EROSION AND SEDIMENT CONTROL PLAN

If a shore erosion project involves any substantial soil disturbance, an Erosion and Sediment Control Plan for the project must be approved by the Soil Conservation District and the County.

STATE TECHNICAL AND FEDERAL ASSISTANCE PROGRAMS

LIVING SHORELINES PROGRAM

Maryland Department of Natural Resources distributes funds for this program and provides technical and financial assistance to property owners with shore erosion problems. The office responds to requests by inspecting the property, where inspectors will give the property owner a package that includes a loan application, and explain the loan process. Under the authority of Natural Resources Article 8-1001 et. seq., individual landowners, municipalities, and counties may apply for 5, 15, and 20 year interest-free loans for living shoreline projects. Landowners who do not receive loans can still receive technical assistance and advice from the Department of Natural Resources and the Department of the Environment.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

Harford County has a two-step approach to ensuring that appropriate shore erosion protection measures are used along its shorelines. First, a provision of the Critical Area requires that shore erosion problems be addressed by considering nonstructural measures first, then revetments, and then bulkheads to be used only where they are needed as part of a water-dependent facility or where nonstructural or revetment measures would be impractical or ineffective. These provisions were strengthened per the requirements of the Living Shorelines Protection Act of 2008, mentioned previously.

Secondly, staff in the Department of Planning and Zoning undertake a public awareness/educational program by meeting with landowners with eroding shorelines in order to let them know that nonstructural measures are the preferred approach and that interest-free funding can be obtained from the State Nonstructural Shore Erosion Control Program. As mentioned earlier in this chapter, structural measures will only be permitted in certain circumstances. Maryland Department of the Environment will decide if structural shore erosion control is the best option by taking into account all conditions and factors found on site.

Chapter 5

FOREST AND WOODLAND AREAS

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

The protection and maintenance of wooded areas is a major objective of the Chesapeake Bay Critical Area Program's Development Criteria. Wooded areas are important because of their value for water quality protection (through sediment and nutrient removal, shading of streams, etc.), wildlife habitat, watershed protection, recreation, timber production, and aesthetic enhancement.

The Criteria recognizes two types of wooded areas: forests and developed woodlands. Forests are defined as "biological communities dominated by trees and other woody plants, excluding orchards, covering a land area of 10,000 or more square feet, including an area having at least 100 trees per acre, if at least 50% of the trees have a DBH of 2 inches or more, and may have been cut, but is not cleared." Developed woodlands are defined as "an area of trees or natural vegetation that may be interspersed with residential, commercial, industrial, institutional, or recreational development". The same protection measures required for areas designated as forest are also required for those areas designated as developed woodlands.

The Criteria specify the following requirements regarding wooded areas in the Critical Area. In addition, it should be noted that Chapter 2 contains other requirements regarding limitations on the clearing of wooded areas for development, and the requirements for canopy replacement under specific conditions:

- Forests and developed woodlands shall be identified and mapped in the Critical Area;
- Wooded areas that have Habitat Protection Areas shall be identified and mapped (see Chapter 9);
- Incentives shall be provided through the utilization of programs to convert current land uses to forested conditions;
- Forest Management Plans shall be developed for all timber harvesting operations affecting one acre or more of forest or developed woodland. Such plans are to include measures to protect surface and groundwater quality, Habitat Protection Areas, and the continuity of habitat (particularly through scheduling the location, size, timing and intensity of harvest cuts, and through the use of afforestation and reforestation). Timber harvesting is not permitted in the Buffer or expanded Buffer. Appendix C, as amended, describes the information required for a Forest Management Plan;

- Sediment Control Plans shall be developed for all timber harvests involving land disturbance of 5,000 square feet or more, including harvests on agricultural land. Appendix C, as amended, describes the information required for a Sediment Control Plan; and

- A Buffer Management Plan shall be prepared for any disturbance of land within the Critical Area Buffer, including any expanded Buffer areas, as specified in Appendix K. Clearing is not permitted in the Buffer.

II. SIGNIFICANT ISSUES AND FACTORS

The following are major factors pertaining to wooded areas in the Critical Area, other than those discussed in Chapter 2 relating to development activities:

- Identification and mapping of wooded areas in the Critical Area, including those containing Habitat Protection Areas; and

- Implementation of programs to encourage conversion of other lands to forested conditions.

IDENTIFICATION AND MAPPING OF FORESTED AREAS IN THE CRITICAL AREA

With assistance from the Department of Natural Resources, wooded areas were originally mapped by the Society of American Foresters through aerial photography interpretation and selective site visits. Wooded areas were remapped in digital format during the 1995 Comprehensive Review of the Critical Area Program. The vegetation layer of the GIS was used to map the extent of forest, as determined from aerial photographs taken in 1990. The forested areas of the County were again mapped in 2009 as part of the Natural Resources Plan update, using 2004 County GIS data.

It should be noted that mapped forest data will have to be refined using information obtained by field investigation at the time an individual Forest Management Plan is developed.

PROGRAMS TO ENCOURAGE WOODLAND STEWARDSHIP

The County promotes the creation of new wooded areas. Emphasis is placed on re-vegetating areas within the 100-foot Buffer adjacent to tidal waters and perennial and intermittent streams beyond the Critical Area. This will promote the stabilization of eroding lands and the planting of trees and shrubs in developed areas to create wildlife habitat. Cooperative efforts with community associations are undertaken to locate unstable areas and to carry out the actual planting and cultivation of the trees, shrubs, and other appropriate vegetation.

III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

FORESTRY INCENTIVE PROGRAMS

In addressing the requirements of the Criteria, Harford County will utilize the following existing programs that promote the retention or conversion of lands as forestland.

FOREST CONSERVATION AND MANAGEMENT PROGRAM

The Forest Conservation and Management Program is a voluntary program administered by the Maryland Department of Natural Resources for owners of contiguous forested parcels of five acres or more excluding the home site. The intent of this program is to preserve forestlands from alternative uses and conserve the resource using the principles of scientific forest management. Under this program, the property owner's tax assessment is reduced to or kept at an agricultural land assessment. To be eligible, the property owner must agree to follow an approved Forest Management Plan prepared by a registered professional forester for at least fifteen years. Newly planted land must be fully established (400 live, well-spaced seedlings per acre) for one year before it qualifies.

WOODLAND INCENTIVES PROGRAM

The Woodland Incentives Program, also administered by the Department of Natural Resources, provides up to 565% of the cost of reforestation, afforestation, and timber stand improvement. Non-industrial, private woodland owners are eligible for the program if they own 5-1,000 contiguous acres of private woodland. The landowner must have a Forest Management Plan that describes and specifies the location of the property on which the practices are to be implemented, and documents the landowner's commitment to use cost-share funds to implement the practices. The landowner must not be receiving or applying for federal cost-share for the same practice on the same acreage, and must agree to limit cost-share funds to a maximum of $5,000 each year or $15,000 for a three-year accomplishment. The owner must also commit to at least fifteen years of management, and allow access to his/her property for periodic inspections.

CONSERVATION BUFFER INITIATIVE PROGRAM

The Conservation Buffer Initiative Program, administered by the Maryland Department of Agriculture, has been established to encourage the planting of streamside buffers on farm land. Farmers who plant wooded or grass buffers along streams or field ditches with fencing, or who provide watercourse access between a waterway and an active livestock pasture with protective fencing, will be eligible for a one-time payment of up to $3,500 per acre. Soil Conservation Districts provide free technical assistance to install the buffer. The farmer must agree to cease all nutrient applications in the planted buffer areas for a contract period of 5 or 10 years. Applications are accepted in the Spring and projects must be completed by the following Summer.

TREE-MENDOUS MARYLAND PROGRAM

The primary purpose of this program is to expand tree planting efforts by encouraging corporations, community groups, service organizations, and individuals to invest in tree planting. Individuals can purchase trees in honor or in memory of friends or loved ones that are planted in memorial groves in the region where the honoree lives/had lived. Community groups can purchase trees for planting on public open spaces.

CONSERVATION RESERVE PROGRAM

This is a federal incentive program to convert highly erodible land from agricultural commodity production to less intensive uses, such as pasture, permanent grass, legumes, forbs, shrubs, trees, or other permanent wildlife cover. Cost-share funding of 50% is available to agricultural producers for tree establishment, as well as annual rental payments for ten years while the practice is being maintained. A Conservation Plan, which covers 10-15 years, must be developed with, and approved by the Soil Conservation Service.

STATE CONSERVATION RESERVE PROGRAM

Maryland's Conservation Reserve Program provides technical and financial assistance to farmers to address soil, water, and other related natural resource concerns on their land. The Program encourages the conversion of highly erodible farm land and other environmentally sensitive areas to permanent woodland, grasses, filter strips, riparian forest, or shallow water habitat. The State Conservation Reserve Program offers $50 per acre of land converted.

CONSERVATION RESERVE ENHANCEMENT PROGRAM

This is a federal-state initiative that pays farmers and landowners to remove environmentally sensitive cropland from production and plant streamside buffers or create wetlands. Landowners must sign a contract agreeing to take these sensitive lands out of production for a 10-15 year period. During this time they must agree to maintain grass, shrubs, trees, or wetlands. The Conservation Reserve Enhancement Program offers a one-time signup bonus of $250 an acre, plus a soil rental rate. Participants in this program also have the option of selling a permanent easement on their land to the state of Maryland. This can be done directly or through cooperative contracts with the Rural Legacy Program. The local Soil Conservation District, the Department of Natural Resources, local government, or local land trust may administer the easements. Cost sharing is also available for the installation of best management practices on lands enrolled by the Conservation Reserve Enhancement Program.

FOREST LEGACY PROGRAM

The Maryland Forest Legacy Program will pay willing private landowners fair market value to acquire permanent conservation easements on their forested lands. To be eligible, the private forest must be located within a forest legacy area. Forest legacy areas must contain forested land that is at risk for conversion to non-forest uses. Also, these areas must provide one or more important public values such as scenic beauty, recreation, streamside forests, fish and wildlife habitat, and threatened and endangered species. Finally, forest legacy areas must allow for the continuation of traditional forest uses such as forest management. To participate in the Forest Legacy Program, a person whose forest land is within a forest legacy area will take two steps. First, the landowners will sell or transfer some land rights, e.g., development rights or public access rights, while retaining ownership and the right to use the property in any way consistent with the easement. Second, the landowners participate in Maryland's Forest Stewardship Program through the development of forest stewardship plans, if they plan to manage an easement area.

Private landowners may contact their local forester for information on how to apply to the Forest Legacy Program. Applications will be prioritized and applicants will be notified if the Forest Service approves the application.

CONSERVATION EASEMENTS

The Maryland Environmental Trust is authorized to grant permanent easements on large acreages and significant habitat areas. Conditions for management are negotiable. An easement donationis eligible for certain tax benefits.

MARYLAND AGRICULTURAL COST SHARE

The Maryland Department of Agriculture's program for control of water pollution provides cost- share assistance for approved Best Management Practices, including windbreaks and buffers, to control water pollution from soil erosion, nutrient runoff, and animal waste on agricultural land.

TREE FARM PROGRAM

The Tree Farm Program is a voluntary program administered in cooperation with the American Forest Council for property owners who have at least 10 acres. The purpose of the Tree Farm Program is to promote forestry awareness and forest stewardship through public education and through the recognition of landowners who enhance their forest resources using sound forest management practices. To be eligible, a property needs a written Forest Management Plan by a registered professional forester and a record of active management of the property as a tree farm.

INCOME TAX DEDUCTIONS

The Federal Income Tax Regulations allow limited annual deduction of operating or investment costs with special treatment for reforestation expenses. The regulations also allow the depletion of the owner's investment at the time of a timber harvest. In addition, public law 96-451 permits up to $10,000 of capitalized reforestation costs each year to be eligible for a 10% tax credit (subtracted from taxes owed) and 7-year amortization (subtracted from gross income to compute adjusted gross income).

The State Income Tax Regulations allow owners or lessees of 10-500 acres of commercial forestland that is capable of growing more than 20 cu. ft./acre/year to deduct double the cost of reforestation or timber stand improvement operations from their federal adjusted gross income on their State Income Tax.

REGULATORY PROGRAMS

CHESAPEAKE BAY CRITICAL AREA MANAGEMENT PROGRAM

The Critical Area Management Program requires replacement of wooded areas lost to development within the IDA, LDA, and RCA by mitigation on either a 1:1 or 1:1.5 basis. Wooded areas cleared in violation of the Critical Area regulations within the Buffer must be replaced by mitigation at a rate of 4:1, and any wooded clearing violation outside of the Buffer requires mitigation at a rate of 3:1.

STATE REFORESTATION LAW 5-103

This law requires State, local, and private entities receiving State funds to minimize impacts and mitigate

for forest land lost, including all governmental units within the State and low income housing that receive State funds. Forest loss shall be minimized through adjustments in construction plans. If designs cannot be altered and forest land is lost, that loss must be replaced on a 1:1 basis on other government lands.

SEED TREE LAW 5-501

The objective of the law is to ensure reforestation of cut or cleared land. The law applies to areas of five acres or more where loblolly, short leaf, or pond pines constitute 25% or more of the live trees on each acre. Landowners can clear-cut, however, only after securing approval from the State Forester by agreeing to carry out an effective reforestation plan.

ROADSIDE TREE LAW

The purpose of this law is to ensure proper care of roadside trees in the interest of promoting and maintaining healthy trees and safe, unobstructed, and aesthetically pleasing public roads and rights-of-way. Any tree that grows in, or partly in, the right of way of any public road is considered a roadside tree. Under this law, a person may not undertake any treatment to any roadside tree without a permit from DNR except if the tree is uprooted; branches are broken and contacting wires; the tree is in a condition that presents an immediate danger to persons or property; or the tree is located along an unimproved dirt road.

SEDIMENT CONTROL REGULATIONS

Harvesting is explicitly included under the provisions of the State Sediment Control Program. Any forest harvest operations that disturb more than 5,000 square feet of land, requires crossing a stream that has a drainage area greater than 400 acres, or requires crossing a trout stream that has a drainage area greater than 100 acres, must have an Erosion and Sediment Control Plan as part of the forest harvest permit. The Harford Soil Conservation District, Harford County Department of Planning and Zoning, and the Harford County Department of Public Works, and Sediment Control Division must approve the forest harvest permit.

A Standard Erosion and Sediment Control Plan has been developed by the State Department of Natural Resources that can be used instead of a customized plan if:

1. Road cuts or fills are less than 3 feet wide;

2. Roads and trails have grades less than a 15%; and

3. Landings are located on slopes having less than 10% grade.

Among other provisions, the Standard Plan requires:

- Stabilization of access points to a site;

- Uncut buffer zones of at least 50 feet wide adjacent to perennial and intermittent streams, rivers, lakes, ponds, bogs, or marsh with an additional buffer required as the slope on the adjacent land increases. Cutting within the Critical Area Buffer is allowed in accordance with a special Buffer Management Plan designed by a registered professional forester in accordance with guidelines

established by the DNR;

- The laying out of haul roads and skid trails along natural land contours to avoid excessive cuts, hills, and grades;

- The avoidance of crossing perennial and intermittent streams by installing temporary bridges or culverts. Where such crossings cannot be avoided (in the case of streams with a drainage area greater than 400 acres, or designated trout streams with a drainage area greater than 100 acres), a permit from the Maryland Department of the Environment is required for such temporary crossings; and

- The prohibition of haul roads or skid trails in the Buffer area except those needed to provide access to required stream crossings.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

CHESAPEAKE BAY CRITICAL AREA

To be consistent with the provisions of the Criteria pertaining to wooded areas, the County has established a Forest and Woodland Protection Program with the following components:

- A Forest Conservation Element consisting of the application of the Roadside Tree Law and the measures described in Chapter 2, particularly the use of Forest Conservation Plans, in order to minimize the clearing of wooded areas for development purposes and requiring their replacement if the development occurs in the Critical Area;

- A Forest Management Element requiring the development of Forest Management Plans for timber harvesting activities in the Critical Area including those on agricultural lands. Such plans include provisions that recognize the Criteria limitations on harvesting operations and provide protection for Habitat Protection Areas, as well as ensuring the maintenance of the wooded areas for water quality protection and wildlife habitat values.

This Program was instituted through the Subdivision Regulations, and by inclusion of appropriate provisions in the Chesapeake Bay Critical Area Ordinance. A Standard Erosion and Sediment Control Plan is available for forest harvesting operations in the Critical Area that reflect the Criteria's requirement for a minimum 100-foot Buffer in which hauling roads or skid trails are not permitted, and in which no cutting can occur within 100 feet of tidal waters, tidal wetlands, or perennial streams.

Chapter 6

AGRICULTURAL ACTIVITIES

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

"Agriculture" is described by the Criteria as "an activity related to the production or management of livestock, crops, vegetation, or soil, including tillage, harvest, fertilization, pest management, cropping, pasturing; or production of an agricultural product, including livestock, poultry, plants, trees, sod, food, feed, and fiber; or an activity that directly contributes to the production, conversion, processing, storage, or sale of agricultural products primarily generated onsite."

The objectives of the Criteria with respect to agricultural activities are to maintain agricultural lands in agricultural use to the maximum extent possible, and to ensure that agricultural activities do not adversely affect water quality or important plant and wildlife habitats identified as Habitat Protection Areas (see Chapter 9). Local governments are to develop measures for encouraging the preservation of agricultural lands and are to ensure that:

- New agricultural land is not created by:

    1. Destroying seasonally flooded water regimes or wetlands;

    2. Clearing forests or woodlands on highly erodible soils or on slopes greater than 15%; or

    3. Clearing land that would adversely affect the Critical Area Buffer or other Habitat Protection Areas.

- Animal feeding operations (including retention and storage ponds, feed lot waste storage, and manure storage) minimize the contamination of water bodies;

- Habitat Protection Areas on agricultural lands are protected;

- Forest Management Plans are developed for timber harvesting on agricultural lands; and

- Soil and Water Conservation Plans are developed and implemented for all agricultural lands in the Critical Area.

There are special provisions of the Criteria relating to undertaking agricultural activities in the Critical Area Buffer, in addition to the prohibition of clearing vegetation as noted above. A 25-foot vegetated "filter strip" comprised of trees with a dense ground cover or a thick sod grass is to be maintained adjacent to tidal waters or tidal wetlands, the width of which is to be expanded by a distance of 4 feet for every 1%

of slopes greater than 6%. The Criteria allow the use of authorized measures to control noxious weeds including Johnson grass, Canada thistle, and multiflora rose, if they occur in the filter strip. In addition, the feeding or watering of livestock is prohibited within 50 feet of tidal waters, tidal wetlands, and tributary streams. All farming activities, including the grazing of livestock, are not to disturb stream banks, tidal shorelines, or Habitat Protection Areas. This requirement is not interpreted as requiring the fencing of streams unless a significant water quality problem exists.

II. SIGNIFICANT ISSUES AND FACTORS

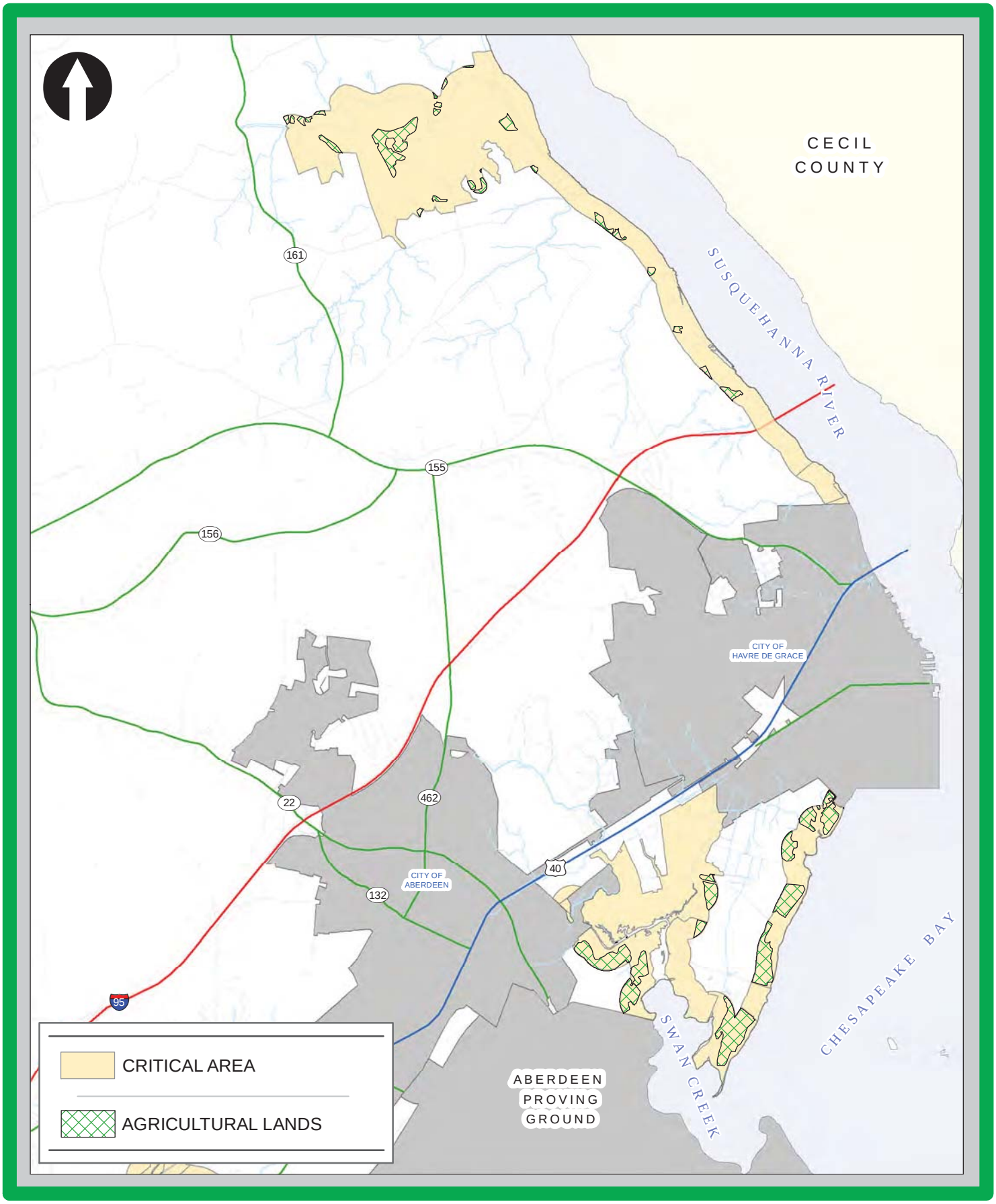
The following are the major issues/factors associated with agricultural activities in the Critical Area:

- Identification, inventory, and mapping of agricultural lands in the Critical Area;
- Methods for maintaining agricultural land in agricultural use;
- The development and implementation of soil and water conservation plans that ensure that Habitat Protection Areas are protected and that impacts on water quality are firstly avoided or otherwise minimized;
- Development of Forest Management Plans for timber harvesting on farms that are consistent with the provisions of the criteria; and
- Development measures to ensure that agricultural activities, particularly agricultural feeding operations, do not adversely affect water quality.

INVENTORY AND MAPPING OF AGRICULTURAL LANDS

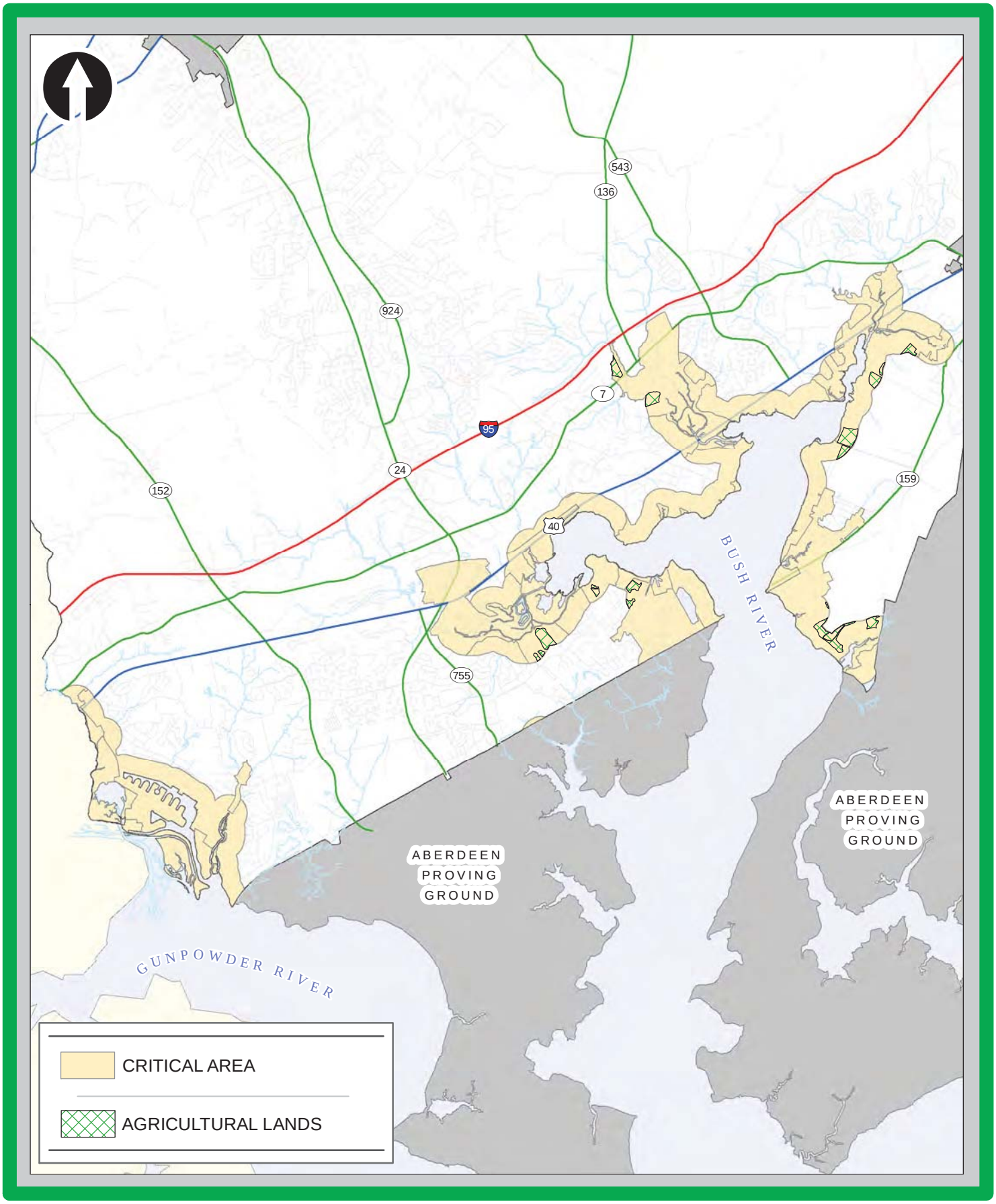
With the assistance of the County Agricultural Preservation specialist and the Soil Conservation District, the agricultural lands in the Critical Area were identified and mapped. These agricultural lands fell into two categories: active farms and land leased for agricultural activities on an interim basis whose original purpose is nonagricultural (land in State and local parks, the site of the Baltimore Gas and Electric power plant, etc.). The main crop type is grain with some beans, hay grain, and some livestock being kept on several farms. As a result, there are no significant problems associated with animal waste operations in the Critical Area. Figures 6 and 7 show the location of farmed lands in the Critical Area of Harford County.

FIGURE 6



AGRICULTURAL LANDS IN THE SUSQUEHANNA RIVER &
SWAN CREEK PORTIONS OF THE CRITICAL AREA

FIGURE 7



AGRICULTURAL LANDS IN THE GUNPOWDER RIVER &
BUSH RIVER PORTIONS OF THE CRITICAL AREA

METHODS FOR MAINTAINING AGRICULTURAL LAND IN AGRICULTURAL USE

The majority of the agricultural lands in the Critical Area are zoned Agricultural (AG) which allows a development density of one unit per 10.99 acres. All of the agricultural lands have been included in the RCA portion of the Critical Area and have a density of one unit per 20 acres. As discussed in the next section, the County has an active agricultural land preservation program.

SOIL AND WATER CONSERVATION PLANS

Agricultural issues relating to protection of Habitat Protection Areas, development of Forest Management Plans, and protection of water quality are addressed by the Soil Conservation District. The Soil Conservation District works with owners or operators of agricultural lands in the Critical Area to develop Soil Conservation and Water Quality Plans. These plans have been developed for all of the agricultural properties in the Critical Area to address habitat protection, water quality concerns, and to refer property owners to the Department of Natural Resources to create a Forest Management Plan prior to the consideration of commercial timber harvesting.

This cooperative approach with landowners in the development and implementation of Soil Conservation and Water Quality Plans shall fully address the requirements of the Criteria regarding agricultural operations. If enforcement action is necessary to address water quality problems, the procedures discussed in the next section that have already been established by the Maryland Department of Environment and Department of Agriculture shall be utilized. The destruction or inappropriate alterations of Habitat Protection Areas on agricultural lands shall be considered a violation of the Critical Area Program and shall thus be pursued as a zoning violation.

III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

COOPERATIVE SOIL AND WATER CONSERVATION PLAN DEVELOPMENT AND IMPLEMENTATION

As noted previously, the development of Soil and Water Conservation Plans through a cooperative effort between the Harford Soil Conservation District and owners of agricultural lands is the keystone of the County's efforts to address the provisions of the Chesapeake Bay Critical Area Program Criteria relating to agricultural activities.

Financial assistance from Maryland's Agricultural Water Quality Cost Share Program can been sought to help finance the implementation of measures or best management practices needed to address water quality concerns identified in the Soil and Water Conservation Plans. The Program provides funding for such measures up to 87.5% of the total cost.

COUNTY AGRICULTURAL PRESERVATION PROGRAM

Harford County has been an active participant in the Maryland Agricultural Land Preservation Foundation and Maryland Environmental Trust Programs since 1977. Both programs rely on the voluntary sale of development rights and the placement of easements on the land.

As a participant in the preservation programs, the County receives funding from the Maryland General Assembly to purchase development rights and place easements on volunteer land. When these initial funds have been used up, the State will provide 60% of the additional funds if the County contributes 40% of the funds required to purchase additional development rights and install easements.

COUNTY PRESERVATION DISTRICT

In 1993, Harford County also established its own agricultural preservation program. To qualify, participants must have a minimum acreage of 50 acres or more, unless the property is adjoining land that currently resides in the preservation district. The property must also meet the qualifications of having Class I, II, or III soils, and have extra development rights available on the parcel.

RURAL LEGACY PROGRAM

The Rural Legacy Program was created by the Department of Natural Resources in 2000. Participants in the Program must meet County and State approvals that will protect natural and scenic resources to foster rural industries such as agriculture and forestry. Applicants may apply annually to receive funding and protective easements.

REGULATION OF WATER POLLUTION CAUSED BY AGRICULTURE

The State Departments of Agriculture and Natural Resources and the Office of Environmental Programs have established procedures for addressing water pollution caused by agriculture. When a water quality problem is identified as a result of a citizen complaint or observance by State enforcement personnel, it is first referred to the local Soil Conservation District for a voluntary compliance approach. However, formal enforcement action is taken if one of the following conditions exists:

- A point source discharge is involved which lacks a National Pollutant Discharge Elimination System (NPDES) permit (i.e. a measurable, direct, surface-water discharge through a pipe, trench, or other structure that may be continuous or intermittent);

- Agricultural chemicals, crop by-products, or wastes have been dumped or placed in surface waters; or

- A condition exists which, if not corrected immediately, will result in locally significant or catastrophic pollution (including, but not limited to, failure of structures).

Under the voluntary compliance approach, contact is made by the local Soil Conservation District with the owner/operator of the property to identify the best management practices that will eliminate or greatly reduce the problem and make plans for their installation. If the owner/operator does not agree to the installation of the best management practices, then they will be formally notified by letter that they are in violation of State water quality standards and that remedial action is required. If the owner/operator still does not take remedial action, then legal enforcement action will ensue.

Food, Conservation Energy Act of 2008

In 2008, new legislation was passed and named The Food, Conservation, and Energy Act of 2008. This bill replaced the Food Security Act of 1985. The Food, Conservation, and Energy Act was also known as the U.S. Farm Bill that was a $288 billion, five-year, agricultural policy bill that was passed into law by the United States Congress in June 2008. The bill was a continuation of the 2002 Farm Bill. It continues the United States' long history of agricultural subsidy as well as pursuing areas such as energy, conservation, nutrition, and rural development. Some of the programs listed below were to help facilitate this legislation.

CONSERVATION RESERVE ENHANCEMENT PROGRAM

The Conservation Reserve Enhancement Program is a voluntary land retirement program that helps agricultural producers protect environmentally sensitive land, decrease erosion, restore wildlife habitat, and safeguard ground and surface water.

CONSERVATION COMPLIANCE

Conservation compliance applies if a farmer continues planting annually tilled crops on highly erodible fields. To remain eligible for certain US Department of Agriculture (USDA) program benefits, a farmer must have developed, and be actively implementing, a locally approved conservation plan for the highly erodible fields.

SODBUSTER

Sodbuster applies if a farmer plants annually tilled crops on a highly erodible field (as determined by the USDA) that was not used for crop production during the period of 1981 to 1985. If a farmer plows such a highly erodible field, he must do so under a conservation system approved by the local conservation district in order to remain eligible for USDA program benefits.

CHESAPEAKE BAY WATERSHED CONSERVATION PROGRAM

This program is to assist producers in implementing conservation activities on agricultural lands in the Chesapeake Bay Watershed and to improve water quality and quantity through agreements with producers.

SWAMPBUSTER

Swampbuster is a program of Wetland Conservation Provisions of the USDA. The purpose of the provisions is to remove certain incentives to produce agricultural commodities on converted wetlands or highly erodible land, unless the highly erodible land is protected from excessive soil erosion. To remain eligible for certain USDA farm programs (some exceptions may apply), the farmer must discontinue production of annually tilled crops on newly converted wetlands.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND PROGRAMS

To comply with the provisions of the Criteria pertaining to agricultural activities, the County has established an Agricultural Protection Plan with the following components:

- A protection component that consists of changing the limit on the density of development on agricultural lands from one unit per ten acres, to one unit per twenty acres through their designation as RCA in the Critical Area. Any changes that may be made on the density of a development allowed on agricultural land located in coastal areas outside the Critical Area will result from the review currently being undertaken of the County's regulations relating to agricultural activities county-wide;

- Owners of agricultural land in the Critical Area have been made aware of the opportunity they have for placing their land in an Agricultural Preservation District and for selling a development rights easement on their property;

- A mitigation component whose objective is to ensure that the impacts of agricultural activities on water quality and Habitat Protection Areas are firstly avoided or otherwise minimized. The major mechanisms used to achieve this objective have been the development of Soil and Water Conservation Plans for agricultural lands in the Critical Area – and the implementation of the best management practices recommended in these plans – with state and federal cost-share funding. Such plans are reviewed by the Harford County Department of Planning and Zoning for consistency with the County's Critical Area Program; and

- A fact sheet was developed by the Department of Planning and Zoning specifying the provisions of the Criteria relating to agricultural activities. This fact sheet was attached as part of the Soil and Water Conservation Plan, thus ensuring that owners/operators of agricultural lands are aware of such provisions and will conduct their activities in a manner consistent with the Criteria. Appendix G contains a copy of a draft Memorandum of Agreement between the Harford Soil Conservation District and the Department of Planning and Zoning detailing the role each will play in the development and implementation of Soil and Water Conservation Plans in the Critical Area. All agricultural lands in the Critical Area of Harford County have Soil and Water Conservation Plans established with the Soil Conservation Service.

Criteria language has also been included in the Zoning Code:

- Requiring Soil Conservation and Water Quality Plans for agricultural lands in the Critical Area;

- Ensuring the protection of Habitat Protection Areas within agricultural lands;

- Requiring Forest Management Plans for timber harvesting on agricultural lands;

- Ensuring that new agricultural land is not created by:

    1. Diking, draining, dredging, or filling wetlands;

    2. Clearing on slopes greater than 15% or on highly erodible soils;

3. Clearing land that will adversely affect water quality or will destroy plant and wildlife habitat located in Habitat Protection Areas; and

4. Clearing existing vegetation within the Critical Area Buffer.

Chapter 7

SURFACE MINING

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

The Criteria define surface mining as activities and uses that require breaking of the land surface to extract minerals; the processing of minerals; the extraction of sand, gravel, rock, etc. from borrow pits for highway construction purposes or other public facilities; the removal of overburden for mining, prospecting, or exploration purposes; and operations affecting one acre or more.

The requirements of surface mining in the Critical Area are to:

- Identify existing and suitable future sites for surface mining and determine appropriate post-excavation uses for such sites; and

- Minimize pollutant runoff from surface mining sites and ensure that surface mining does not occur in unsuitable areas, including the following:

    1) Areas where important natural resources such as threatened and endangered species, areas of scientific value, or rare assemblages of species occur such as those defined as Habitat Protection Areas;

    2) Areas where highly erodible soils occur;

    3) Areas where the use of renewable resource lands would result in the substantial loss of long-term productivity (25 years or more) of wooded areas, agriculture, or would result in the degradation of water quality or loss of vital habitat; and

    4) Areas within 100 feet of tidal waters, tidal wetlands, or the edge of streams.

In addition, existing operations are to provide to a minimum 100-foot Critical Area Buffer between excavation activities and tidal waters, tidal wetlands, or the edges of streams, and existing work ponds are to be reclaimed as soon as possible after the cessation of extraction operations. The Criteria also require that future wash plants, including ponds, spoil piles, and equipment not be located in the Buffer.

II. SIGNIFICANT ISSUES AND FACTORS

The major issues associated with surface mining in the Critical Area are:

- Identification of existing and suitable future sites in the Critical Area and suitable reclamation uses for such sites; and

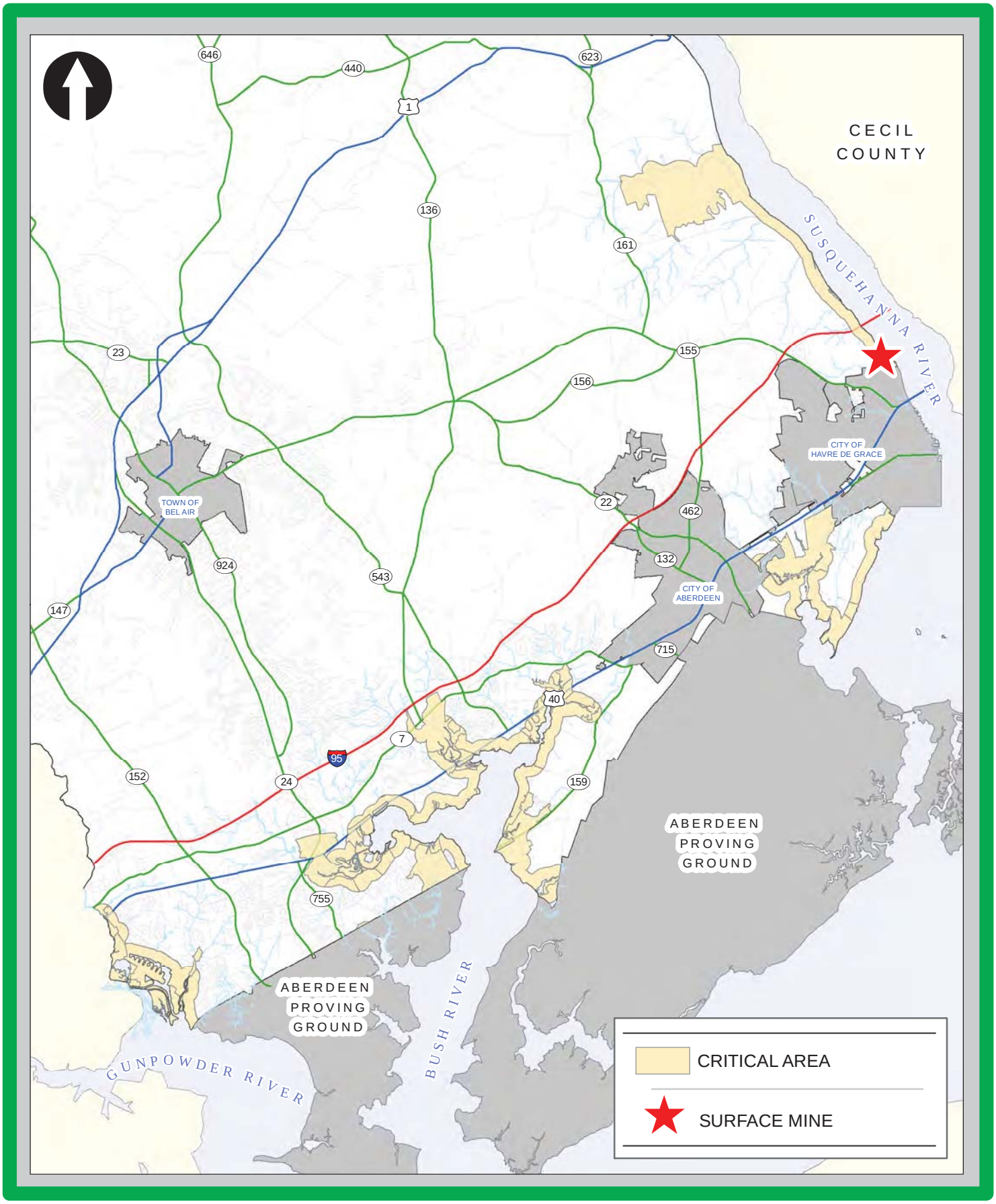
- Minimization of the adverse impacts of surface mining including pollutant loadings off-site and prohibiting the location of surface mining activities in unsuitable areas.

IDENTIFICATION OF EXISTING AND SUITABLE FUTURE SURFACE MINING SITES IN THE CRITICAL AREA

One active surface mining operation exists in the Critical Area. This is the Vulcan Corporation site along the Susquehanna River, located north of Havre de Grace. The site is a 182-acre operation located on a 300-acre parcel of land, 100 acres of which is in the Critical Area. This operation has State Surface Mining Permits that require the minimization of impacts to water quality, plant and wildlife habitat, and to develop reclamation plans. This mining operation is marked shown in Figure 8.

Vulcan Materials Corporation operates a quarry in the Chesapeake Bay Critical Area. The facility is in the county but adjacent to the City of Havre de Grace.

FIGURE 8



SURFACE MINE IN HARFORD COUNTY'S CRITICAL AREA

With regard to potential future mining sites, the Maryland Geological Survey completed a mapping effort to identify lands for potential mineral resource development in Harford County. This effort showed that potentially suitable sites in Harford County's Critical Area have already been used and depleted or have been pre-empted by existing and planned development. Thus, future surface mining operations in Harford County's Critical Area will be confined to expansion of the two existing operations at their present sites.

MINIMIZATION OF THE ADVERSE IMPACTS OF SURFACE MINING OPERATIONS

Table 5 lists the potential pollutants that may be generated by sand and gravel operations and treatments that may be applied to them. As discussed in the next section, the State Surface Mining Permit program provides for the minimization of the adverse environmental impacts of sand and gravel operations and ensures the reclamation of their sites. Since there are no suitable areas in Harford County's Critical Area from a resource base perspective, there is no likelihood that new surface mining operations will be located in areas inappropriate for such uses.

TABLE 5

POTENTIAL POLLUTANTS FROM SAND AND GRAVEL OPERATIONS AND APPROPRIATE REMEDIAL MEASURES

POLLUTANT	SOURCE/CAUSE	IMPACT	REMEDY
Airborne dust and particles	Trucks traveling over unpaved roadways; wind erosion; excavation operations involving rock crushing and the pulverization of overburden.	Sedimentation and coverage of plants and, wildlife; increased levels of respirable dust; changes in local soil and climate.	Improve roads for hauling; implement reclamation and revegetation of operation sites; use dust control measures; apply air quality standards.
Noise seasons	Truck traffic; grading and excavations; blasting or pulverizing rock.	Interference with animal life cycles; disturbance to residential areas; vibration of nearby locations.	Implement noise control measures in environmentally sensitive areas; use pre-blast surveys and buffers; improve the orientation of site operations to residential areas.
Surface Water	Altered infiltration rates; increased runoff; stream encroachment; product discharges; altered drainage density; contamination of runoff with oils, fuels, and wash products; excessive overburden and spoil accumulation.	Reduced water quality; sedimentation; channel erosion; reduced stream flow; increased ponding and flooding; iron leachate and heavy metal contamination; increased nitrogen and phosphorus loadings.	Implement runoff treatment facilities; stabilize potential erosion areas; control and monitor overburden, remove spoils as soon as feasible.

TABLE 5 CONTINUED POTENTIAL POLLUTANTS FROM SAND AND GRAVEL OPERATIONS AND APPROPRIATE REMEDIAL MEASURES			
Ground Water	Disrupted or diverted waterflow; rock blasting.	Decreased water quantity in local wells or aquifers; decreased quality of local wetlands; pollution of ground water; rock fissures that redirect ground water.	Maintain site's recharge capacity; declare specific site areas as unsuitable for mining operations.
Land Clearing	Mining activities.	Loss or alteration of soils, drainage patterns, vegetation, landforms, and habitats.	Plan and phase burden stock piles; use best management practices; reshape the reclaimed surfaces; orient spoils to maximize recharge; analyze overburden for alternative uses such as backfill; protect fills from failure; remove operation roads; declare specific site areas as unsuitable for mining operations.

Sources: Harford County Chamber of Commerce

III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

STATE SURFACE MINING PERMIT PROGRAM

In 1975, the State of Maryland established a surface mining permit program. This permit program within the Mineral, Oil, and Gas Division of the Maryland Department of Environment ensures that the adverse impacts of such operations are minimized and that appropriate reclamation measures are taken once the mineral resource has been depleted. Permits for surface mining operations will not be granted if the:

- Operation will have unduly adverse effects on wildlife, or fisheries;
- Operator fails to provide applicable permits from State and local regulatory agencies responsible for air and water pollution and sediment control;
- Operation will constitute a substantial physical hazard to a neighboring house, school, church, hospital, commercial or industrial building, public road, or other public or private property existing at the time of application for the permit;
- Operation will have a significantly adverse effect on the use of a publicly owned park, wooded area, or recreation area existing at the time of application for the permit;
- Operator does not possess a valid surface mine operator's license or is the subject of legal action brought against him by the State;

- Effects of the proposed action on the environment have been inadequately considered; or

- Previous experience with similar operations indicates a significant probability that the operation will result in substantial deposits of sediment in stream beds or lakes, landslides, or will cause other water pollution.

A reclamation plan must be submitted as part of a surface mining permit application that specifies the proposed use of the site following reclamation, the manner in which topsoil and subsoil are to be conserved and restored, the specifications for surface gradient restoration suitable for the subsequent use, the proposed manner and type of revegetation or other surface treatment of the affected areas, and a true schedule for the implementation of reclamation measures. Reclamation is to occur as mining on each segment of a site is completed. A bond is required in order to ensure that appropriate reclamation occurs.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND PROGRAMS

The Critical Area Ordinance prohibits the establishment of new surface mining operations within the Critical Area. Since no new surface mining operations are likely in Harford County's Critical Area, all that is necessary is the monitoring of existing operations and a review of proposed expansions of such operations by the Department of Planning and Zoning to ensure that off-site pollutant loadings are minimized, and that significant plant and wildlife habitat are not adversely affected. The State Surface Mining Permit Program is considered to be the main regulatory mechanism, complemented with provisions of the Critical Area Management Program requiring a Special Exception approval for any proposed expansions. Conditions of approval of such Special Exceptions would be measures that ensure the protection of any Habitat Protection Areas (including the Critical Area Buffer) on or adjacent to the site as described in the County Ordinance and this Program, and minimization of off-site pollutant loading through implementation of measures such as those listed in Table 5 and development of adequate reclamation plans.

Chapter 8

NATURAL PARKS

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

One of the primary objectives of the Criteria is to encourage the opportunities for interaction between natural environments and people without adversely impacting the natural habitat values of such areas. The Criteria calls for the use of natural parks as a means of meeting this objective. Natural parks are defined in the Program Development Criteria as areas of natural habitat that provide opportunities for recreational activities that are compatible with the maintenance of natural conditions. To meet the Criteria requirements for natural parks, local jurisdictions are to:

- Identify areas where natural parks could be established and consider the use of measures such as land acquisition, easement designations, or protective designations to protect these areas. Park areas should be chosen to preserve examples of coastal ecosystems found within the jurisdiction with boundaries based on biological needs for adequate conservation of these areas; and

- Incorporate resource protection measures and limit park uses, such as the number of visitors, in order to reduce disturbance to the ecosystem.

II. SIGNIFICANT ISSUES

With regard to natural parks, the following significant issues need to be addressed by the County in order to meet the intent of the Criteria:

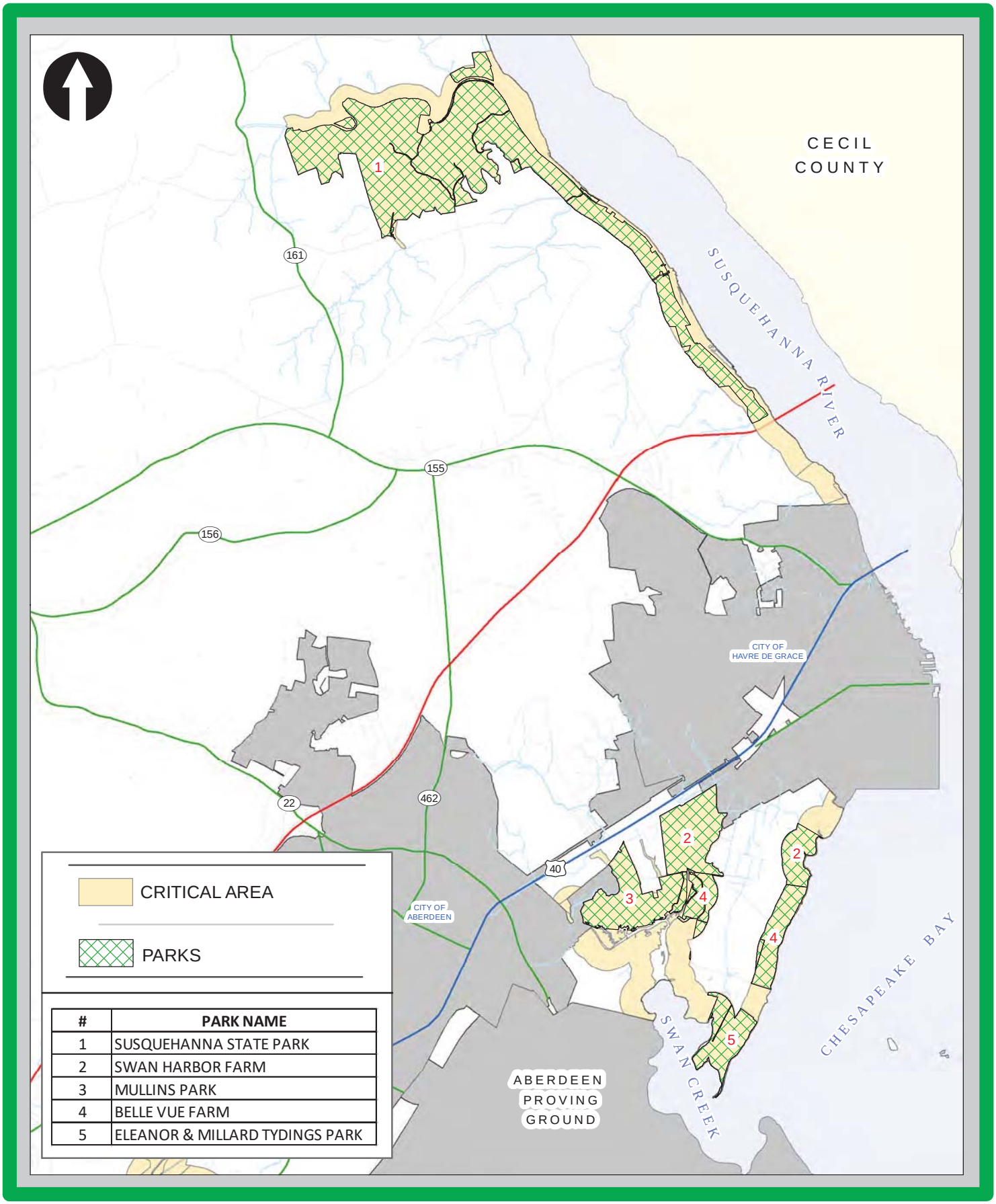
- Identification of potential sites for the establishment of natural parks within Harford County's Critical Area; and

- Identification of the protective measures and management means to preserve the unique ecosystems that may be found on-site.

IDENTIFICATION OF POTENTIAL SITES FOR NATURAL PARKS

The establishment of natural park areas serve to enhance public opportunities for waterfront access and passive recreation that are compatible with the natural parks concept, as outlined in the Criteria. Harford County's Critical Area contains several sites that have the potential to be natural parks. Some of these sites are already owned by the County, while others are in private or State ownership. The locations of existing parks and State-owned natural resource areas are shown in Figures 9 and 10. Table 6 gives a brief description of these mapped locations.

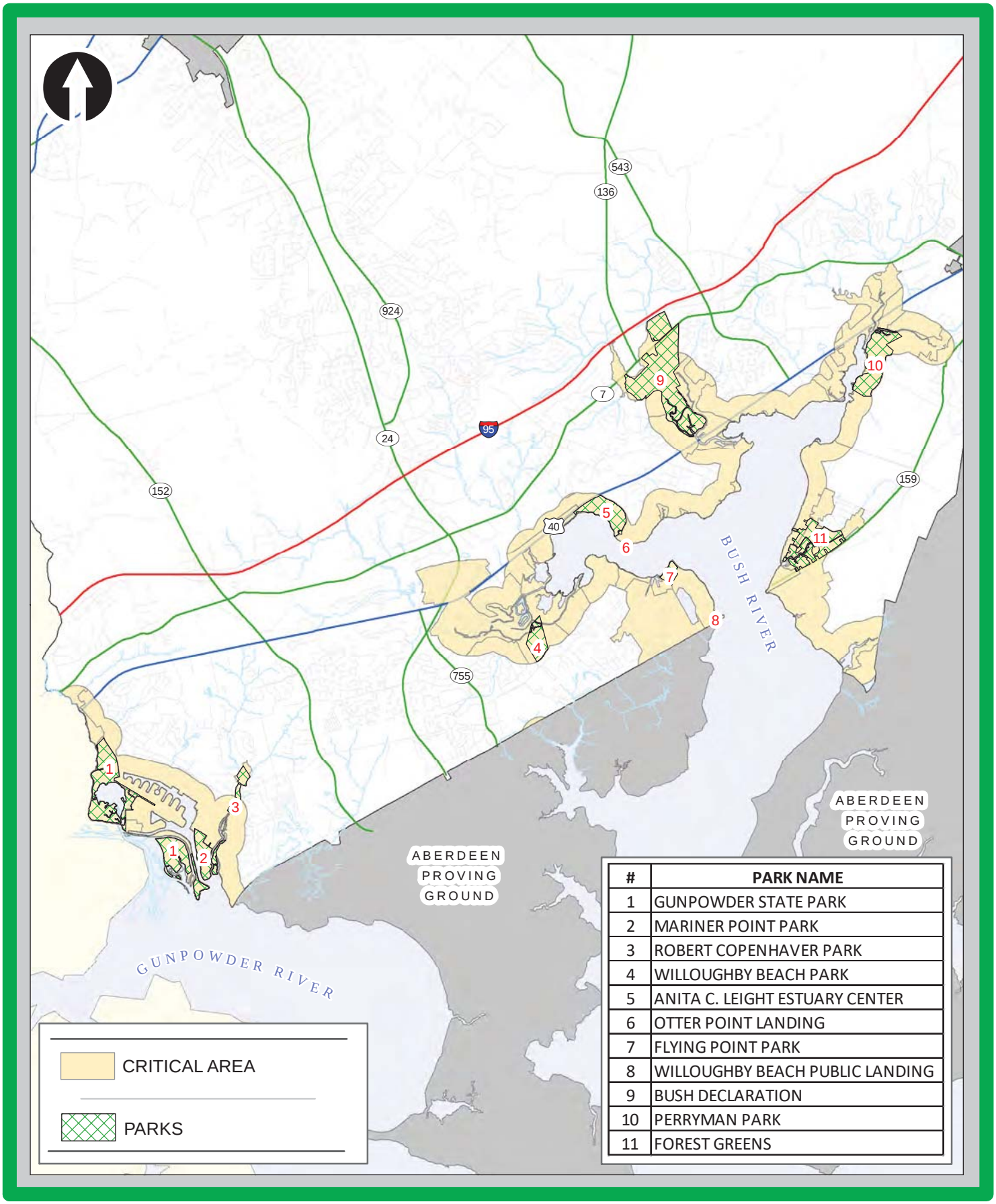
FIGURE 9



#	PARK NAME
1	SUSQUEHANNA STATE PARK
2	SWAN HARBOR FARM
3	MULLINS PARK
4	BELLE VUE FARM
5	ELEANOR & MILLARD TYDINGS PARK

PARKS AND OTHER DEDICATED NATURAL AREAS IN THE SUSQUEHANNA RIVER & SWAN CREEK PORTIONS OF THE CRITICAL AREA

FIGURE 10



#	PARK NAME
1	GUNPOWDER STATE PARK
2	MARINER POINT PARK
3	ROBERT COPENHAVER PARK
4	WILLOUGHBY BEACH PARK
5	ANITA C. LEIGHT ESTUARY CENTER
6	OTTER POINT LANDING
7	FLYING POINT PARK
8	WILLOUGHBY BEACH PUBLIC LANDING
9	BUSH DECLARATION
10	PERRYMAN PARK
11	FOREST GREENS

PARKS AND OTHER DEDICATED NATURAL AREAS IN THE GUNPOWDER RIVER & BUSH RIVER PORTIONS OF THE CRITICAL AREA

TABLE 6

POTENTIAL SITES FOR ESTABLISHMENT OF NATURAL PARKS

NAME	SIZE	UNIQUE FEATURES	COMMENTS
COUNTY OWNERSHIP			
Mariner Point Park	38 acres	Peninsula surrounded by Foster Branch Creek, Taylors Creek and the Gunpowder River. 5,000 feet of shoreline; mix of mature woodlands and woody shrubs.	Pathways, observation deck, fish pier, boat launch, parking and picnic shelter.
Leight Park	61 acres	Heavily wooded site containing significant stands of mature hardwoods. Provides excellent waterfront vistas of Otter Pint Creek. Contains several small tidal marshes.	Developed as an educational center and passive open park space. Improvements include a visitor's center, a small boat launch, a nature trail, and 25 parking spaces.
Perryman Park	87.9 acres	Overlooks Bush Creek marsh. Predominantly open with some woodlands and some wetlands.	Being developed as a park with a nature trail, restrooms, parking, ball fields, and maintenance and storage facilities.
Robert Copenhaver Park	24 acres	Borders Foster Branch Creek. Predominantly forested, has some non-tidal wetlands. Recreational use in natural park setting.	Northeastern portion used for active recreation. Remaining portion has potential for passive recreation.
Swan Harbor Farm	522 acres	A Habitat of Local Significance with threatened and endangered species. Includes prime agricultural land with historical and archaeological resources.	Historic home used for events. Fishing pier, gazebo, pedestrian access to the waterfront, and a pond for enhancement of waterfowl and shorebird habitat. The remainder of the site is farmed.
Oakington-Tydings Park	312 acres	4,300 LF of Bay shoreline and 5,000 LF of Swan Creek shoreline. Includes prime farmland and historic barns.	Currently farmed.

TABLE 6 CONTINUED POTENTIAL SITES FOR ESTABLISHMENT OF NATURAL PARKS			
Belle-Vue Farm	347 acres	A Habitat of Local Significance having prime agricultural land with historical and archaeological resources. Includes 13,200 LF of shoreline.	Recent public acquisition.
Forest Greens Lake	110.57 acres	Shallow lake and marsh area with fish ad wildlife habitat.	Used for passive recreation such as fishing and trails.
Mullins Park	250 acres	Good wildlife habitat	Potential to develop as natural park for passive recreation such as trails.
Willoughby Beach Park	45 acres	A Habitat of Local Significance with threatened and endangered species. Includes woodlands, wetlands, tidal marshes, and access to Otter Point Creek.	Plans are to develop a canoe launch and passive recreation such as trails.
STATE OWNERSHIP			
Bush River Declaration Area	500 acres	Marsh and low-lying, woody, fresh water and estuarine marsh areas. Several heavily wooded areas.	Land was purchased by the State to protect the site's natural features.
Gunpowder Falls Park	257 acres	Includes woodlands, wetlands, tidal marshes, and access to the Little Gunpowder River.	A portion of the site is used for passive recreation such as fishing and trails,

APPROPRIATE MANAGEMENT OF NATURAL PARK AREAS

Sites identified as having potential for natural parks use can be protected and managed in a variety of ways. Historically, the primary means of protecting such areas has involved direct acquisition and management by a public entity. Many of the potential natural park sites in the County have been acquired and will be managed in this manner (e.g., Leight and Mariner Point Parks). The State has also been involved in helping to preserve natural areas through a land acquisition program in the Bush River Declaration Natural Resources Management Area. Funds for the development of limited park facilities in these areas have been available from State and federal grant awards in the past, and the County will continue to pursue the funding opportunities that are available in the future.

In addition to outright purchase, natural park areas can also be obtained through a variety ofother means such as cooperative use agreements, the purchase of conservation easements, etc. The Otter Point Creek Marsh Area is one example where such programs have worked successfully in Harford County, particularly with the establishment of the National Estuarine Research Reserve Area through the cooperative use of lands owned by private conservation groups in the area. As other potential natural park sites in Harford County are examined further, the use of these alternatives to direct acquisition should be considered wherever feasible. The use of areas and plans for development in areas designated as natural parks will be reviewed for consistency with the objectives of the County's Critical Area Program.

III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

NATIONAL ESTUARINE RESEARCH RESERVE

The National Estuarine Research Reserve Program is a cooperative Federal-State program established under the provisions of the Federal Coastal Zone Management Act for the purpose of preserving representative estuarine areas for long-term research and educational activities. The federal government is responsible for overall management of the nationwide reserve systems with the State being responsible for the selection of appropriate sites and the development of management programs for them. Grants are available from the federal government for acquisition of appropriate sites, management of related sites, or the undertaking of appropriate research activities.

The State of Maryland has established a multi-site Chesapeake Bay National Estuarine Research Reserve Program in conjunction with the State of Virginia that can be used for research and education of natural estuarine processes and man-induced stresses on the Bay. The 445-acre Otter Point Creek Marsh Area located near the head of Bush Creek is one of the sites included in the Program. The property is owned by a private conservation organization, the Izaak Walton League, which utilizes the site for environmental education field trips and activities in cooperation with the Reserve Program. The Izaak Walton League has supported inclusion of the area into the Reserve Program as has Harford County. The large size of the marshes, in conjunction with the site's proximity to urban areas and general location along the Bay, makes the property an excellent area for conducting research of importance to Bay managers and educational projects. Inclusion of the area into the Reserve Program is compatible with and supportive of its use as a natural park area.

COUNTY ACQUISITION AND PROGRAMS FOR RECREATION AND OPEN SPACE AREAS

As noted previously, through the combined efforts of the Department of Parks & Recreation and Planning & Zoning, Harford County has been attempting to acquire and develop several areas along the shoreline that are consistent with the natural parks concept. In several instances, as with Anita C. Leight and Mariner Point Parks, funding for limited development of those sites has been provided through Federal Coastal Zone Management Grant Programs administered by the Department of Natural Resources. Development plans for these sites include nature trails, bay observation areas, canoe launch facilities, limited parking, and other associated site improvements. All of the improvements are being made with the primary emphasis being on the fragility of the natural areas involved and their limited ability to handle traditional recreational use impacts.

Along the Oakington Peninsula, the County has acquired 1,250 acres of waterfront property along 2.5 miles of coastline with the assistance of Program Open Space. The three properties that were acquired –

Swan Harbor, Tydings, and Belle Vue – contain significant habitat areas and are consistent with areas to be established as natural parks. Plans for both of the areas are consistent with the goals of the Critical Area program**.**

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND PROGRAMS

To be consistent with the provisions of the Criteria pertinent to Natural Parks, the County – through the Departments of Parks & Recreation, Planning and Zoning and other relevant agencies – examined the potential for the establishment of natural parks in those areas identified in this chapter. For ongoing projects, programs involving acquisition, development, and management need to be coordinated between all agencies involved. Land areas that are currently in private ownership and are adjacent to public land holdings having natural park potential should receive priority consideration. Where appropriate and feasible, the County will continue to work with affected landowners and private conservation organizations to utilize alternatives to direct acquisition of additional natural park areas. Any plans for natural park use/development shall be made with primary concern for fragility of ecosystems and the habitat values of the areas.

As noted previously, plans for the development and use of areas designated as natural parks will be developed by the County Departments of Parks and Recreation and Planning and Zoning with input from appropriate State and local agencies in accordance with the standards listed below in order to ensure their consistency with the County's Critical Area Program. Development and activity plans for such areas will be based on the fragile nature of the natural systems on these sites and their limited ability to handle human impacts. The standards set forth in the Zoning Code and this Program will be utilized in the review of development and management plans for natural park areas as follows:

- The Critical Area Buffer shall be maintained adjacent to tidal waters and wetlands. If areas within the Buffer are presently unvegetated, trees or other suitable vegetation shall be planted as a part of site development;

- All identified nontidal wetlands and areas of importance for plant and wildlife habitat shall be protected on-site;

- All areas presently wooded on the site shall be maintained to the maximum extent;

- The use of areas for passive recreation activities such as nature study, hunting and trapping, and for environmental education will be allowed if non-water-dependent service facilities for such areas are located outside of the Critical Area Buffer;

- All publicly owned lands leased for agricultural activities shall have current Soil and Water Conservation Plans; and

- Public beaches or other public water-oriented recreation or education areas including, but not limited to, publicly owned boat launching and docking facilities and fishing piers that require a waterfront location, and therefore must be located within the Critical Area Buffer, will be subject to the following requirements:

    1) Sanitary facilities shall be provided;

2) Service facilities shall be located outside of the Buffer;

3) Permeable surfaces shall be used to the extent practicable in the spirit of environmental conservation (these surfaces will still count toward the overall lot coverage); and

4) Disturbance to vegetation shall be minimized.

Chapter 9

HABITAT PROTECTION AREAS

This chapter has been divided into five parts that discuss the Critical Area Buffer, habitats of threatened and endangered species, areas of significant plant and wildlife habitat value, anadromous fish propagation waters, and nontidal wetlands.

PART A. CRITICAL AREA BUFFER

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

Two of the main objectives of the Criteria are to minimize adverse impacts on water quality, and conserve plant, wildlife, and fish habitat. To assist in achieving these objectives, the Criteria require that local jurisdictions establish a minimum 100-foot Buffer landward from tidal waters, tidal wetlands, and tributary streams. This Buffer area is expanded beyond 100 feet to include contiguous sensitive areas such as steep slopes, hydric soils, or highly erodible soils. In the case of contiguous slopes, the Buffer is to be expanded 4 feet for every 1% of slope over 15% grade or to the top of the slope, whichever is greater in extent.

The purpose of establishing a vegetative Buffer is so that it can serve the following functions:

- Provide for the removal or reduction of sediments, nutrients, and potentially harmful or toxic substances in runoff entering the Bay and its tributaries;
- Minimize the adverse effects of human activities on wetlands, shorelines, stream banks, tidal waters, and aquatic resources;
- Maintain an area of transitional habitat between aquatic and upland communities;
- Maintain the natural environment of streams; and
- Protect riparian wildlife habitat.

Vegetated buffer areas not only mitigate for the adverse impacts on water quality from runoff from activities on adjacent upland areas, but also provide protection for the other types of Habitat Protection Areas discussed in this chapter. Within the Buffer, new development activities, including structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems, are not permitted, except for those necessarily associated with water-dependent facilities

The Buffer is to be maintained in natural vegetation, but may include planted native vegetation where necessary to protect, stabilize, or enhance the shoreline.

As discussed in Chapters 5 and 6 respectively, forestry operations and agricultural activities are allowed in the Buffer under certain conditions, provided that they do not involve permanent removal of vegetation from the Buffer and they do not adversely affect the Buffer's ability to carry out the functions noted above. Any removal of vegetation in the buffer requires a Buffer Management Plan that must be approved by the Department of Planning and Zoning prior to the start of work.

The Buffer Management Plan constitutes the official record of proposed buffer clearing and the mitigation measures that will be provided**.** Appendix K describes the information required for a Buffer Management Plan**,** the cutting of trees or removal of vegetation is allowed in the Buffer where necessary to provide access to private piers, install or construct a shore erosion protection device or measure, or to build a water-dependent facility, provided that the project has received all necessary State and federal permits.

Buffer Management Plans also permit the removal of individual trees that are in danger of falling and causing damage to dwellings or other structures, or that are in danger of falling and blocking streams or causing accelerated shore erosion.

MODIFIED BUFFER AREAS

Areas where the existing pattern of residential, commercial, industrial, or recreational development in the Critical Area as of December 1, 1985 prevented the Buffer from fulfilling the functions set forth in COMAR 27.01.09.01C for water quality and wildlife habitat were mapped as Modified Buffer Areas (formerly named Buffer Exempt Areas). Development in these areas is addressed by a separate set of landscape requirements and restrictions to the cumulative amounts of new lot coverage as specified in Section 267-63.8 of the Zoning Code.

II. SIGNIFICANT ISSUES AND FACTORS

DETERMINATION OF AREAS TO BE INCLUDED IN THE BUFFER

Due to the necessity of identifying the Buffer expansion features – such as hydric soils – in the field, the location of the Buffer must be identified and mapped on a site-specific basis at the same time when preliminary plans, Forestry Management Plans, or similar plans are developed for activities proposed in the Critical Area. However, the probable area to be included in the Buffer can be roughly determined by reference to the Buffer Elements Map that indicates the location of the tidal shorelines, tributary streams, 100-foot Buffer, Modified Buffer Areas, and the soils map showing the general location of hydric soil areas, soils with steep slopes, and highly erodible soils. The Buffer must be expanded to include contiguous areas with slopes greater than 15%. It must also be expanded for areas of highly erodible soils.

One factor that is important in determining the location of Buffer Areas in the Critical Area is identifying the location of tributary streams. These were mapped on the Natural Features Maps by referring to the location of perennial and intermittent streams as shown on USGS 7" topographic maps and the Harford

County Soils Survey. Whenever a development, forestry operation, or other large scale disturbance is proposed in the Critical Area, a site-specific survey should be conducted to verify the exact location of perennial and intermittent streams in Harford County's Critical Area and the 100-foot Buffer that will need to be maintained adjacent to them.

DEVELOPMENT OF MEASURES TO ENSURE PROTECTION OF THE BUFFER

In order to ensure that the Buffer is maintained in natural vegetation (not lawn), the location and extent of the Buffer is required to be shown on concept plans, preliminary plans, associated sediment control and stormwater management plans, and final plats as areas to be kept in a natural condition. The limit of disturbance shall also be shown on all plans. The limit of disturbance shall not encroach into the Buffer. Similarly, delineation of the location of the Buffer and appropriate measures to ensure its integrity are required as part of the development of Forest Management Plans for forest harvest operations in the Critical Area. In the case of agricultural activities, the provisions of the Criteria pertaining to maintenance of the Buffer are included as part of the Soil and Water Conservation Plan.

In addition, as noted previously, creation of a vegetated Buffer where one does not presently exist is a major objective of resource protection programs in the County. Appendix K describes the requirements for Buffer establishment. In the case of new development where the Buffer is not entirely established in woody vegetation, and open space within 100 feet of tidal waters is available, the Buffer shall be fully planted with native trees and shrubs.

III. EXISTING LOCAL REGULATORY AND MANAGEMENT PROGRAMS

Protection of areas adjacent to streams and tidal waters is indirectly provided by the County's Floodplain Ordinance that prohibits development in the 100-year floodplain.

IV. RECENT MODIFICATIONS MADE TO LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

As noted in previous chapters, the Chesapeake Bay Critical Area Ordinance replaces the provisions of the Natural Resources District for the shoreline area. This is the major mechanism for implementing the requirements of the Criteria. Included in the provisions of the Critical Area Ordinance is language ensuring the protection of the Buffer and the Modified Buffer Areas.

As discussed in Chapter 2, revisions to the Subdivision Regulations were made to ensure that the location of the Buffer is noted on concept plans, preliminary plans, final plats, and that appropriate measures are instituted to ensure Buffer protection.

PART B. THREATENED AND ENDANGERED SPECIES AND SPECIES IN NEED OF CONSERVATION

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

The Criteria require that particular attention be given to ensuring the protection of species designated by the

State as Threatened and Endangered Species or Species in Need of Conservation and their habitats. Such species are defined as follows:

- An "Endangered Species" is any species whose continued existence as a viable component of the State's flora or fauna is determined to be in jeopardy including any species determined to be an "Endangered Species" pursuant to the federal Endangered Species Act;

- A "Threatened Species" is any species of flora or fauna that appears likely, within the foreseeable future, to become endangered including any species determined to be a "Threatened Species" pursuant to the federal Endangered Species Act; and

- A "Species in Need of Conservation" is any species determined by the Secretary of the Department of Natural Resources to be in need of conservation for its continued ability to sustain itself.

Species in each of these categories are formally designated for regulation by the Secretary of the Department of Natural Resources. The Criteria require local governments to develop protection programs for such species with the assistance of the Maryland Department of Natural Resources, and other appropriate public agencies and private organizations. Such programs are to consist of the following elements:

- Designation of a protection area around each of the habitats occurring in the jurisdiction within which development activities and other disturbances shall be prohibited unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats; and

- Development of programs that provide protection for the habitats of Species in Need of Conservation, Endangered, and Threatened species that may include, but are not limited to, acquisition, conservation easements, cooperative agreements with landowners, special provisions in forest management and soil conservation plans, and special provisions in subdivision or zoning regulations.

II. SIGNIFICANT ISSUES AND FACTORS

There are two issues concerning Species in Need of Conservation and Threatened or Endangered Species:

1. Identification of the location(s) of the habitats of such species; and

2. Development of appropriate protection programs for such habitats.

IDENTIFICATION OF THE LOCATION OF THE HABITATS OF THREATENED AND ENDANGERED SPECIES AND SPECIES IN NEED OF CONSERVATION IN HARFORD COUNTY'S CRITICAL AREA

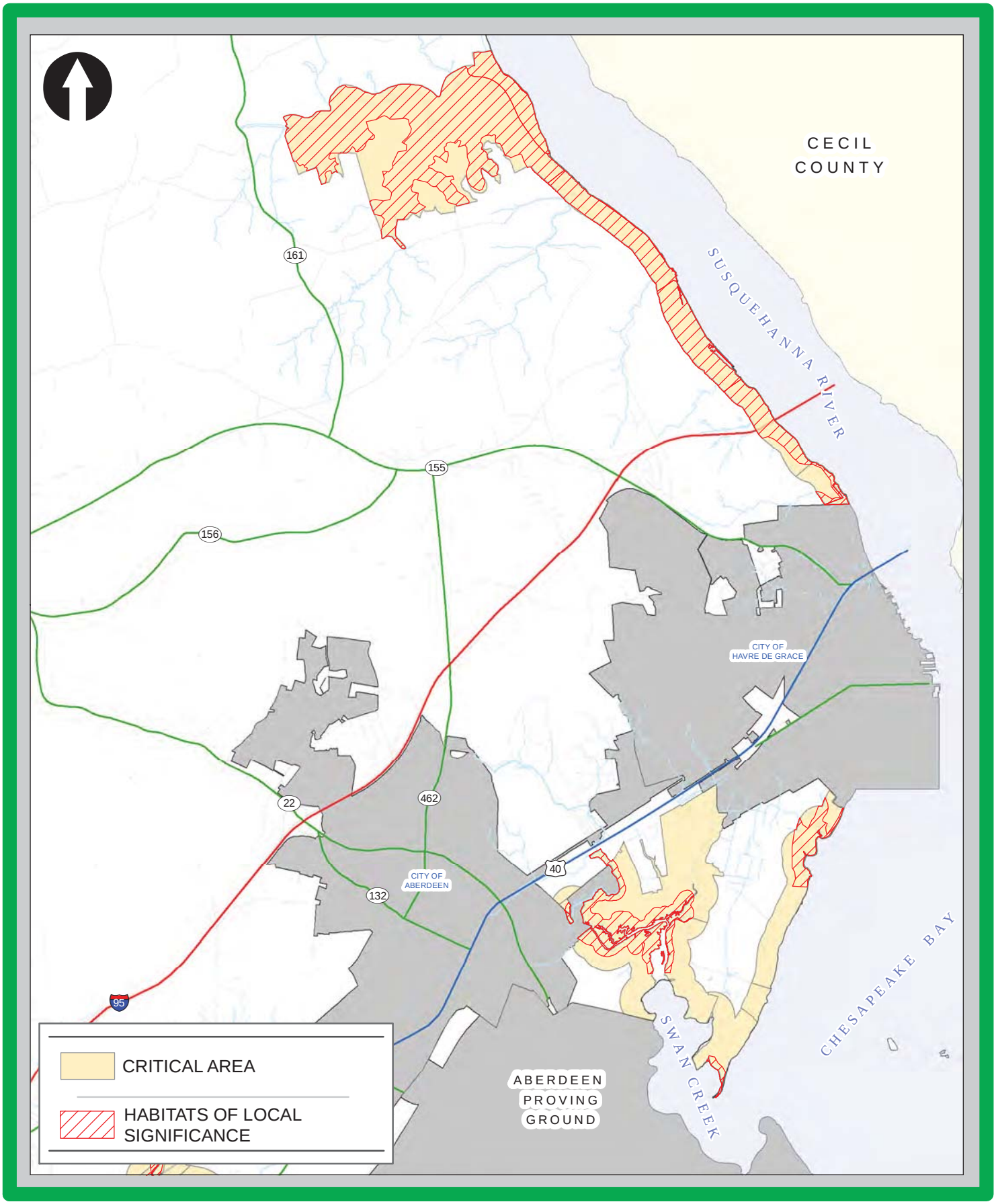
Species that have been designated as State Threatened or Endangered Species, or Species in Need of Conservation are listed in Appendix I. Habitats of such species have been found in various locations in Harford County's Critical Area. Nontidal wetlands along the Susquehanna River provide habitat for a rare reptile in need of conservation. Deer Creek is habitat for the Maryland Darter, which is both a State and Federally Endangered Species. Recent fish census efforts have not found the species.

A steep slope on the south bank of Deer Creek is a habitat area for a threatened plant species. Habitat areas of Threatened and Endangered plant species have also been identified on the shores of the Gunpowder River, Grays Run, Church Creek, Bush River along the Perryman peninsula, and in Church Creek Pond. All identified habitats of Threatened and Endangered species and Species in Need of Conservation are also designated Habitats of Local Concern. Such habitat areas and Buffer areas that ensure the protection of the species have been mapped in Figures 11 and 12. They are described in more detail in Appendix I.

With the assistance of pertinent State agencies, the County will develop cooperative management programs with the landowners of the properties containing such Habitat Protection Areas. Such programs may involve the establishment of conservation easements for the habitat areas and their required Buffer areas. In addition, any activities that may be proposed in or adjacent to such areas will undergo the development review process as described in Chapter 2 or as part of the development of any required Forest Management Plan or Soil & Water Conservation Plans.

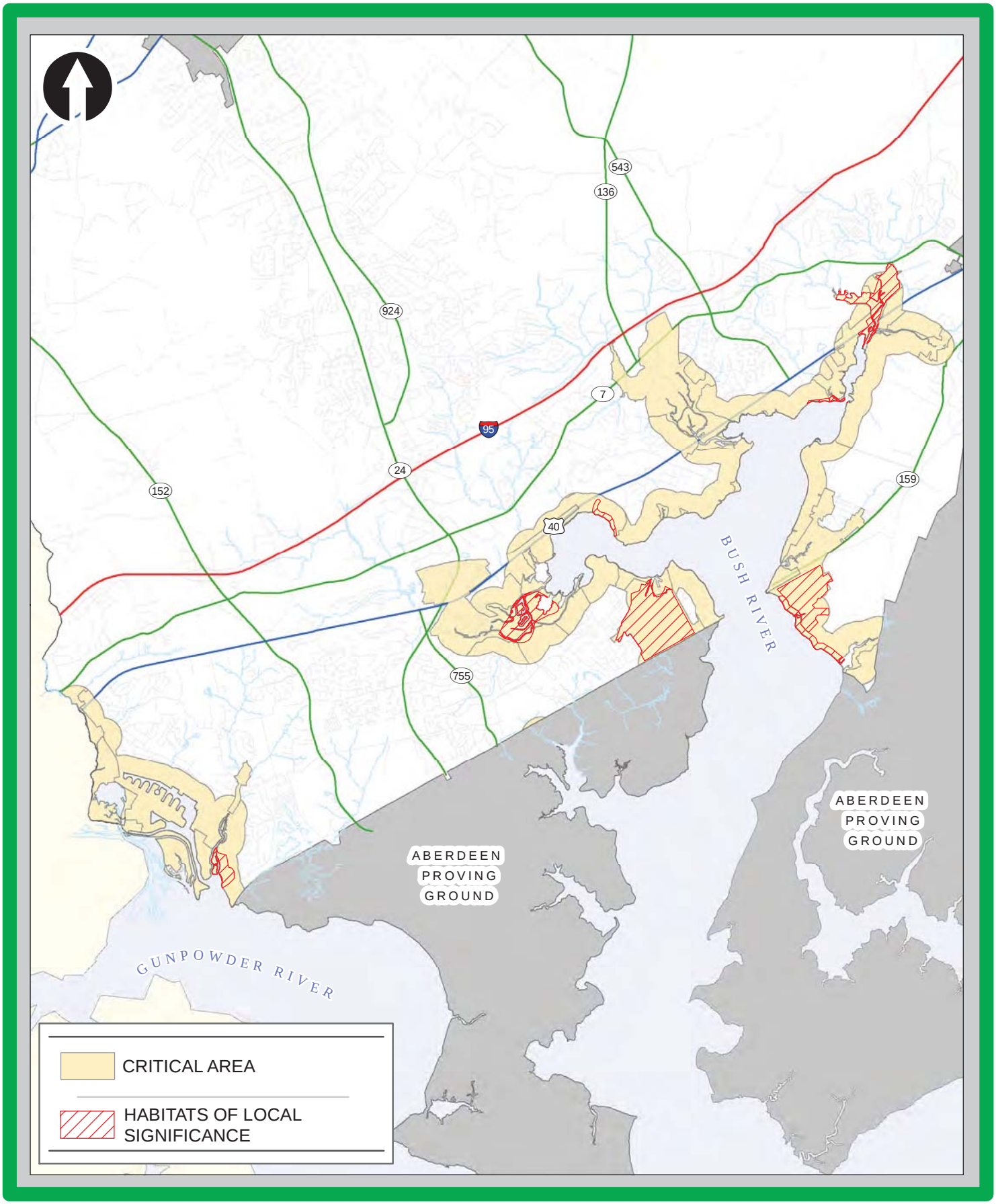
Deer Creek

FIGURE 11



HABITATS OF LOCAL SIGNIFICANCE IN THE SUSQUEHANNA RIVER &
SWAN CREEK PORTIONS OF THE CRITICAL AREA

FIGURE 12



HABITATS OF LOCAL SIGNIFICANCE IN THE GUNPOWDER RIVER &
BUSH RIVER PORTIONS OF THE CRITICAL AREA

III. EXISTING FEDERAL, STATE, AND LOCAL REGULATORY AND MANAGEMENT PROGRAMS

FEDERAL MARYLAND DARTER RECOVERY PLAN

The U.S. Fish & Wildlife Service is implementing the Endangered Species Recovery Plan for the Maryland Darter in the Deer Creek Watershed. The Plan is administered in conjunction with the State of Maryland, emphasizing the use of conservation agreements along the shoreline of the Darter's known habitat as well as the enforcement of water quality regulations regarding point and nonpoint discharges into Deer Creek to avoid any degradation of water quality.

STATE THREATENED AND ENDANGERED SPECIES REGULATIONS

The State's Threatened and Endangered Species regulations prohibit the taking, exporting, selling, offering for sale, delivery, carrying, transporting, or shipping by any means of Threatened or Endangered Species or of Species in Need of Conservation without a permit from the Department of Natural Resources.

The Bog Turtle (Glyptemys muhlenbergii) is considered state-threatened.

MARYLAND NATURAL HERITAGE PROGRAM

The Maryland Natural Heritage Program was established in 1979 by the Maryland Department of Natural Resources in cooperation with the Nature Conservancy to identify the State's significant natural areas and set practices for their protection. The program mandates a continuously updated inventory on the State's natural areas and plant and wildlife species, particularly rare, threatened and endangered species and unique and exemplary natural communities. Plant and wildlife species are ranked according to their rarity in accordance with the Natural Heritage classification system. This inventory provides the information that can be used by the State and private conservation groups to protect the habitats of rare species and exemplary communities through a variety of methods, including acquisition, conservation easements, and voluntary landowner agreements.

MARYLAND ENVIRONMENTAL TRUST CONSERVATION EASEMENT PROGRAM

The Maryland Environmental Trust (MET) is a semi-autonomous unit, administratively located in the Maryland Department of Natural Resources. The purpose of the trust is to conserve and improve the State's environment, including its land, water, air, wildlife, scenic, and open space resources. Through educational and other media, the MET encourages and motivates the populace of the State, and promotes continuing interest in perpetuating the aesthetic, natural, scenic, and cultural qualities of the State's environment.

The MET also:

- Acquires and maintains properties of aesthetic, scenic, or cultural value, or of value to the public health and welfare, by gift, purchase, or bequest;
- Receives appropriations, gifts, or bequests to carry out its purpose;
- Cooperates with and assists State, Federal, and local government agencies, private or public foundations, and individuals, to further the purposes of the Trust; and
- Promotes the establishment of local committees to work with the Trust to further its objectives at the local level.

The MET presently has an extensive program to acquire conservation easements for areas with significant environmental value. This conservation easement program helps to conserve farmland, woodlands, stream corridors, unique or rare natural areas, or other kinds of open space, by arranging non-development conservation easement agreements with private landowners. Through such agreements, landowners choose to give up their right to develop their land. In return, they receive tax benefits on their Federal and State income taxes and their local property taxes.

ENVIRONMENTAL LAND PRESERVATION COMMISSION BILL

In 1994, Harford County adopted legislation that provides a property tax credit of up to $500 a year for landowners who preserve environmentally sensitive or environmentally valuable lands through easement or donation to a qualified conservation organization.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

Harford County has instituted a protection program for areas within its Critical Area that are identified as Habitats for Threatened and Endangered Species and Species in Need of Conservation. First, as discussed above in Chapter 2, provisions have been put into the County's revised Subdivision Regulations and the Critical Area Ordinance to ensure that such areas are not adversely affected by activities proposed in or adjacent to such areas. Measures to ensure the integrity of such habitat shall be included in all Forestry Management Plans as well as Soil and Water Conservation Plans for forestry or agricultural operations proposed to be in or adjacent to such areas.

Whenever possible, cooperative management programs shall be developed with the landowners of such habitats to ensure long-term protection of these areas. Such protection will be ensured through the use of conservation easements, restrictive covenants, voluntary landowner agreements, and similar measures. Close coordination will be maintained with the Natural Heritage Program, the Maryland Environmental Trust, and pertinent private conservation organizations in instituting such management programs.

Consideration will be given to establishing a similar protection program for such areas in the remainder of the County through modification of the provisions of the Natural Resources District.

PART C. SIGNIFICANT PLANT & WILDLIFE HABITATS

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

In addition to Threatened and Endangered Species habitat, the Criteria identify several other types of areas of such significant plant and wildlife habitat value that they should be protected. These are:

- Colonial water bird nesting sites;
- Historic aquatic waterfowl staging and concentration areas;
- Riparian forests and other areas utilized as breeding areas by forest interior dwelling species;
- Natural Heritage Areas; and
- Plant and wildlife habitat determined to be of local significance.

The Criteria require different protective measures for each of the above types of area, recognizing their different characteristics. For colonial waterbird nesting areas, a sufficient buffer is to be established so that their nesting sites are protected from the adverse impacts of development activities and from

disturbance during the breeding season. For aquatic waterfowl staging and concentration areas, new water-dependent facilities are to be located in such a way so as to avoid disturbance to such areas. For forested areas utilized as breeding areas by forest interior dwelling species of birds and other wildlife species, development activities or the clearing or cutting of trees that might occur in such areas are to be conducted so as to conserve their value as habitat for forest interior dwelling species and other significant wildlife species. Natural Heritage Areas are to be protected from alteration due to development activities, cutting, or clearing so that the species structure and composition of the areas are maintained. For plant and wildlife habitats of local significance, appropriate measures are to be implemented to ensure that protections are provided.

II. SIGNIFICANT ISSUES AND FACTORS

For each type of plant and wildlife habitats listed above, the issues are the same. The first issue is to identify their location and the second, to develop appropriate protection programs for them. The approaches proposed to be taken with respect to each of these issues for each type of habitat area are discussed below.

COLONIAL WATERBIRD NESTING SITES

Certain types of herons, egrets, and terns, as well as the glossy ibis nest in colonies. Although a number of colonial waterbird nesting sites have been identified in the Chesapeake Bay area, none have been found to date in the area under the jurisdiction of Harford County. A tern colony exists on an island in the Susquehanna Flats that is under the jurisdiction of the U.S. Fish and Wildlife Service. Because the population of this species has declined dramatically throughout the Eastern United States, protection of any sites found in Harford County is important.

Such species are very sensitive to disturbance during the breeding season. Thus, the following management measures should be instituted for any colonial waterbird nesting sites that may be found in Harford County's Critical Area:

- A minimum one mile protection area buffer shall be established around any identified colonial waterbird nesting sites. Development activities or other disturbances shall be prohibited within these buffer areas unless a site-specific study prepared in conjunction with the State of Maryland Department of Natural Resources can prove that the development activity or other disturbance will not have or cause adverse impacts on the identified habitats. Any development activities or other disturbances that are allowed should not occur during the nest building and incubation periods during the months of February through April, and may extend until August.

- During February through April, noise from development activities should be minimized in areas adjacent to the buffer in order to avoid adverse impacts to nesting colonial waterbirds.

AQUATIC HISTORIC WATERFOWL STAGING AND CONCENTRATION AREAS

A historical source of information on the location of areas used by waterfowl in Harford County's Critical Area is the publication, "Environmental Sensitivity Index: An Atlas Illustrating the Sensitivity of the Coastal Environment to Spilled Oil" (1981, College of William and Mary, Virginia Institute of Marine

Science). Within this Atlas are maps that show locations of oil spill-sensitive waterfowl species. The Department of Natural Resources, Resource Conservation Service has mapped the general locations of the historic waterfowl staging and concentration areas for the State of Maryland. This mapped information has been incorporated into the Critical Area Natural Resource Maps for Harford County's Critical Area Management Program, as shown in Figures 13 and 14.

In addition, the above-referenced historical report lists the following areas and waterfowl species for Harford County:

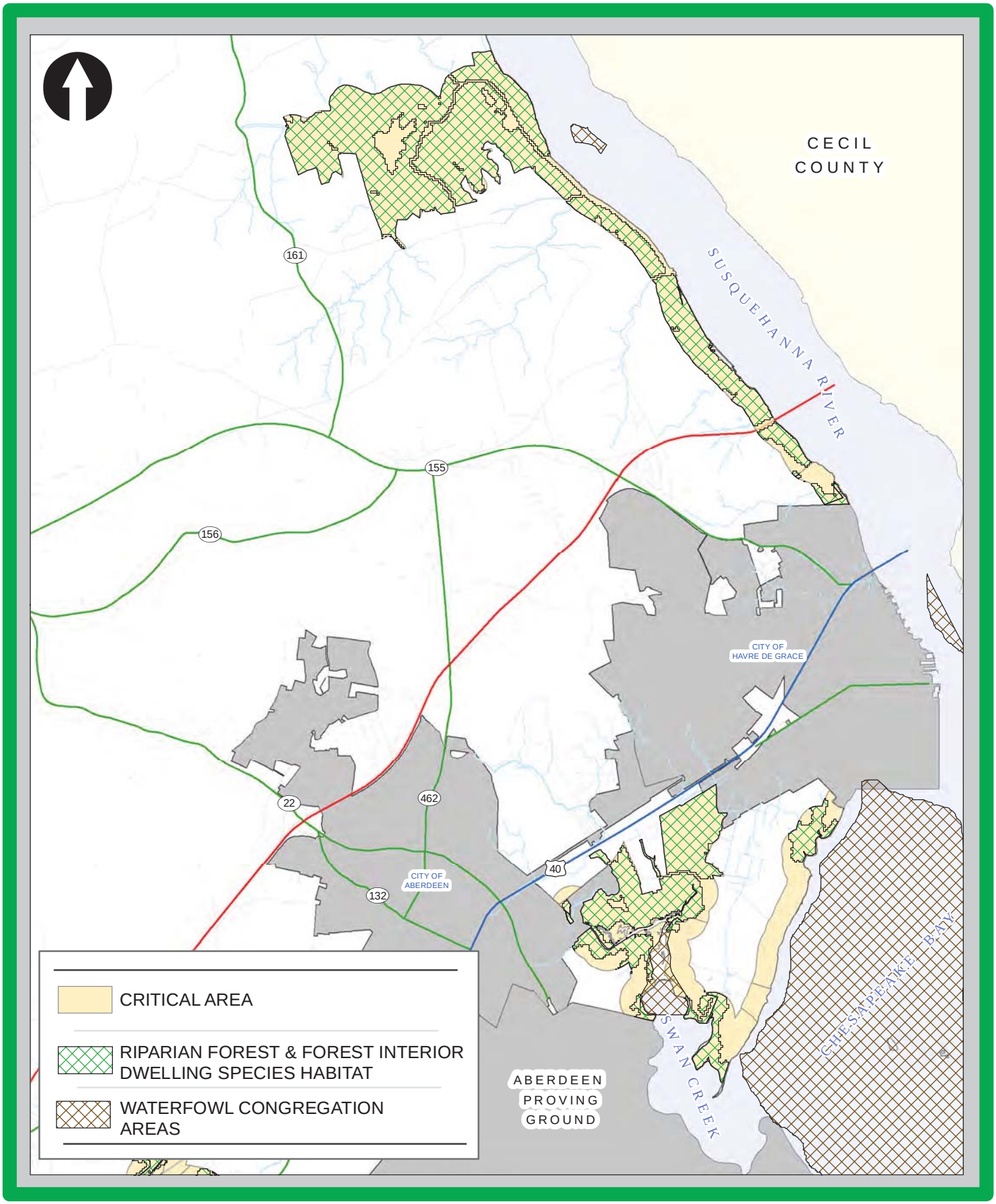
> "The following waterfowl species have been found to winter along the Susquehanna River from Conowingo Dam to Havre de Grace: mallards, black ducks, American goldeneyes, and common mergansers. These species are also common in the Susquehanna River and Susquehanna Flats during the fall, as are Canada geese. Canada geese, mallards, and black ducks are also common wintering species in the Swan Creek area, and in adjoining open waters of the Chesapeake Bay. Wood ducks presumably breed near the large tidal marshes to the north of Swan Creek, where they are found from spring to fall. Year-round waterfowl species present in the Bush River from Belcamp south into the waters surrounded by Aberdeen Proving Ground include mallards, black ducks, ring-necked ducks, American goldeneyes, and Canada geese. From spring to fall, wood ducks are found in the Otter Point marsh area, the wetlands north of Highway 40 near McComas and Van Bibber, and along Winter's Run from McComas to Atkisson Reservoir. Waterfowl species that commonly winter in open water areas south of Joppatowne include mallards, black ducks, American widgeons, Canada geese, and tundra (whistling) swans. In addition, wood ducks winter along the Little Gunpowder River from Highway 40 to the Gunpowder River, and south from this area to Days Cove and Rumsey Island."

Adequate protection will generally be given to the waterfowl in such areas by the maintenance of the Critical Area Buffer and the measures implemented to protect nontidal wetlands. The only additional measure needed is to prohibit the location of new water-dependent facilities in or adjacent to areas used by waterfowl as wintering or staging areas unless it is unavoidable. In addition, the use of any water-dependent facilities presently located in such areas or those that must be placed in such areas in the future should be limited during the period of November through March to avoid disturbance of waterfowl wintering there or using them as migratory staging areas.

RIPARIAN FORESTS AND OTHER FORESTED AREAS UTILIZED BY FOREST INTERIOR DWELLING SPECIES

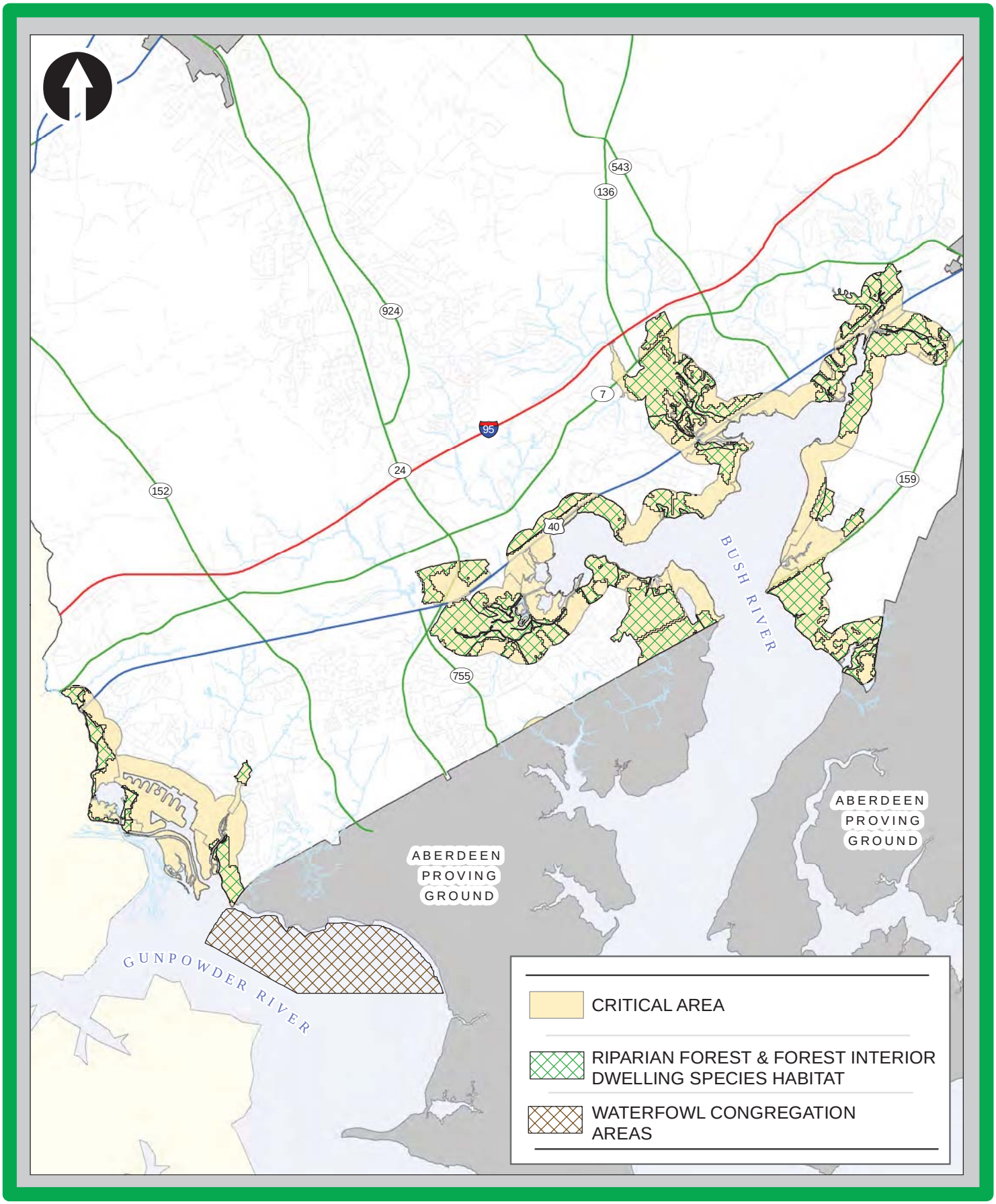
As noted above, two types of forested areas are identified in the Criteria as of particular importance because of their value as wildlife habitat, particularly for forest interior dwelling birds (those species of birds that require relatively large forested tracts to breed successfully). These are existing riparian forests (e.g., relatively mature forests of at least 300 feet in width that occur adjacent to streams, wetlands, or the Bay shoreline, which are documented breeding areas), and large forested areas utilized as breeding areas by forest interior dwelling species (e.g., relatively mature forested areas of 100 acres or more or forest connected to such areas). These forests have been mapped as shown in Figures 13 and 14. Table 7 lists those bird species considered to be forest interior dwelling species.

FIGURE 13



PROTECTED BIRD HABITATS IN THE SUSQUEHANNA RIVER &
SWAN CREEK PORTIONS OF THE CRITICAL AREA

FIGURE 14



PROTECTED BIRD HABITATS IN THE GUNPOWDER RIVER &
BUSH RIVER PORTIONS OF THE CRITICAL AREA

TABLE 7

LIST OF BIRD SPECIES OBSERVED IN HARFORD COUNTY

* indicates forest interior dwelling species (FIDS)
**indicates FIDS especially sensitive to disturbance

Red-throated loon	Turkey vulture	Glaucous gull
Common loon	Osprey	Thayers gull
Horned grebe	Bald eagle	Great black-backed gull
Double-crested cormorant	Northern harrier	Caspian tern
American bittern	Sharp-shinned hawk	Royal tern
Least bittern	Coopers hawk	Common tern
Great blue heron	**Red-shouldered hawk	Forster's tern
Great egret	**Broad-winged hawk	Least tern
Snowy egret	Red-tailed hawk	Rock dove
Little blue heron	Rough-legged hawk	Mourning dove
Cattle egret	American kestrel	Black-billed cuckoo
Green-backed heron	Merlin	Yellow-billed cuckoo
Black-crowned night heron	Peregrine falcon	Barn Owl
Glossy ibis	Ring-necked pheasant	Eastern screech owl
Tundra swan	Wild turkey	Great horned owl
Mute swan	Northern bobwhite	**Barred owl
Greater white-fronted goose	King rail	Long-eared owl
Snow goose	Virginia rail	Short-eared owl
Canada goose	Common moorhen	Snowy owl
Wood duck	American coot	Northern saw-whet owl
Green-winged teal	Black-bellied plover	Common nighthawk
American black duck	Semipalmated plover	*Whip-poor-will
Mallard	Greater yellowlegs	Chimney swift
Northern pintail	Lesser yellowlegs	Ruby-thrd. hummingbird
Blue-winged teal	Solitary sandpiper	Belted kingfisher
Northern shoveler	Spotted sandpiper	Red-headed woodpecker
Gadwall	Upland sandpiper	Red-bellied woodpecker
American Wigeon	Semipalmated sandpiper	Yellow-bellied sapsucker
Canvasback	Least sandpiper	Downy woodpecker
Redhead	Pectoral sandpiper	*Hairy woodpecker
Ring-necked duck	Dunlin	Northern flicker
Greater scaup	Short-billed dowitcher	*Pileated woodpecker
Lesser scaup	Common snipe	Eastern wood pewee
Oldsquaw	American woodcock	Yellow-bellied flycatcher
Common goldeneye	American woodcock	*Acadian flycatcher
Bufflehead	Laughing gull	Willow flycatcher
Hooded merganser	Bonaparte's gull	Least flycatcher
Common merganser	Ring-billed gull	Eastern phoebe
Red-breasted merganser	Herring gull	Great-crested flycatcher
Ruddy duck	Iceland gull	Eastern kingbird
Black vulture	Lesser black-backed gull	Horned lark

TABLE 7 continued

LIST OF BIRD SPECIES OBSERVED IN HARFORD COUNTY

* indicates forest interior dwelling species (FIDS)
**indicates FIDS especially sensitive to disturbance

Hooded warbler	Solitary vireo	Canada warbler
Purple martin	*Yellow-throated vireo	Yellow-breasted chat
Tree swallow	Warbling vireo	*Scarlet tananger
Northern rough-winged swallow	Philadelphia vireo	Northern cardinal
Bank swallow	*Red-eyed vireo	Rose-breasted grosbeak
Cliff swallow	Blue-winged warbler	Blue grosbeak
Barn swallow	Golden-winged warbler	Indigo bunting
Blue jay	Tennessee warbler	Rufous-sided towee
American crow	Nashville warbler	American tree sparrow
Fish crow	*Northern parula	Chipping sparrow
Black-capped chickadee	Yellow warbler	Field sparrow
Carolina chickadee	Chestnut-sided warbler	Vesper sparrow
Tufted titmouse	Magnolia warbler	Savannah sparrow
Red-breasted nuthatch	Cap May warbler	Grasshopper sparrow
White-breasted nuthatch	Black-throated blue warbler	Fox sparrow
**Brown creeper	Yellow-rumped warbler	Song sparrow
Carolina wren	**Black-throated green warbler	Swamp sparrow
House wren	Blackburnian warbler	White-throated sparrow
Winter wren	Yellow-throated warbler	White-crowned sparrow
Marsh wren	Pine warbler	Dark-eyed junko
Gold-crowned kinglet	Prairie warbler	Lapland longspur
Ruby-crowned kinglet	Palm warbler	Snow bunting
Blue-gray gnatcatcher	Bay-breasted warbler	Bobolink
Eastern bluebird	Blackpoll warbler	Red-winged blackbird
*Veery	**Cerulean warbler	Eastern meadowlark
Gray-cheeked thrush	*Black-and-white warbler	Rusty blackbird
Swainson's thrush	**American redstart	Common Grackle
Hermit thrush	*Prothonotary warbler	Brown-headed cowbird
*Wood thrush	**Worm-eating warbler	Orchard oriole
American robin	*Ovenbird	Northern oriole
Gray catbird	Northern waterthrush	Purple finch
Northern mockingbird	**Louisiana waterthrush	House finch
Brown thrasher	**Kentucky warbler	Pine siskin
American pipit	Connecticut warbler	Common redpoll
Cedar waxwing	Mourning warbler	American goldfinch
Loggerhead shrike	Common yellowthroat	Evening grosbeak
European starling	**Hooded warbler	House sparrow
White-eyed vireo	Wilson's warbler	**Swainson’s Warbler

Confirmation of the presence of these species and the other species on the list can only be made by site surveys undertaken during the breeding season using approved survey methods such as those being used to develop the State Breeding Bird Atlas (see Appendix J for a detailed discussion of approved survey methods). For an area to be considered a significant forest interior dwelling species habitat, the breeding of one sensitive species, or four other species, must be documented.

However, forest areas likely to contain such species can be identified by their size, location, and tree species composition. The locations of such potential areas have been identified on the County's Natural Features Maps. The identification of forested areas as forest interior dwelling species habitat does not mean that no development or cutting or clearing of trees can occur, but that it must be done in a manner that preserves the forest's value as habitat for such species. Thus, the following management practices should be applied to such areas:

- Minimize disturbance during the May-August breeding season (i.e., from off-road vehicles, intensive public use, or logging);
- Locate development or other activities that would cause disturbance to the forested areas on the periphery of the area (i.e., roads, utility line corridors, structures , etc.);
- Retain the continuous cover of branches and foliage that is formed by the crowns of adjacent trees (e.g., the forest canopy) and trees and shrubs underneath the canopy;
- Retain standing dead trees (e.g., snag trees) which serve as bird nesting and feeding habitats;
- Avoid the creation of small clearings and the disproportionate expansion of forest edge habitat;
- Any significant forest area that is temporarily cleared should be replaced with native forest vegetation; and
- Timber harvesting shall not be undertaken in such areas unless it can be demonstrated that harvesting techniques will maintain or improve habitat for forest interior dwelling species.

Alteration to areas identified as potential forest interior dwelling species habitat shall be delayed until breeding bird surveys can be done for the area; the assumption being that such habitat is present and therefore appropriate management practices should be followed.

NATURAL HERITAGE AREAS

In order for an area to be designated as a Natural Heritage Area, it must contain one or more threatened or endangered species, or one or more wildlife species in need of conservation, and be a unique blend of geological, hydrological, climatological, or biological features, and be among the best statewide examples of its kind. No Natural Heritage Areas have been presently designated in Harford County's Critical Area. Should an area be identified, it is expected that the same management approach will be followed as the one proposed for Habitats of Threatened and Endangered Species and Species in Need of Conservation. Whenever possible, this should include development of protection programs in cooperation with the land owner for the retention of the area in a natural state, complemented by review of proposed activities on adjacent properties for their possible impacts on the Natural Heritage Area. The

cooperative protection program will be implemented through the use of conservation easements, cooperative management agreements with the land owner, and similar measures.

HABITATS OF LOCAL SIGNIFICANCE

Habitats of Local Significance are those habitats that may not be of significance statewide, but are significant locally because they contain a unique blend of geological, hydrological, climatological, or biological features, and are among the best county-wide examples of their kind. Harford County, with the assistance of the Maryland Natural Heritage Program, has identified several sites appropriate for such designation in its Critical Area. They contain a rare blend of biological features and contain or have the potential of containing habitats of rare or threatened species. Sites are located along the shores of the Susquehanna River, in the Perryman area near Aberdeen Proving Grounds, the Willoughby Beach peninsula, and along Pulaski Highway near Church Creek. A detailed description of each site can be found in Appendix I. The location of each Habitat of Local Significance has been mapped in the Habitats of Local Significance Maps.

Since these areas contain sensitive natural features, activities proposed in or adjacent to them need to be carefully reviewed to avoid adverse impacts to these areas. Whenever possible, cooperative protection programs will be developed with the land owners of the sites in question and complemented by review of projects proposed in or adjacent to such sites through the development review process, Forest Management Plans, and Soil and Water Conservation Plans where pertinent.

The designation of an area as a Habitat of Local Significance is not intended to restrict noncommercial passive recreation activities such as hiking and nature photography. These activities are likely to have little adverse impact to the sites, and are therefore considered to be allowable uses. On the other hand, active recreational activities, including the use of off-road vehicles, have potential to cause damage to the sensitive areas of the sites, and therefore are prohibited.

Harvesting of timber for both personal and commercial uses shall not be undertaken in the designated Habitats of Local Significance. Harvesting that takes place adjacent to such areas will have to be conducted in such a manner that disturbance to sensitive areas of the sites, including nontidal wetlands, is avoided. Logging roads, for instance, should be located away from these sensitive areas. Harvesting should also not adversely affect the habitat value of the sites for forest interior dwelling bird species, where it presently exists. Protection of the sensitive features of a site will be ensured through the requirement that a Forest Management Plan be developed for any timber harvesting near such areas by a registered, professional forester and approved by the Maryland Forest Service and the Harford County Department of Planning and Zoning.

If any additional Habitats of Local Significance are identified in the future, a similarmanagement approach will be taken. Also, consideration will be given to the protection of any similar areas found in the remainder of the County through revision of the provisions of the Natural Resources District.

III. FEDERAL, STATE, AND LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

As discussed in the previous section on Threatened and Endangered Species and Species in Need of Conservation, the Maryland Environmental Trust administers voluntary conservation easement programs. Through this program, land owners give up their development rights on environmentally sensitive portions of their properties in exchange for tax benefits.

IV. MODIFICATIONS MADE TO STATE AND LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

Harford County has established a plant and wildlife habitat protection program for the various types of plant and wildlife habitats discussed above. Activities proposed in or adjacent to such areas will be reviewed for potential adverse impacts in accordance with the pertinent provisions of the Subdivision Regulations and the Critical Area Ordinance that were discussed previously in Chapter 2. Forestry operations and agricultural activities will be undertaken in accordance with Forest Management Plans and Soil and Water Conservation Plans that contain provisions providing protection for areas identified as significant plant and wildlife habitat.

Where the development of detailed management programs for specific sites is appropriate such as for areas designated as Habitats of Local Significance, the assistance of the Maryland Department of Natural Resources will be sought.

PART D. ANADROMOUS FISH PROPAGATION WATERS

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

Anadromous fish propagation waters are defined by the Criteria as "those streams that are tributary to the Chesapeake Bay where spawning of anadromous species of fish (e.g., rockfish, yellow perch, white perch, shad, and river herring) occurs or has occurred." Such streams were designated by the Department of Natural Resources. The Criteria establish the following objectives for local Critical Area Management Programs with respect to anadromous fish:

- Protect the instream and streambank habitat of anadromous fish propagation waters;
- Enforce land use policies and practices in the watershed of spawning streams within the Critical Area that will minimize the adverse impacts of development on the water quality of the streams; and
- Provide for the unobstructed movement of spawning and larval forms of anadromous fish in streams.

To achieve the objectives, local governments are to ensure that:

- The installation or introduction of concrete riprap or other artificial surfaces onto the bottom of natural streams is prohibited, unless it can be demonstrated that water

quality and fisheries habitat will be improved;

- Channelization or other physical alterations that may change the course or circulation of a stream and thereby interfere with the movement of fish is prohibited; and

- Adverse impact on anadromous fish spawning streams from activities occurring in their watersheds are to be firstly avoided or otherwise minimized. Local jurisdictions are encouraged to adopt land use policies and programs in watersheds outside of the Critical Area to minimize the impacts of any activities on anadromous fish spawning streams.

In addition, the Criteria require that local governments abide by the following State laws and regulations:

- The construction or placement of dams or other structures that would interfere with or prevent the movement of spawning fish or larval forms in streams shall be prohibited. If practical, the removal of existing barriers shall be removed (COMAR 08.05.03.05).

- Local jurisdictions shall assure that the construction, repair, or maintenance activities associated with bridges, or other stream crossings or with utilities and roads, which involve disturbance within the Buffer or which occur instream, as described in COMAR 08.05.03.11B(5), shall be prohibited between March 1 and June 15.

II. SIGNIFICANT ISSUES AND FACTORS

The major issues associated with anadromous fish propagation waters are identification of those streams designated as anadromous fish propagation waters and the establishment of measures to ensure the protection of anadromous fish spawning streams from adverse impacts resulting from activities occurring in those streams or in their watersheds.

IDENTIFICATION OF ANADROMOUS FISH SPAWNING STREAMS IN HARFORD COUNTY

When the Critical Area Management Program was developed, the Maryland Department of Natural Resources stated that all perennial streams in Harford County's Critical Area should be considered anadromous fish spawning streams. As a result, such streams have not been mapped due to their pervasive nature. Their approximate location can be identified by reference to the U.S.G.S. 7" quad maps or the Harford County Soil Survey. Identification of the exact location of any streams located on a proposed site will be required as part of the County's development review process.

IMPLEMENTATION OF APPROPRIATE PROTECTION MEASURES

Implementation of the other requirements of the Critical Area Criteria should provide adequate protection to anadromous fish spawning streams. Among the most pertinent requirements are those relating to establishment of the 100-foot Critical Area Buffer and the protection of nontidal wetlands and

other Habitat Protection Areas. Implementation of the recommendations of the County's Sediment Control and Stormwater Management Evaluation Study discussed in Chapter 2 should address the requirement for minimizing impacts on anadromous fish spawning streams due to activities occurring in their watersheds. With regard to extending protections for anadromous fish spawning streams beyond the Critical Area, it should be noted that the County's Natural Resources District Ordinance is applicable countywide. That ordinance requires a minimum 75 foot natural buffer along streams, restriction of development on steep slopes and soils with development constraints, and requires activities proposed near streams be completed in such a manner that minimizes adverse environmental impacts.

III. FEDERAL, STATE AND LOCAL REGULATORY AND MANAGEMENT PROGRAMS

STATE WATERWAY CONSTRUCTION/OBSTRUCTION PERMIT

Any activity that occurs in a free flowing stream with a watershed of 400 acres or more (or 100 acres or more in the case of trout streams) requires a Waterways Construction/Obstruction Permit from the Maryland Department of the Environment. The required conditions for such a permit require that all bridges and culverts be constructed so as not to adversely affect fish habitat and migration patterns, and that the construction of proposed projects that may adversely affect anadromous fish spawning areas is prohibited from March 1 through June 15.

NATURAL RESOURCES DISTRICT

Outside of the Critical Area, the County's Natural Resource District provides for maintenance of a natural buffer adjacent to streams, protection of significant environmental features such as nontidal wetlands, and the minimization of potentially adverse impacts of activities near streams.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

The measures instituted to address other parts of the Criteria shall provide adequate protection to anadromous fish propagation waters. In addition, the Zoning Code requires a condition of approval that any proposed development in the Critical Area for construction, repair, or maintenance associated with bridges or other stream crossings, or with utilities and roads that occur instream or involve disturbance within the Buffer, not be undertaken during the period between March 1 and June 15. All proposed instream construction projects shall maintain the natural stream channel bottom and predevelopment conditions.

PART E. NONTIDAL WETLANDS

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

In addition to the Habitat Protection Areas specified in COMAR 27.01.09, Harford County implements a nontidal wetlands protection program based upon the provisions in the Natural Resources District transferred in slightly modified form to the Critical Area Ordinance, and appropriate provisions to be

included in Soil and Water Conservation Plans for agricultural areas that may contain nontidal wetlands. Table 8 lists the positive indicators for wetlands of special importance.

TABLE 8

POSITIVE INDICATORS OF NONTIDAL WETLANDS OF SPECIAL IMPORTANCE

A wetland complex – when the area contains two or more contiguous wetland types.	
A special soil type – when wetlands (excluding those dominated by loblolly pine) occur on the soil types of Elkton, Muck, or Evesboro-Goldstown. These soils are often well-drained, but when a wetland is present, the area should be examined.	
Wetlands in sand/gravel pits that have been abandoned for over five years.	
Seep wetlands – springs that pool water at the surface because there is a wetter water regime than in adjacent areas. These wetlands have muck or peat soils present, or there is at least a 70% cover of sphagnum moss. Plant species include:	
COMMON NAME	LATIN NAME
Skunk Cabbage	*Symplocarpus foetidus*
Follciled Sedge	*Carex folliculata*
Marsh Marigold	*Caltha palustris*
Canada Mayflower	*Maianthemum canadensis*
Wood Anemone	*Anemone quinquefolia*
Wooded wetlands dominated by large trees (greater than 24" DBH) with less than 30% herbaceous cover in exotic species. Exotic species include:	
COMMON NAME	LATIN NAME
Japanese Honeysuckle	*Lonicera japonica*
Japanese Barberry	*Berberis thunbergii*
Japanese Knotweed	*Polygonum cuspidatum*
Kudzu Vine	*Pueraria lobata*
Asiatic Knotweed	*Polygonum perfoliatum*
Daylily	*Hemerocallis fulva*
Multiflora Rose	*Rosa multiflora*
Privet	*Ligustrum spp.*
Garlic Mustard	*Alliaria officinalis*
Autumn/Russian Olive	*Eleagnus spp.*
Purple Loosestrife	*Lythrum salicaria*
Common Reed	*Phragmites australis*
Wooded wetland shrubs and herbaceous cover of at least 30%, as an indication of well-defined vegetative layers with high plant species diversity.	
Wooded or shrub dominated wetlands over one acre in size.	

TABLE 8 continued POSITIVE INDICATORS OF NONTIDAL WETLANDS OF SPECIAL IMPORTANCE
Wetlands associated with extensive forested tracts, such as may be used by interior dwelling bird species.
Bogs - highly acidic wetlands characterized by peat, or a floating mat of vegetation, and sphagnum moss. They often occur adjacent to old millponds and in old sand/gravel pits.
Wooded wetlands with vernal pools (seasonal ponds).

II. SIGNIFICANT ISSUES AND FACTORS

The location of stormwater management measures in nontidal wetlands will be limited to those for which there is no other viable location, as demonstrated with an approved variance, and whose water quality benefits outweigh the adverse impacts on the water quality and plant and wildlife habitat values of the nontidal wetlands affected. In determining the adverse impacts of the location of such facilities, consideration will be given to the compensatory value of mitigation measures proposed to replace the lost water quality and habitat value of the affected nontidal wetlands. Any stormwater management measures constructed will be required to be undertaken in a manner that minimizes their adverse impact on the nontidal wetlands.

Provisions will also be made to allow the construction of water-dependent facilities that may adversely affect nontidal wetlands if such impacts are necessary and unavoidable and if appropriate mitigation measures are taken. Similarly, the location of roads, utilities and bridges in nontidal wetlands will be allowed only if no feasible alternative exists and impacts are minimized and are appropriately mitigated.

III. FEDERAL AND STATE REGULATORY AND MANAGEMENT PROGRAMS

FEDERAL REGULATORY PROGRAMS

CLEAN WATER ACT

Under Section 404 of the Clean Water Act, the Corps of Engineers regulates the discharge of dredge or fill material into the waters and wetlands of the U.S., subject to oversight by the Environmental Protection Agency. The Environmental Protection Agency maintains final authority in defining the extent of wetlands and if it is determined that a discharge will have unacceptable impacts on municipal water supplies, shellfish and fishery areas, wildlife, and/or recreation, the Environmental Protection Agency can veto issuance of the Corps permit. The U.S. Fish and Wildlife Service provides advisory comments to the Corps of Engineers regarding proposed projects that may affect nontidal wetlands or water bodies. Under Section 401 of the Clean Water Act, the Maryland Department of the Environment is the delegated authority to administer water quality certification programs. All projects involving discharge into wetlands and State waters are reviewed by the Maryland Department of the Environment for potential adverse impacts.

FARM BILL OF 1985 (FOOD SECURITY ACT) TITLE XII SECTION E ("SWAMPBUSTER")

As noted in the chapters on agricultural activities, the Department of Agriculture is to withhold benefits such as farm loans and crop insurance from farmers who convert wetlands for agricultural use subsequent to the passing of this Act.

STATE PROGRAMS

WATERWAY CONSTRUCTION PERMITS

The Waterway Construction Division of the Maryland Department of the Environment issues waterway construction permits for work in a stream or its 100-year nontidal floodplain, including construction, fill, or placement of structures. Agricultural drainage systems, for the purpose of lowering the level of water in the soil, with a drainage area less than 2,500 acres are exempt from needing permits (COMAR 26.17.04.03 D). The Nontidal Wetlands Division of the Maryland Department of the Environment have regulations (COMAR 26.23.02) that require applicants to mitigate, replace, or minimize loss of habitat when there is no reasonable alternative to causing adverse effects on nontidal wetlands.

COASTAL ZONE MANAGEMENT PROGRAM CONSISTENCY DETERMINATIONS

The Coastal Zone Consistency Division of the Maryland Department of the Environment issues recommendations and makes consistency determinations to other State and Federal agencies regarding projects affecting the State's Coastal Zone. The Coastal Zone includes Baltimore City as well as the counties that border the Chesapeake Bay, Potomac River, and Atlantic Ocean.

STATE NONTIDAL WETLANDS PROGRAM

As discussed in Chapter 3, the Maryland Department of the Environment reviews and evaluates permits for impacts to nontidal wetlands through the 404 Joint Application process with the Army Corps of Engineers. The Maryland Department of the Environment has the authority to issue or deny State Wetlands Permits. In addition, the Maryland Department of the Environment provides technical assistance and training to State and local governmental agencies on issues involving nontidal wetlands.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

In the Chesapeake Bay Critical Area, the Zoning Code requires the retention of a 75-foot buffer around nontidal wetlands, and prohibits alteration of those nontidal wetlands and their Buffers. An estimation of the location of wetlands is provided by the Harford County Soil Survey (Soil Conservation Service, 1972). Hydric soils and soils that have hydric components are listed in Table 1 of this Program. Protection will also be provided to nontidal wetlands regardless of their size that are found to be hydrologically connected through surface or subsurface flow to streams, tidal waters, and/or determined to be of special importance to fish, wildlife, or plant habitat by appropriate federal, State, and local agencies.