

SECTION III
AFFECTED ENVIRONMENT

CHAPTER III

AFFECTED ENVIRONMENT

A. SOCIAL AND ECONOMIC ENVIRONMENT

1. Introduction

As shown in **Figure I-1**, the study area lies within southwestern Anne Arundel County and northeastern Prince George's County, Maryland, and within the context of the larger urban areas of Baltimore and Annapolis, Maryland, and Washington, D.C. The largely suburban project study area contains a portion of the City of Bowie and several smaller unincorporated communities. Many employment opportunities exist within the study area, yet many residents commute to employment centers outside of the area. Despite the overall suburban development that dominates the study area, several farms of various sizes remain. The study area is a long-established transportation corridor that has influenced land use patterns by providing access to neighborhoods, communities, and businesses, and by serving as a boundary between communities. During its long history, the MD 3 roadway has been altered several times. Businesses and homes are now located in the median of MD 3, due to its prior dualization.

The MD 3 social and economic study area includes not only the MD 3 corridor, but also the adjacent neighborhoods that might be affected by the project, either in a positive or negative way. Based on the results of field reconnaissance, eight smaller, distinct communities were identified within the study area according to access routes, natural barriers, or manmade barriers such as transportation corridors (see **Figure III-1**).

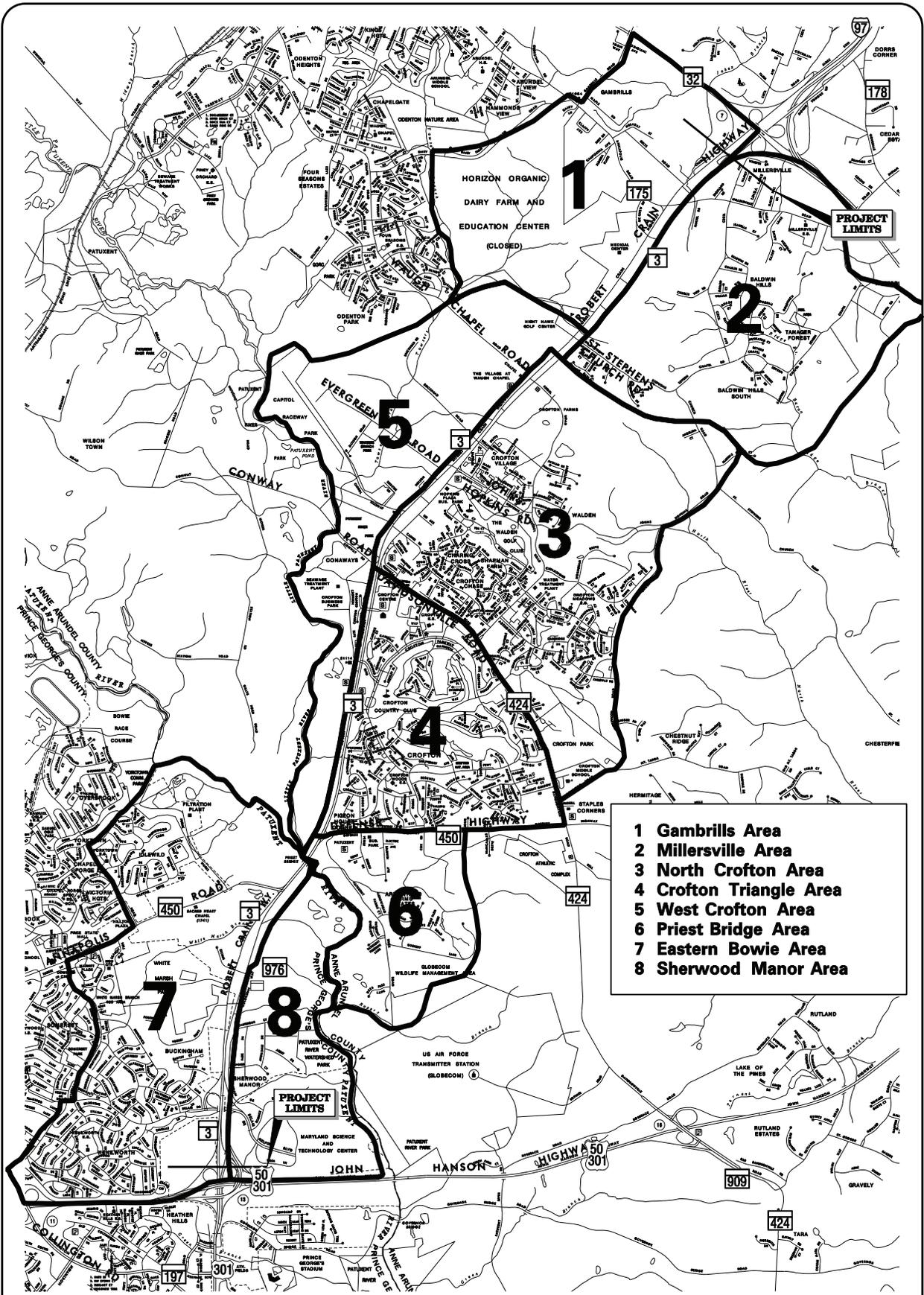
2. Social Characteristics

The social and economic characteristics of populations at the counties, study area, and project corridor area level were compared. This comparison provided an understanding of similarities and differences between the social and economic characteristics of the study area population and the characteristics of the surrounding counties. It also assisted in the identification of low-income and minority populations.

a. Population and Housing

Census Tracts and Population

Basic demographic information for the study area was obtained from 2000 U.S. Census data and supplemented with information obtained during interviews with county planners and data obtained from small area and master plans. **Figure III-2** shows the boundaries of both the census tracts and block groups for each community area. Each of the following eight census tracts includes a portion of the study area:



- 1 Gambrills Area
- 2 Millersville Area
- 3 North Crofton Area
- 4 Crofton Triangle Area
- 5 West Crofton Area
- 6 Priest Bridge Area
- 7 Eastern Bowie Area
- 8 Sherwood Manor Area

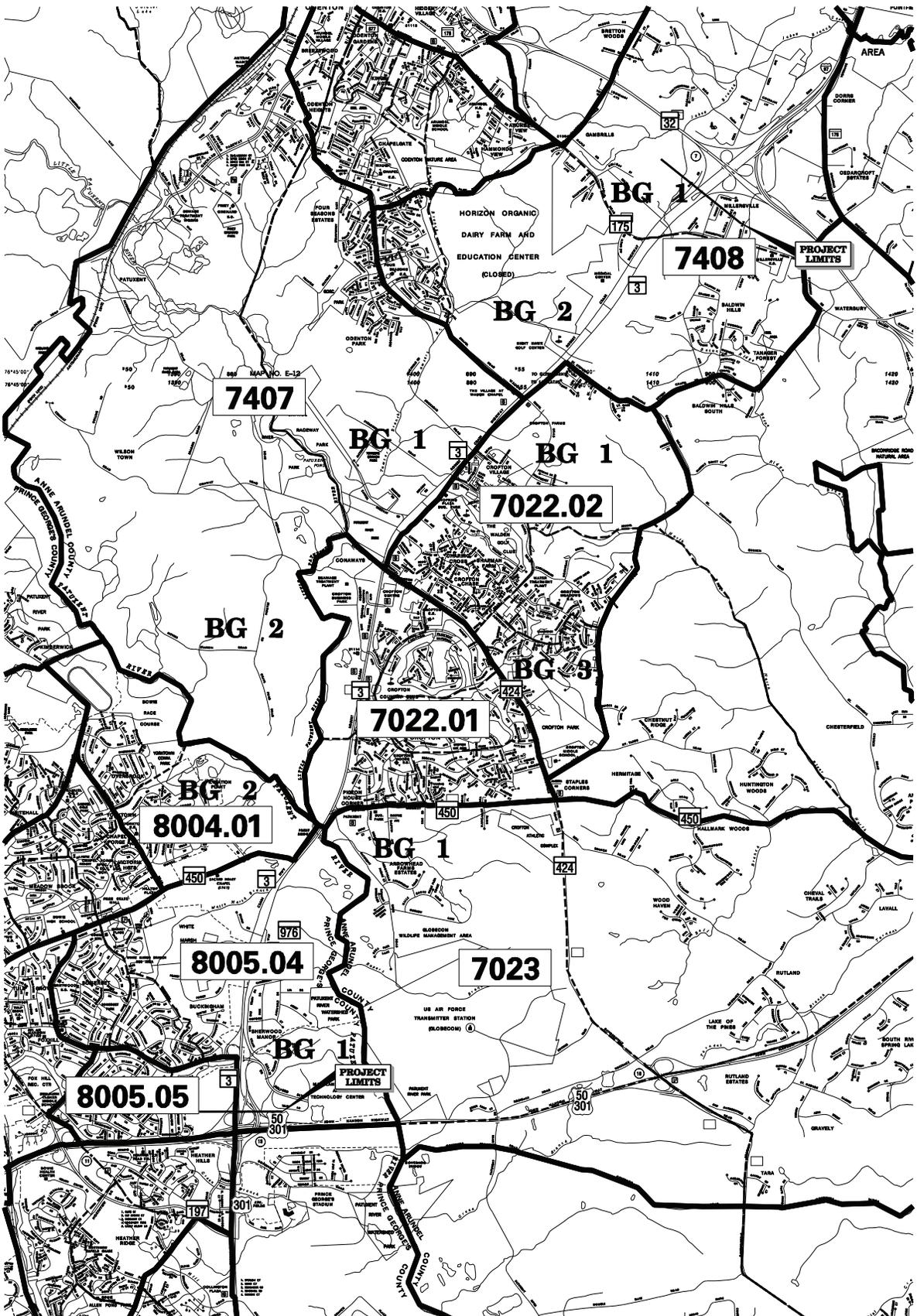


SNA MARYLAND DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION

MD 3 PROJECT PLANNING STUDY
 Final Environmental Impact Statement

STUDY AREA COMPOSITION

SCALE	As Shown	FIGURE	III-1
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LEGEND

-  CENSUS TRACT BOUNDARY
-  CENSUS TRACT NUMBER
-  CENSUS BLOCK GROUP BOUNDARY



SNA MARYLAND DEPARTMENT OF TRANSPORTATION
State Highway Administration

MD 3 PROJECT PLANNING STUDY
Final Environmental Impact Statement

2000 CENSUS TRACTS & BLOCK GROUPS

SCALE	As Shown	FIGURE	III-2
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- Census Tract 7022.01 - Block Groups 1, 2, 3, 4 and 5
- Census Tract 7022.02 - Block Groups 1, 2, 3, and 4
- Census Tract 7023 - Block Group 1
- Census Tract 7407 - Block Groups 1 and 2
- Census Tract 7408 - Block Groups 1 and 2
- Census Tract 8004.01 - Block Group 2
- Census Tract 8005.04 - Block Groups 1 and 2
- Census Tract 8005.05 - Block Groups 1 and 2

Prince George's County is the second most populated jurisdiction in the State of Maryland, and Anne Arundel County is the fourth. Both counties are experiencing increasing growth, especially in suburban areas that house workers in the Baltimore, Annapolis, and Washington D.C. metro areas. Since 1990, the population of Prince George's County has increased by 10 percent, and the population of Anne Arundel County has increased by 14.6 percent. According to Census 2000 data, the total population of the census tracts that encompass the study area is 42,515 with 6,710 persons in Prince George's County and 35,805 persons in Anne Arundel County. The study area population comprises 7.31 percent of the total Anne Arundel County population and 0.84 percent of the total Prince George's County population. The composition of the study area has changed significantly between 1990 and 2000. Because of the considerable increase in population density, the Department of Commerce shifted the boundaries of the 1990 Census Tracts for the 2000 Census.

Racial Characteristics

The population in the study area is 87.3 percent white, compared with 27.0 percent white in Prince George's County and 81.2 percent white in Anne Arundel County (see **Table III-1**). Thus, the study area population is more representative of the total population of Anne Arundel County than the total population of Prince George's County. In Prince George's County, Census Tract 8004.01 has the greatest minority population (see **Table III-2**).

Age, Gender, and Disabled Distributions

Based on 2000 U.S. Census data, the age and gender distributions in the study area are similar to the overall distributions of both Prince George's and Anne Arundel Counties. In the study area, 27.6 percent of the population is under 18 years of age and 7.0 percent of the population is above 65 years of age. Nearly 20 percent of the population is 35 to 44 years of age. Census Tract 8004.04, located in Bowie, has the highest percentage (15.2 percent) of persons over 65 years of age. The smallest percentage of persons over 65 years of age is 3.8 percent in Census Tract 7022.02. The census tract with the greatest number of persons under 18 is Census Tract 7023 with 36.2 percent. Census Tract 7408 has the lowest number, 20.8 percent. These statistics may have shifted since Census 2000. The newly opened Village of Waugh Chapel, located at the MD 3/Waugh Chapel Road intersection, contains over 400 senior and assisted living units. These residents were not represented in Census 2000 because construction of the facility was still ongoing in 2000.

**Table III-1
Population, Racial Distribution, and Income by County**

POPULATION			
	Study Area	Prince George's County	Anne Arundel County
Total Population	42,515	801,515	489,656
RACIAL DISTRIBUTION (Percentages)			
	Study Area	Prince George's County	Anne Arundel County
White	87.3	27.0	81.2
African American	7.2	62.7	13.6
American Indian or Alaska Native	0.4	0.3	0.3
Asian	2.5	3.9	2.3
Native Hawaiian or Other Pacific Islander	0.0	0.1	0.1
Other race	0.6	3.4	0.9
Two or more races	2.0	2.6	1.7
MEDIAN HOUSHOLD INCOME			
	Study Area	Prince George's County	Anne Arundel County
Median Household Income	\$74,333	\$55, 256	\$61,768

Source: Census 2000

**Table III-2
Population, Racial Distribution, and Income by Census Tract**

POPULATION								
	7022.01	7022.02	7023	7407	7408	8004.01	8005.04	8005.05
Total Population	9145	15,458	5265	8292	4181	2479	4763	2728
RACIAL DISTRIBUTION (Percentages)								
	7022.01	7022.02	7023	7407	7408	8004.01	8005.04	8005.05
White	91.6	86.8	94.8	82.2	87.3	81.1	86.5	87.8
African American	4.3	7.3	1.6	11.3	9.9	13.4	5.4	6.6
American Indian or Alaska Native	0.3	0.6	0.5	0.1	0.0	0.0	1.0	0.0
Asian	2.1	2.4	2.7	3.2	1.6	4.7	3.2	1.3
Native Hawaiian or Other Pacific Islander	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Other Race	0.8	0.9	0.1	0.1	0.2	0.7	1.4	0.8
Two or More races	0.9	1.9	0.4	3.1	1.0	0.0	2.4	3.5
MEDIAN HOUSHOLD INCOME								
	7022.01	7022.02	7023	7407	7408	8004.01	8005.04	8005.05
Median Household Income	\$74,510	\$71,672	\$98,664	\$67,491	\$77,684	\$77,591	\$73,798	\$72,148
POPULATION BELOW POVERTY STATUS (Percentages)								
	7022.01	7022.02	7023	7407	7408	8004.01	8005.04	8005.05
Population Below Poverty	2.4	3.5	3.1	1.8	3.3	0.8	2.1	1.7

Source: Census 2000

The study area gender distribution is 51 percent female and 49 percent male. Regarding the distribution of the disabled within the study area, there are no known centers or homes specifically for the benefit of individuals with mental or physical disabilities.

Income Levels

The median household income of study area residents is \$74,333, which exceeds the median household income of \$55,256 for Prince George’s County residents by approximately 34.5 percent and exceeds the median income of \$61,768 for Anne Arundel County residents by approximately 20.3 percent. Using block group statistics, median household incomes throughout the study area range from \$54,018 to \$109,970, in Census Tract 7022.01 Block Group 1 and Census Tract 7022.01 Block Group 5, respectively.

Housing

Based on U.S. Census data, the study area includes approximately 15,356 households and 15,828 housing units. Census 2000 data indicates that 80.6 percent of the housing units in the study area are owner occupied, which exceeds the rate of 58.9 percent owner-occupied housing units in Prince George’s County and 75.5 percent owner-occupied housing units in Anne Arundel County. The median value of owner-occupied units for the study area is \$184,684, which is higher than the median value of \$145,600 in Prince George’s County, and the median value of \$159,300 for owner-occupied homes in Anne Arundel County. The median gross rent for renter-occupied housing units in the study area is \$1,058 per month. These values have likely shifted since the 2000 Census because of new residential development in growing areas like North Crofton.

b. Environmental Justice

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority and Low-Income Populations,” provides the administrative foundation to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

SHA’s program to ensure environmental justice is based on the U.S. Department of Transportation (DOT) Order on Environmental Justice, which defines the fundamental principles of environmental justice as:

- Avoiding, minimizing, or mitigating disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- Ensuring full and fair participation by all potentially affected communities in the transportation decision-making process.
- Preventing the denial of, reduction in or significant delay in the receipt of benefits by minority and low-income populations.

SHA's first step in ensuring that environmental justice principles are implemented is to identify locations where low-income and minority populations exist. SHA used the DOT Order on Environmental Justice for the following definitions:

- Minority – a person who is Black, Hispanic, Asian American, American Indian or Alaskan Native.
- Low-income – a person whose median household income is at or below the Department of Health and Human Services poverty guidelines.
- Minority population – any readily identifiable group of minority persons who live in geographic proximity.
- Low-income population – any readily identifiable group of low-income persons who live in geographic proximity.

Methodology for Identification of Environmental Justice Populations

SHA used multiple information sources to identify environmental justice populations.

- U.S. Census Bureau – Census 2000 census tract-block group information was used to identify the race and poverty status of study area residents.
- National Center for Education Statistics – 2001-2002 Common Core of Data (CCD) provided demographic information for the public schools in the study area. The information included racial composition, as well as the number of students that are eligible for free or reduced-price lunches based on income levels that correlate with the Department of Health and Human Services income-eligibility guidelines.
- U.S. Department of Housing and Urban Development (HUD) – Healthy Communities Environmental Mapping was searched to identify the location and types of HUD activity, including the location of subsidized housing.
- MD 3 Focus Group – Throughout the project development process, group members' personal knowledge of the study area was requested to provide the study team insight on potential environmental justice populations. SHA regularly met with the focus group consisting of community members and stakeholders.
- Anne Arundel County and Prince George's County Offices of Planning and Zoning – Planning staff was interviewed regarding possible location and composition of environmental justice populations.
- Wilson Memorial Church Food Bank – The food bank's delivery schedule was used as a basis to identify locations of low-income persons. The food bank coordinator was interviewed regarding the possible location and composition of environmental justice populations.
- Field reconnaissance to evaluate whether the housing stock was indicative of a low-income population living in close geographic proximity.

In addition, SHA held multiple formal and informal meetings with local organizations, churches, community associations, and community members throughout the duration of the project.

Findings

Based on its research, SHA determined that no environmental justice populations, as defined by the DOT Order on Environmental Justice, exist in the project corridor or study area.

These conclusions were developed based on the following research:

U.S. Census Bureau – According to Census 2000, no block group within the project corridor or study area contains a minority population at a percentage that exceeds the minority population for its county as a whole or the U.S. Environmental Protection Agency Interagency Working Group on Environmental Justice criteria of 50 percent minority or low-income (EPA, 1998). For the portion of the study area in Anne Arundel County, the block group with the highest minority population is in Census Tract 7407 – Block Group 1, which is located on the west side of MD 3 between Waugh Chapel Road and MD 424. Approximately 18.2 percent of this block group is composed of minorities. These minorities are dispersed throughout the block group. In the Prince George’s County portion of the study area, in Census Tract 8005.04 - Block Group 2 has 17.5 percent minority population. This block group represents a small residential section of the City of Bowie.

The block groups within the study area did not exhibit greater than 10 percent of the population at or below poverty level. The block group with the highest population at or below poverty level is Census Tract 7022.02 - Block Group 1, in which 3.5 percent of its population is living in poverty. The block group is located in Anne Arundel County, south of MD 450, and the study area includes only a portion of this block group. Only 3.1 percent of the population in Census Tract 7023 – Block Group 1 has an income below the poverty level. The portion of the study area within this census tract located along MD 3, south of MD 450, consists of predominately commercial properties.

No environmental justice communities could be identified within the project corridor or study area based solely upon Census research data.

National Center for Education Statistics – School boundaries are based on neighborhoods. Therefore, school demographic data provides insight on the geographic proximity of low-income and minority students. The Crofton elementary school statistics are consistent with the census data for the area, and indicate that minority populations comprise approximately 10 percent of the student body. No more than seven percent of the students in any of the Crofton elementary schools receive free or reduced-price school lunches. Similarly, minority enrollment at Millersville Elementary School parallels the minority population in the area, and fewer than six percent of the students are eligible for free or reduced-price lunches.

Two Bowie area elementary schools are located in the study area in Prince George’s County, and each school has a significantly higher percentage of minorities than the surrounding area as shown through census data. According to the 2000 Census data, the population in Bowie is composed of about 13 percent minorities, while the elementary schools that serve this area, Kenilworth Elementary and Yorktown Elementary, include minority populations of 35.5 percent and 53.5 percent, which are significantly higher than the 13 percent minority found in the Bowie

general population statistics. This is likely due to the fact that the school boundaries encompass areas outside of the study area and also that some non-minority students attend private schools outside of the study area. Several large private schools, including St. Pius X School, Holy Trinity Episcopal Day School, and Grace Christian School, are located in the greater Bowie area and have student bodies ranging from 69 percent to 95 percent non-minority. Approximately 10 percent of the student body at Kenilworth Elementary School and approximately 17 percent of the student body at Yorktown Elementary School receive free or reduced price lunches as shown **Table III-3**, below.

Table III-3
Eligibility for Free and Reduced Price Lunches

School	Free Lunch (percent)	Reduced Lunch (percent)	Minority (percent)
Crofton Elementary	2.5	0.9	12.0
Crofton Meadows Elementary	4.4	2.3	11.9
Crofton Middle	2.7	1.4	10.8
Crofton Woods Elementary	2.3	0.7	7.1
Millersville Elementary	4.2	1.7	10.5
Four Seasons Elementary	4.0	2.8	19.5
Kenilworth Elementary	6.3	3.6	35.3
Yorktown Elementary	10.2	6.5	53.5

Source: National Center for Education Statistics, CCD public school data 2001-2002

Public school demographic information did not demonstrate the potential for environmental justice populations in the project area. Based on field reconnaissance and discussions with county planning staff, no minority or low-income populations were identified in the study area and any minority or low-income residents are apparently dispersed within the City of Bowie.

U.S. Department of Housing and Urban Development (HUD) – There are no subsidized rental units or other HUD activities that would indicate a concentration of persons whose income fell at or below poverty level within the study area.

MD 3 Focus Group – Early in the project development process, the Focus Group identified the community along Evergreen Drive as a potential location of environmental justice populations. Census data indicated that the residents were predominantly white. Interviews with county planning staff noted that the area had transitioned to new housing. A site visit confirmed that the new homes were in a price range inconsistent with low-income populations.

Anne Arundel County Office of Planning – Anne Arundel County planning staff has completed small area plans for Crofton, Gambrills, and Odenton. The planning staff has noted that several areas of the MD 3 study area were known to include residents with incomes that were lower than residents of the overall study area. In general, these areas included portions of

the mixed residential and commercial areas located in the median along northbound MD 3. However, no low-income populations exist within the median's residential areas. County planners also explained the perception that the Evergreen Road area has a high minority population as a relic of the area's history. In the past, the Crofton Annex building on nearby Carver Road served as the area's segregated school and many minority families lived nearby. Those who identified the Evergreen Road area may not realize that while some minority families still live along Queens Mitchell Court and Lee Street, north of the school building, the properties along Evergreen Road had been sold to developers and no longer have a significant minority population.

Prince George's County Planning Department – The planning staff in Prince George's County indicated that minority and low-income residents were well dispersed throughout the study area neighborhoods and that there are no known clusters or neighborhoods of environmental justice populations in the MD 3 study area.

Wilson Memorial Church Food Bank – The food bank delivers scheduled and emergency meals to nearby Anne Arundel County residents based on income and need. The food bank coordinator at the Wilson Memorial Church in Anne Arundel County identified several locations within the MD 3 study area where residents frequently receive food deliveries such as an area south of Johns Hopkins Road, and behind the Village at Waugh Chapel, as well as to the Millersville area (near or adjacent to MD 3) including some houses located in the median.

These locations are consistent with the information Anne Arundel County planners provided on locations of where populations with lower than area average incomes reside. Participation in the program is not limited to individuals whose incomes are at or below poverty level, the U.S. DOT definition of low-income.

Field Reconnaissance – Field reconnaissance noted that the homes that may be indicative of low-income families in the areas identified by the Anne Arundel County planners and food bank coordinator were randomly distributed among the mixed-use areas in and near the MD 3 median. Based on the spatial distribution of the housing stock, it was determined that the low-income residents of the Gambrills area did not live within geographic proximity to each other. In the Hopkins Place and behind the Village of Waugh Chapel areas, housing stock includes several mobile homes as well as many homes that appear to have been constructed prior to the suburbanized areas of Crofton and Bowie. These homes are relatively modest by comparison and may provide affordable housing for the area.

Summary

Census data and National Center for Educational Statistics information did not conclusively reveal any low-income or minority populations in the study area. There are no federally subsidized programs that serve persons with incomes at or below poverty level within or very near the MD 3 study area.

County planners and a food bank coordinator noted that people with incomes lower than the study area average income live in several distinct portions of the project corridor or study area,

although none included housing or services that were linked to the poverty level status. In the median and nearby areas of MD 3 near Millersville, housing stock was mixed among commercial properties, indicating a lack of geographic proximity. These findings and observations are the basis for the conclusion that there are no environmental justice populations, as defined by the U.S. DOT, present in the MD 3 study area.

3. Public Involvement

SHA has conducted various outreach activities to obtain feedback from residents of the study area. Activities included the formulation of a focus group, separate informal meetings with community groups and business associations, the distribution of a survey to study area property owners and residents, informational updates on SHA's website (www.marylandroads.com/WebProjectLifeCycle/countyProjects.asp), the MD 3 Alternates Public Workshop, and the Location/Design Public Hearing. In addition, SHA mailed project newsletters periodically to all community members in the study area and those included on the mailing list, and met informally with community members, potentially impacted property owners, and business representatives during project development. Newspaper ads were placed in several local and regional newspapers and a public service announcement was sent to 21 local and regional radio stations prior the Alternates Public Workshop and Location Design Public Hearing. Additional details on the public outreach are available in the **Chapter V - Comments and Coordination** section of this document.

4. Neighborhoods and Communities

Each smaller community area in the study area was characterized so as to understand its history and unique qualities. Demographic data at this smaller, more focused community area level was also used to identify whether any of the communities had the potential to contain low-income or minority populations. The visual and aesthetic qualities of each area were reviewed to identify the overall features and image of the project area.

Eight smaller community areas that comprise the overall study area were identified:

- Gambrills
- Millersville
- North Crofton
- Crofton Triangle
- West Crofton
- Priest Bridge
- Eastern Bowie
- Sherwood Manor

Each of these communities has its own distinct heritage and characteristics.

a. Gambrills

The Gambrills area is an unincorporated town in Anne Arundel County, consisting of low-density residential subdivisions, the Horizon Organic Dairy Farm, commercial development along MD 175 and MD 3, and a large undeveloped wooded area in the vicinity of Jabez Branch. Gambrills is located in the southwest quadrant of the MD 32/I-97 interchange with MD 3 in the northwestern section of the study area.

The portion of the Gambrills area included in the study area is bounded by MD 32 to the north, Gambrills and Dairy Farm roads to the west, Waugh Chapel Road to the south, and MD 3 to the east. It also includes the portion of the median between St. Stephens Road and MD 175. This area was delineated on the basis that its primary access is dependent on MD 175 and Waugh Chapel Road, major arterials that intersect MD 3. According to community members, the business owners and homeowners in this northernmost section of MD 3 consider themselves part of the Gambrills community. The portion of the median in this area includes small houses, a variety of fast food restaurants, and small businesses. The houses are typically on small lots with driveways that connect to both northbound and southbound MD 3.

Once entirely agricultural, Gambrills began to experience gradual residential development in the 1920s as farm properties were subdivided. Several large farms were subdivided during the 1980s, and nearly 900 new homes were constructed in the area. Today, Gambrills retains a rural residential character with diverse housing types, some of which are on large lots with pasture or cropland. The 875-acre Horizon Organic Dairy Farm remains in Gambrills as cropland and pasture. Commercial development along MD 175 consists mostly of small neighborhood businesses with additional commercial development along MD 3. As a result of past improvements to MD 3, residential and commercial development in the median exists at various locations within the overall study area.

b. Millersville Area

Millersville is an unincorporated area located in Anne Arundel County, consisting primarily of low-density residential development with a small commercial strip along northbound MD 3. Millersville is located in the southeast quadrant of the MD 32/I-97 interchange with MD 3 in the northeast section of the study area.

The portion of Millersville included in the study area is bounded by MD 3 on the west and I-97 on the north, until it passes over MD 175. Millersville, Waterbury, Severn Chapel, and Saint Stephens Church Roads form the eastern and southern boundaries of the Millersville area. These boundaries reflect the physical barriers to automobile and pedestrian movements presented by MD 3 and I-97. The eastern and southern boundaries were developed to include areas dependent on Millersville, Severn Chapel, Saint Stephens Church, and Church View Roads, and Cecil Avenue, which are major roads that provide links between the smaller neighborhoods within Millersville and to MD 3.

Millersville first appeared on maps as a village in the 1940s, when it was named after the family who farmed the land at the time. The oldest homes in the area are clustered along St. Stephens

Church Road, Severn Chapel Road, Waterbury Road, MD 175, and Cecil Avenue. These homes often adjoin properties currently under cultivation or used as pasture. Beginning in the 1970s, some of the larger properties were subdivided. Newer residential development includes:

- Mallet Hills, Tanager Forest, and Baldwin Hills, subdivisions consisting of single-family homes; and
- Saint Stephens Estates, consisting of large-lot single-family homes.

Today, with both low-density residential development and small farms, Millersville retains a rural character. Commercial uses in the area are located primarily along MD 3.

c. North Crofton

Greater Crofton is an unincorporated area that extends well beyond the study area limits, including areas with distinct characteristics. Study area residents refer to different areas within Crofton; North Crofton, Crofton Triangle, and West Crofton. North Crofton is a residential area of Anne Arundel County that began to develop in the 1970s as an extension of Crofton. This planned community was built around a centrally located golf course. The oldest area of North Crofton is located just north of MD 424. North Crofton contains many housing types including townhouses, detached single-family houses, apartment complexes, and condominiums on lots of varying sizes, as well as commercial and service land uses. Construction in North Crofton is ongoing north and east of Johns Hopkins Road. The newer development area is consistent with the older areas of North Crofton and includes a variety of single and multi-family structures.

The portion of the North Crofton area included in the study area is bounded on the south by MD 424, on the east by Underwood Road, and on the west by MD 3. The northern boundary is located at the northern extent of residential development on Riedel Road. Access into the area is from MD 424, Riedel Road, and Johns Hopkins Road, all of which intersect MD 3. Some single-family homes are present on streets that are accessible only from MD 3. Commercial strip development is located on northbound MD 3, north of the MD 424/MD 3 intersection and in the median. Scenic and historic roads in North Crofton include Johns Hopkins Road and Underwood Road, lined with low-density residential development.

d. Crofton Triangle

“Crofton Triangle” is the local name for that portion of Crofton bounded by MD 450 to the south, MD 424 to the east, and MD 3 to the west. Access into the Crofton Triangle is from a number of connector roads off of MD 3, MD 424, and MD 450 that join these three highways to Crofton Parkway, a central loop road that connects all of the Triangle’s residential, commercial, and recreational areas. Crofton Triangle includes portions of the MD 3 median area adjacent to Crofton that contains businesses. All of the Crofton Triangle is included within the study area.

The Crofton Triangle is the site of the original Crofton community. Although the Crofton Triangle area has had arterial access on all three sides since the 1920s, it remained rural until the 1960s when the Crawford Corporation purchased over 1,200 acres and began to construct the Crofton subdivision.

A golf course is the focal point of the Crofton Triangle community. The residential lots and roads were designed to allow easy access to the Crofton Country Club, as well as access to MD 3 and MD 450. The Crofton Country Club features an 18-hole golf course and other facilities. There are two distinct residential subdivisions in the Crofton Triangle; Crofton Towne and Crofton Woods. Crofton Towne consists of clusters of townhouses between Crofton Parkway and MD 3. Crofton Woods consists of medium-sized single-family homes. A newer infill development of townhouses and condominiums, called the Willows of Crofton, exists along MD 450. Commercial development is generally located along southbound MD 3. A retail area is located in the middle of the residential area.

As a result of the dualization of MD 3, commercial development in the median exists at various locations. The median includes a variety of fast food restaurants and small businesses.

e. West Crofton Area

Historically, the West Crofton area was used extensively for sand and gravel operations. While these operations continue today, land use in the area has shifted to industrial and commercial uses as the mineral resources are being depleted. The West Crofton Area of Anne Arundel County consists of several commercial malls, an industrial park, several residential communities, two parks, and large undeveloped areas. Specific features of West Crofton include:

- The Route Three Centre – a strip that includes retail, professional-office, and restaurants;
- The Village at Waugh Chapel – a recently constructed 71-acre mixed-use development with commercial retail, commercial office, and residential elements. The Village includes 425,000 square feet of retail space, a senior and assisted living center, landscaped plazas, water features, walking paths, and plans for a movie theater;
- The Crofton Commerce Centre – an industrial park that consists mainly of sand and gravel businesses;
- Evergreen Road – a residential area that can be accessed only from MD 3. According to the Community Planner with Anne Arundel County, a developer is planning to redevelop the area and purchase lots. The field survey indicates this may already be taking place; and
- Patuxent River Park – a park that offers active and passive recreational activities. The County plans to expand both the park and the parking lot, which is adjacent to MD 3.

The portion of the West Crofton area included in the study area is bounded by Waugh Chapel Road on the north, MD 3 on the east, the Patuxent River on the south, and the rear of commercial malls and industrial areas on the southwest. Access into the area is from cross streets off of MD 3, including Cronson Boulevard, Capitol Raceway Road, Evergreen Road, Conway Road, and Waugh Chapel Road. This boundary was developed on the basis that the primary access road to each of the West Crofton areas included is directly off MD 3.

f. Priest Bridge Area

The Priest Bridge area of Anne Arundel County consists of commercial, industrial, and residential areas. Its name refers to a bridge over the Patuxent River that was constructed by the Jesuit Priests that once owned the property.

While the Jesuits continue to own several parcels in the project area, the Priest Bridge area now includes a variety of land use elements. The Priest Bridge Business Park consists of professional offices, small retail stores, and restaurants. A few homes are located next to MD 3 but residents must use Patuxent River Road to gain access to MD 3. Industrial development exists along Priest Bridge Road and Baldwin Avenue. The oldest houses in the area are along Patuxent River Road in wooded settings. Halls Grove, Patuxent Preserve, and Arrowhead Farms Estates are modern residential infill developments composed of large single-family houses that vary in style and occupy large lots.

The portion of the Priest Bridge area included in the study area is bounded on the north by MD 450 and on the west by MD 3 and the Patuxent River. The eastern boundary is a line that begins at the 1400 block of MD 450 and travels south to encompass all of Halls Grove and the Patuxent Preserve. This boundary delineates an area where most of the residents and workers depend on MD 3 for access between their homes and jobs. Access into the area is from MD 450 at MD 3. The residential areas can only be reached from Patuxent River Road off of MD 450.

g. Eastern Bowie Area

Bowie, located in Prince George's County, is the fourth largest incorporated city in Maryland. It is located west of MD 3, and north of US 50 in the southeastern portion of the study area. Access into the area is available from MD 197, MD 450, and several roads off of MD 3, including the Belair Drive interchange.

The area of Bowie included in the study area (Eastern Bowie) is part of the Belair section of the city and is bounded to the north by Yorktown Drive to the Prince George's/Anne Arundel County line, to the east by MD 3, and to the south by US 50. The western boundary follows Kenhill Drive, Stonybrook Drive, MD 450, and Race Track Road. This boundary was identified using the census block group configuration for the Bowie area adjacent to MD 3, and because the residents of this area of Bowie are more likely to utilize MD 3 than other Bowie residents. The Eastern Bowie area is primarily a residential area, and includes residences within the MD 3 median.

Development in the Eastern Bowie area began in 1957 when the Levitt Company bought 2,000 acres of the Belair Estate including the historic Belair mansion. The Bowie City Council annexed the land, and the firm constructed almost 9,000 moderately priced, mid-sized houses during the 1960s and 1970s. With the exception of a few smaller residential and the commercial areas along MD 450, most of the Eastern Bowie area consists of this residential development.

The commercial development along MD 175 serves as a community focal point that links the residents north and south of MD 450. It consists of professional buildings, restaurants, local

stores, and the Bowie Market Place. The area south of MD 450 includes the Kenilworth residential community, consisting of medium-sized single-family homes. North of MD 450, the Idlewood residential community follows a pattern of development consistent with the Kenilworth community. Residential areas exist along Forest Drive and Sylvan Drive that are accessible only from MD 3. The houses in these communities are new infill developments, consisting of large single-family houses nestled in the extensive wooded areas near White Marsh Park. Little residential or commercial development exists along MD 3 in the Eastern Bowie area.

Past highway projects allowed some residences in the median of MD 3 to remain. However, many of these residences have been converted to commercial use, including a gas station, convenience store, a small apartment building, and a small hotel. Residents and business owners in the median area near Bowie consider themselves part of the Bowie community.

h. Sherwood Manor Area

Sherwood Manor is the name of a residential subdivision in Prince George's County located on the east side of MD 3 north of US 50/301 in the southeast portion of the study area. The Sherwood Manor area defined for the study area is bounded by the Patuxent River on the north and east, MD 3 on the west and US 50/301 on the south. This area was delineated on the basis that it is accessible only from MD 3. The Sherwood Manor subdivision and its surrounding area was identified as distinct from other areas because it has no connection with other MD 3 community areas. The only access into the area is from MD 3 at the Melford Boulevard interchange, which directs traffic to the University of Maryland Science and Technology Center (UMSTC) and the Sherwood Manor community.

The Sherwood Manor area includes both commercial development at UMSTC and the low-density Sherwood Manor residential development. UMSTC includes several business facilities such as a hotel, conference center, and retail services, as well as office space. The Sherwood Manor residential area is located next to the Patuxent River and its tributaries, which provide a sense of open space. Residences within Sherwood Manor include medium and large farm tracts, rural home sites, and newer single-family homes on large, open lots. Forests surround Sherwood Manor.

i. Neighborhood Housing Characteristics

The 2000 U.S. Census provides insight into the eight community areas in the study area. More current block group level data detail is not available. In cases where these boundaries are not the same as the census boundaries, general approximations can be made in each neighborhood except for West Crofton. The residential area in West Crofton is disproportionately small compared to the census block group associated with the area. The general housing characteristics identified are non-family households, owner-occupied households, and average housing value. A non-family household is one or more person living in the same household who are not related by birth, marriage, or adoption.

Gambrills

- Approximately 21.9 percent of households are non-family households.
- Approximately 85.9 percent of homes are owner-occupied, which exceeds the percentage of owner-occupied homes of 76 percent for Anne Arundel County and 80.6 percent for the study area.
- The average housing value is approximately \$240,000, which exceeds the housing value of \$169,534 for Anne Arundel County.

Millersville

- Approximately 28.0 percent of households are non-family households.
- Approximately 85.0 percent of homes are owner-occupied, which exceeds the percentage of owner-occupied homes of 76 percent for Anne Arundel County and 80.6 percent for the study area.
- The average housing value is approximately \$240,100, which exceeds the housing value of \$169,534 for Anne Arundel County.

North Crofton

- Approximately 3.0 percent of households are non-family households.
- Approximately 79.0 percent of homes are owner-occupied, which exceeds the percentage of owner-occupied homes of 76.0 percent for Anne Arundel County, but does not exceed the percentage of 80.6 percent for the study area.
- The average housing value is \$156,300, which is less than the average housing value of \$169,534 for Anne Arundel County.

Crofton

- Approximately 28.0 percent of households are non-family households.
- Approximately 74.0 percent of homes are owner-occupied, which does not exceed the percentage of 76.0 percent for Anne Arundel County or 80.6 percent for the study area.
- The average housing value is approximately \$185,860, which exceeds the average housing value of \$169,534 for Anne Arundel County.

Priest Bridge

- Approximately 11.0 percent of households are non-family households.
- Approximately 89.0 percent of homes are owner-occupied; which exceeds the percentage of owner-occupied homes of 76.0 percent for Anne Arundel County and 80.6 percent for the study area.
- The average housing value is \$375,000, which exceeds the housing value of \$169,534 for Anne Arundel County.

Eastern Bowie

- Approximately 21.73 percent of households are non-family households.
- Approximately 96.07 percent of homes are owner-occupied which exceeds the percentage of 59.0 percent for Prince George's County and 80.6 percent for the study area.

- The average housing value is \$156,600, which exceeds the housing value of \$145,600 for Prince George's County.

Sherwood Manor

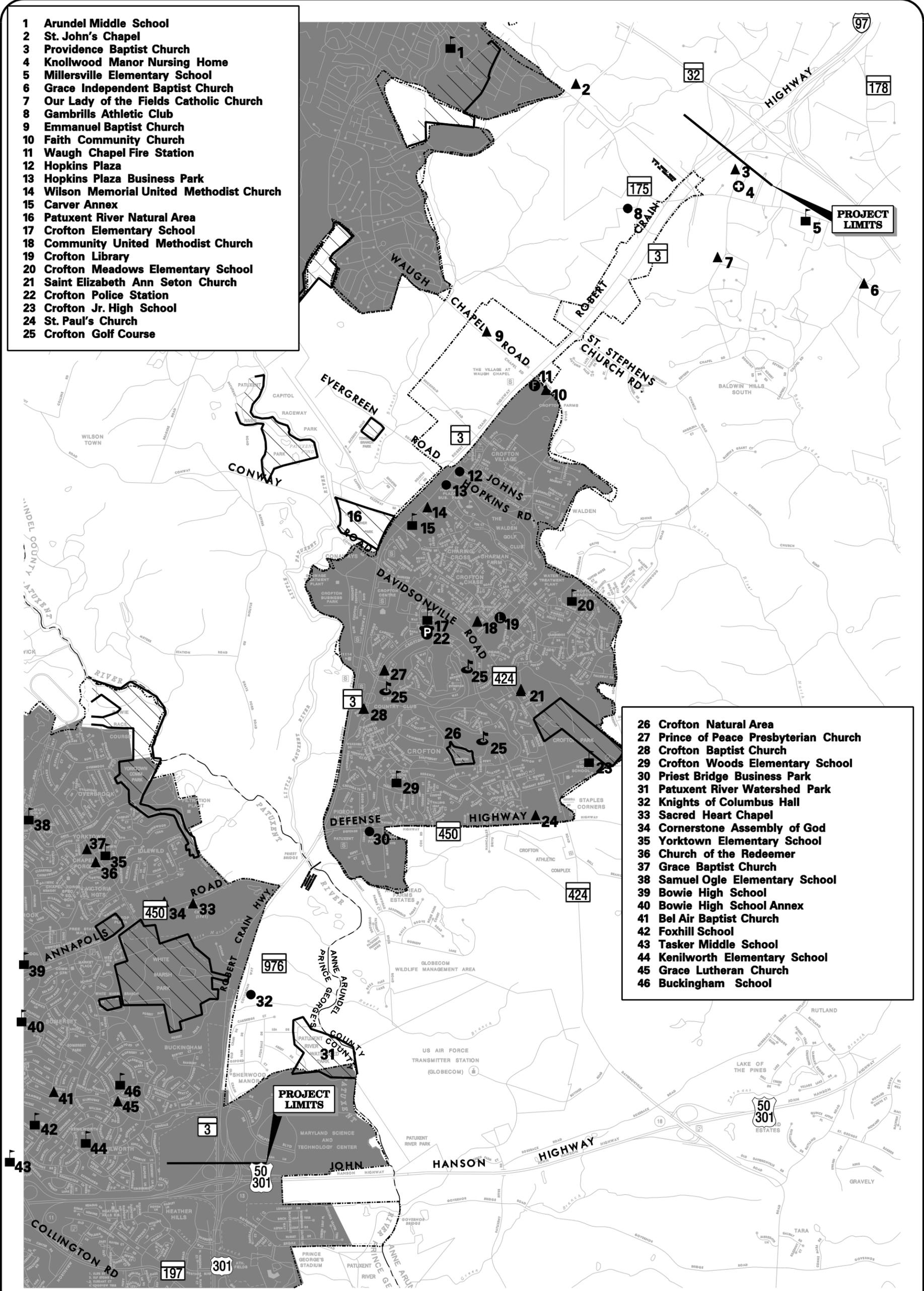
- Approximately 22.4 percent of households are non-family.
- Approximately 90.1 percent of the homes are owner-occupied, which exceeds the percentage of owner-occupied homes of 59 percent for Prince George's County and 80.6 percent for the study area.
- Average housing value is approximately \$179,500, which exceeds the housing value of \$145,600 for Prince George's County.

5. Community Facilities and Services

An inventory of community facilities within the study area was conducted and facilities dependent on MD 3 for client, customer, or member access were identified (see **Table III-4 and Figure III-3**). The study area contains a number of educational, religious, parkland, and recreational facilities that are important to the residents, as well as places that provide essential services, such as health care centers, libraries, and police stations. These facilities were identified if they were accessible directly from MD 3 or if alternate road access was available.

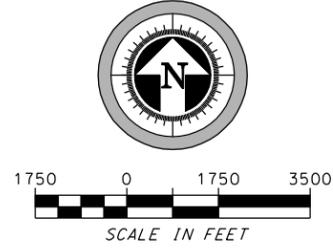
- 1 Arundel Middle School
- 2 St. John's Chapel
- 3 Providence Baptist Church
- 4 Knollwood Manor Nursing Home
- 5 Millersville Elementary School
- 6 Grace Independent Baptist Church
- 7 Our Lady of the Fields Catholic Church
- 8 Gambrills Athletic Club
- 9 Emmanuel Baptist Church
- 10 Faith Community Church
- 11 Waugh Chapel Fire Station
- 12 Hopkins Plaza
- 13 Hopkins Plaza Business Park
- 14 Wilson Memorial United Methodist Church
- 15 Carver Annex
- 16 Patuxent River Natural Area
- 17 Crofton Elementary School
- 18 Community United Methodist Church
- 19 Crofton Library
- 20 Crofton Meadows Elementary School
- 21 Saint Elizabeth Ann Seton Church
- 22 Crofton Police Station
- 23 Crofton Jr. High School
- 24 St. Paul's Church
- 25 Crofton Golf Course

- 26 Crofton Natural Area
- 27 Prince of Peace Presbyterian Church
- 28 Crofton Baptist Church
- 29 Crofton Woods Elementary School
- 30 Priest Bridge Business Park
- 31 Patuxent River Watershed Park
- 32 Knights of Columbus Hall
- 33 Sacred Heart Chapel
- 34 Cornerstone Assembly of God
- 35 Yorktown Elementary School
- 36 Church of the Redeemer
- 37 Grace Baptist Church
- 38 Samuel Ogle Elementary School
- 39 Bowie High School
- 40 Bowie High School Annex
- 41 Bel Air Baptist Church
- 42 Foxhill School
- 43 Tasker Middle School
- 44 Kenilworth Elementary School
- 45 Grace Lutheran Church
- 46 Buckingham School



LEGEND

	Schools		Priority Funding Area Boundary
	Hospital/Nursing Home		Parks
	Golf Course		Religious Institutions
	Police Station		Fire Station
	Library		Community Facilities



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MD 3 PROJECT PLANNING STUDY
 Final Environmental Impact Statement

COMMUNITY FACILITIES AND SERVICES

SCALE	As Shown	FIGURE	III-3
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**Table III-4
Community Facilities and Services
MD 3 Study Area**

Community Facilities and Services	Area
Educational Facilities	
Millersville Elementary School	Millersville
Crofton Meadows Elementary School	North Crofton
Crofton Middle School	North Crofton
Crofton Woods Elementary School	Crofton Triangle
Crofton Elementary School	Crofton Triangle
Goddard School	North Crofton
Kenilworth Elementary School	Eastern Bowie
Kindercare Learning Centers, Inc.	North Crofton
Yorktown Elementary School	Eastern Bowie
Health Care Facilities	
Knollwood Manor Nursing Home	Millersville
Nighttime Pediatrics	North Crofton
Religious Institutions or Facilities	
Providence Baptist Church	Millersville
Our Lady of the Fields Catholic Church	Millersville
Grace Independent Baptist Church	Millersville
Severn Run Evangelical Presbyterian Church	Millersville
Severn Crossroads Church	Millersville
Community United Methodist Church	North Crofton
Faith Community Church	North Crofton
St. Stevens Episcopal Church	North Crofton
St. Elizabeth Ann Seton Church	North Crofton
Ministry of the Word	North Crofton
Wilson Memorial United Methodist Church	North Crofton
Prince of Peace Presbyterian Church	Crofton Triangle
St. Paul Lutheran Church of God	Crofton Triangle
Crofton Baptist Church	Crofton Triangle
Emmanuel Baptist Church	West Crofton
Sacred Heart Church and School	Eastern Bowie
Latter Day Saints Church	Eastern Bowie
Belcroft Bible Church	Eastern Bowie
Cornerstone Assembly of God Church	Eastern Bowie
Grace Lutheran Church	Eastern Bowie
Church of the Redeemer	Eastern Bowie
Park Facilities	
Crofton Park	North Crofton
Towsers Branch Park	West Crofton
Patuxent River Park	West Crofton/Eastern Bowie
White Marsh Park	Eastern Bowie

Community Facilities and Services	Area
Recreational Facilities	
Gambrills Athletic Club	Gambrills
Horizons Organic Dairy Farm	Gambrills
Walden Golf Club	North Crofton
Crofton Country Club	Crofton Triangle
Capitol Raceway	West Crofton
Crofton Bowie Roller Rink	West Crofton
Bowie Community Center	Eastern Bowie
Washington, Baltimore & Annapolis (WB&A) Trail	Millersville/Gambrills
Emergency Services	
Waugh Chapel Fire Station	North Crofton
Crofton Police Department	Crofton Triangle
Other	
Crofton Branch Library	North Crofton
Crofton Annex	North Crofton
B.P.O.E. Lodge No. 2309	Crofton Triangle
The Market Place in Bowie	Eastern Bowie
Knights of Columbus Building	Sherwood Manor
University of Maryland Science and Tech Center	Sherwood Manor

Educational Facilities

There are no schools located directly along MD 3 in the study area. However, there is a private pre-school (Kindercare) and a commercial educational center (Goddard School) located adjacent to MD 3. Several public school districts use MD 3 as a boundary. Seven public schools are located within the study area; six are elementary level and one is middle school level. Seven other public schools serve the study area residents, yet are not located within the study area. They are:

- Four Seasons Elementary School
- Odenton Elementary School
- Heather Hills Elementary School
- Arundel Middle School
- Benjamin Tasker Middle School
- Arundel Senior High School
- Bowie Senior High School

Health Care Facilities

No hospitals are located within the study area. Hospitals close to the study area include Baltimore Washington Medical Center in Glen Burnie, Anne Arundel Medical Center in Annapolis, and Bowie Health Center in Bowie. Within the study area, there are two health care facilities, the Knollwood Manor Nursing Home and Nighttime Pediatrics. Many of the professional buildings house small offices for a variety of different medical practitioners.

Religious Institutions or Facilities

A diverse network of religious facilities exists within the study area. As listed in **Table III-4**, there are twenty-one churches that serve unique congregations, three of which are located directly adjacent to MD 3.

Park and Recreational Facilities

Four park and eight recreational facilities are located within the study area. Owned by Anne Arundel County, the portion of the Patuxent River Park located near MD 3, a 58-acre parcel (Parcel 332) is used as passive recreation, with the sole exception of an archery range adjacent to MD 3. The remaining three parks within the study area, Towsers Branch Park, Crofton Park, and White Marsh Park, are used for active recreation and contain ball courts, playgrounds, and other amenities. Towsers Branch Park and Crofton Park are owned by Anne Arundel County, while White Marsh Park is owned by the City of Bowie.

The recreational facilities include the Washington, Baltimore and Annapolis (WB&A) Trail, a hiker/biker trail planned by Anne Arundel County, extending from the Bestgate/Parole area of Annapolis to the area of Odenton/Arundel acres to the north, a distance of approximately 10.3 miles. The privately owned Crofton Bowie Roller Rink is located along southbound MD 3 just north of Capitol Raceway Road, and the Bowie Community Center, located west of White Marsh Park in the City of Bowie, offers a gymnasium, three meeting rooms, a fitness room, a games area, many recreational programs, tournaments, clubs, camps, workshops, after school activities, and special events. Two privately owned golf courses exist in the study area. Regional area attractions include the privately operated Horizons Organic Dairy Farm and the Capitol Raceway, located in Gambrills and West Crofton, respectively. The dairy farm offers guided tours, hayrides, farm animals, interactive exhibits, and shopping. The Capitol Raceway mostly hosts drag races.

Emergency Services

Fire Stations serving the study area include the Company 5: Waugh Chapel Fire Station, the Arundel Volunteer Fire Company in Gambrills, the Odenton Volunteer Fire Company in Odenton, and the Herald Harbor Volunteer Fire Company in Crownsville. There are three volunteer fire departments in Bowie, including Station 39 Belair, which serves study area residents. Ambulatory units are provided by fire stations in the study area.

Police stations within the study area and nearby communities include the Crofton Police Department, a community police department, which serves Crofton and its surrounding areas in Anne Arundel County, the Anne Arundel County Police Headquarters in Millersville and District II of the Prince George's County Police Department.

Other Community Facilities and Services

Other community facilities include the Crofton Library, Bowie's Market Place, two Benevolent & Protective Order of Elks Lodge buildings, and the University of Maryland Science and Technology Center. Bowie's Market Place is a shopping plaza that surrounds the community center. Its commercial properties and professional buildings serve the local residents. The University of Maryland Science and Technology Center is a high-technology business park and hotel that is not currently in use. There are no airports or transit stations within the study area. The Washington Metropolitan Area Transit Authority operates one local bus service, Bus Route 29, in the project corridor. The only stop on Bus Route 29 between Bowie Town Center and the Crofton Country Club Park and Ride Lot is at the Crofton Country Club Park and Ride Lot. There are no other transit services operating with the project corridor.

6. Economic Environment

Features of the regional economy and local economy were identified as the baseline to understand the potential economic effects of the proposed project.

a. Countywide Employment Characteristics

Anne Arundel County is the home of the National Security Agency, which supports many defense contractors, and the Baltimore-Washington International Thurgood Marshall Airport, which is constantly growing. Major private sector employers include ARINC, Booz Allen & Hamilton, Computer Sciences Corporation, General Dynamics, Johns Hopkins Healthcare LLC, Northrop Grumman, and US Foodservice.

In Anne Arundel County, the average commuting time is 25-29 minutes and 41.2 percent of the population travel over 30 minutes to work. Of the county's workforce, 43.7 percent work outside of the county and 9.5 percent work outside of the state. To reach their places of employment, 80.3 percent of the Anne Arundel County residents drive to work alone, and another 10.7 percent carpool. As shown in **Table III-5**, the majority of the population is employed in the educational, health and social services industries, followed by the professional, scientific, management, administrative, and waste management fields.

Major employers in Prince George's County include the Beltsville Agricultural Research Center, Computer Sciences Corporation, NASA-Goddard Space Flight Center, the University of Maryland, and Verizon's Communications. The average commuting time in Prince George's County is 30-34 minutes and 59 percent of the population travel over 30 minutes to work. Of the county's workforce, 60.8 percent work outside of the county and 43.8 percent work outside of the state. For those who work outside of the home, 66.8 percent of Prince George's County residents drive to work alone, and 16.2 percent carpool. As shown in **Table III-5**, the majority of the working population is employed in the educational, health, and social services sectors, followed by public administration. This county has nearly a dozen high-technology oriented federal labs and agencies and about 900 high-technology companies who employ approximately 10 percent of the population.

The latest available U.S. Census data shows the unemployment rate in Anne Arundel County to be 3.6 percent and the unemployment rate in Prince George’s County was 4.1 percent. Current information from the Maryland Department of Labor, Licensing, and Regulations indicates that Anne Arundel County’s unemployment rate in 2007 was 3.1 percent and the unemployment rate in Prince George’s County was 3.9 percent.

**Table III-5
2007 Countywide Employment Statistics (Percentages)**

Employment Type	Anne Arundel County*	Prince George's County*	Study Area**
Educational, health and social services	10.0	8.8	17.0
Federal Government	3.5	8.0	15.6
State Government	3.8	5.4	
Local Government	8.3	13.1	
Professional, scientific, management, administrative and waste management	14.9	13.9	14.7
Finance, insurance, real estate, rental and leasing	4.9	4.3	7.2
Leisure and hospitality	11.6	8.0	6.2
Construction	7.6	10.5	5.7
Manufacturing	5.7	3.2	5.6
Other services	3.8	3.2	5.6
Information	2.1	1.7	4.9
Trade, Transportation and utilities	23.6	19.7	17.2
Natural resources, and mining	0.1	0.1	0.2
Unclassified	0.1	0.0	0.0
Total	100	100	100

**Source:* Maryland Department of Labor, Licensing and Regulation, Office of Workforce Information and Performance 2008-2009

***Source:* Census 2000

b. Local Employment Characteristics

Study area residents hold employment that is generally consistent with the employment held by county residents. Approximately 79 percent of the labor force residing in the study area works within the State of Maryland, of which 50.5 percent work within the same county of residence; the other half travels to other counties. Only 11 percent work within the same place or incorporated city in which they reside. The study area’s employment characteristics are generally consistent with the both of the counties’ statistics. Consistent with the counties in which they are located, the top three employment types in the study area are education, health, and social services; public administration; and professional, scientific, management,

administrative and waste management (see **Table III-5**). Together, these three employment types make up 47.3 percent of the employment base within the study area.

For study area residents, the average commuting time is 30-34 minutes, and approximately 56 percent of the population commutes over 30 minutes; 79 percent travel over 20 minutes. Over 80 percent of the employees drive alone to their places of employment; another 9 percent ride in carpools.

At the time of the 2000 Census, the unemployment rate in the study area was 1.4 percent, which was lower than the rate of 3.6 percent for Anne Arundel County and 4.1 percent in Prince George's County. The unemployment data at the Block Group level was examined and it was determined that none of the block groups showed an unemployment rate that exceeded the County rate.

c. Tax Base

Each jurisdiction in the project area assesses taxes on property and certain types of transactions, as follows:

Prince George's County:

- \$0.960 per \$100 of assessed value for real property (e.g., real estate). Owner-occupied homes are assessed at 40 percent of full assessed value,
- 0.5 percent to 10 percent amusement tax, depending on the type of transaction or activity, and
- Hotel-motel room receipts taxed at 5 percent.

City of Bowie:

- \$0.955 per \$100 for real property; owner-occupied homes are assessed at 40 percent of full cash value.

Anne Arundel County:

- \$0.955 per \$100 of assessed value for real property; assessed home value is figured at 40 percent of full assessed value,
- 0.5 percent to 10 percent tax on amusements and admissions, depending on the type of transaction or activity,
- 7 percent on hotels-motels room receipts, and
- \$7 per \$1,000 tax on property transfers.

In addition, the residents of each county pay a piggyback tax on their incomes. These taxes contribute to the funding of a \$1.7 billion Year 2003 budget for Prince George's County, an \$873 million budget for Anne Arundel County in 2003, and a \$33 million 2003 budget for the City of Bowie. In Prince George's County, property taxes and income taxes are the major sources of income for the county. Property taxes account for 36 percent of its total revenue, and income

taxes provide 28 percent of the revenue. Likewise, property taxes account for 39 percent and income taxes supply 29 percent of Anne Arundel County's governmental revenue. The key revenue sources in Bowie are property taxes and intergovernmental revenues providing 33.5 percent and 30.7 percent respectively.

7. Land Use and Master Plans

Existing and future land uses data were reviewed to develop a baseline understanding of where residential, commercial, and industrial land uses exist and are planned within the study area. These data were used to determine whether the proposed MD 3 project is consistent with existing and proposed land use plans.

Existing Land Use

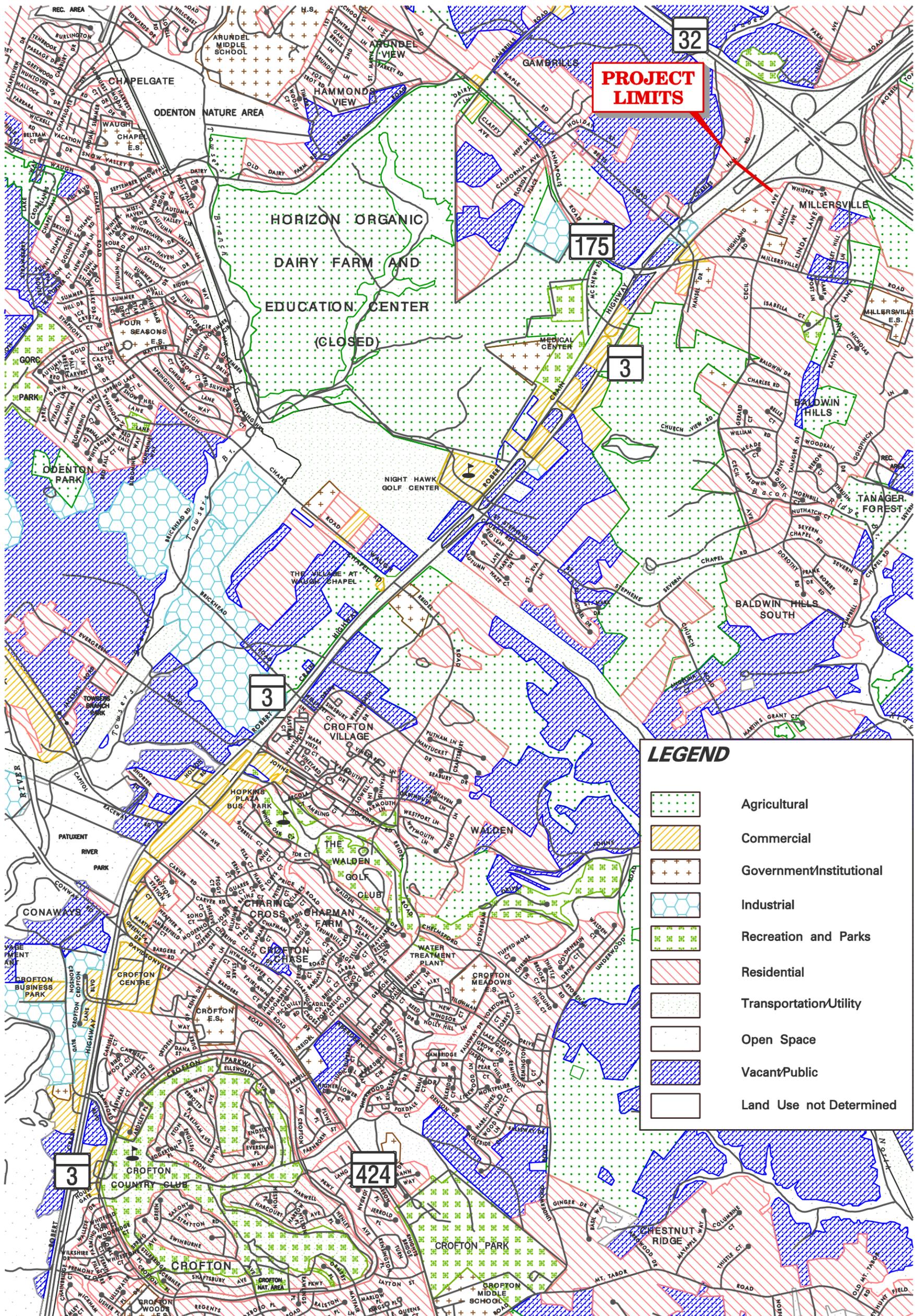
MD 3 is a long-established transportation corridor that has influenced land use patterns by providing access to neighborhoods, communities, and businesses, and by serving as a boundary between community areas. Existing land use in the study area is primarily residential, although some farms exist in the northern portion. The northern portion of the study area contains two active farms. An active agricultural field is located west of MD 3 adjacent to McKnew Road and there is another active farm located east of MD 3 and north of St. Stephens Church Road, just outside the study area. The Maryland Agricultural Land Preservation Program was created by the Maryland General Assembly to "preserve productive agricultural land and woodland to provide for the continued production of food and fiber for all citizens of the State." There are no lands within the study area enrolled in the Maryland Agricultural Preservation Program. Areas within Sherwood Manor also include medium and large farm tracts and rural home sites. Commercial uses are adjacent to MD 3 throughout most of the study area (see **Figures III-4 and III-5**).

Future Land Use

Both Prince George's and Anne Arundel counties have adopted numerous planning documents to guide future development throughout the study area. Future land use projections were determined from the various small area plans encompassing the study area (see **Figures III-6 and III-7**). The master plans were searched for any discussion on future transportation plans, specifically those involving the study area.

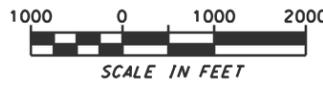
a. Anne Arundel County

Anne Arundel County has an approved and adopted General Development Plan (1997) that calls for concentrated growth in areas that best use existing and planned infrastructure, protect the natural environment, promote economic growth, provide for a diversity of living environments, and strengthen and enhance existing neighborhoods and communities. The plan identifies congestion on MD 3 as a transportation issue and notes ongoing studies of the problem. The plan recommends that Anne Arundel County conduct more detailed, community-oriented long-range planning through the creation of Small Area Comprehensive Plans that consider land use, zoning, transportation, and other services. Anne Arundel County approved and adopted an



LEGEND

	Agricultural
	Commercial
	Government/Institutional
	Industrial
	Recreation and Parks
	Residential
	Transportation/Utility
	Open Space
	Vacant/Public
	Land Use not Determined

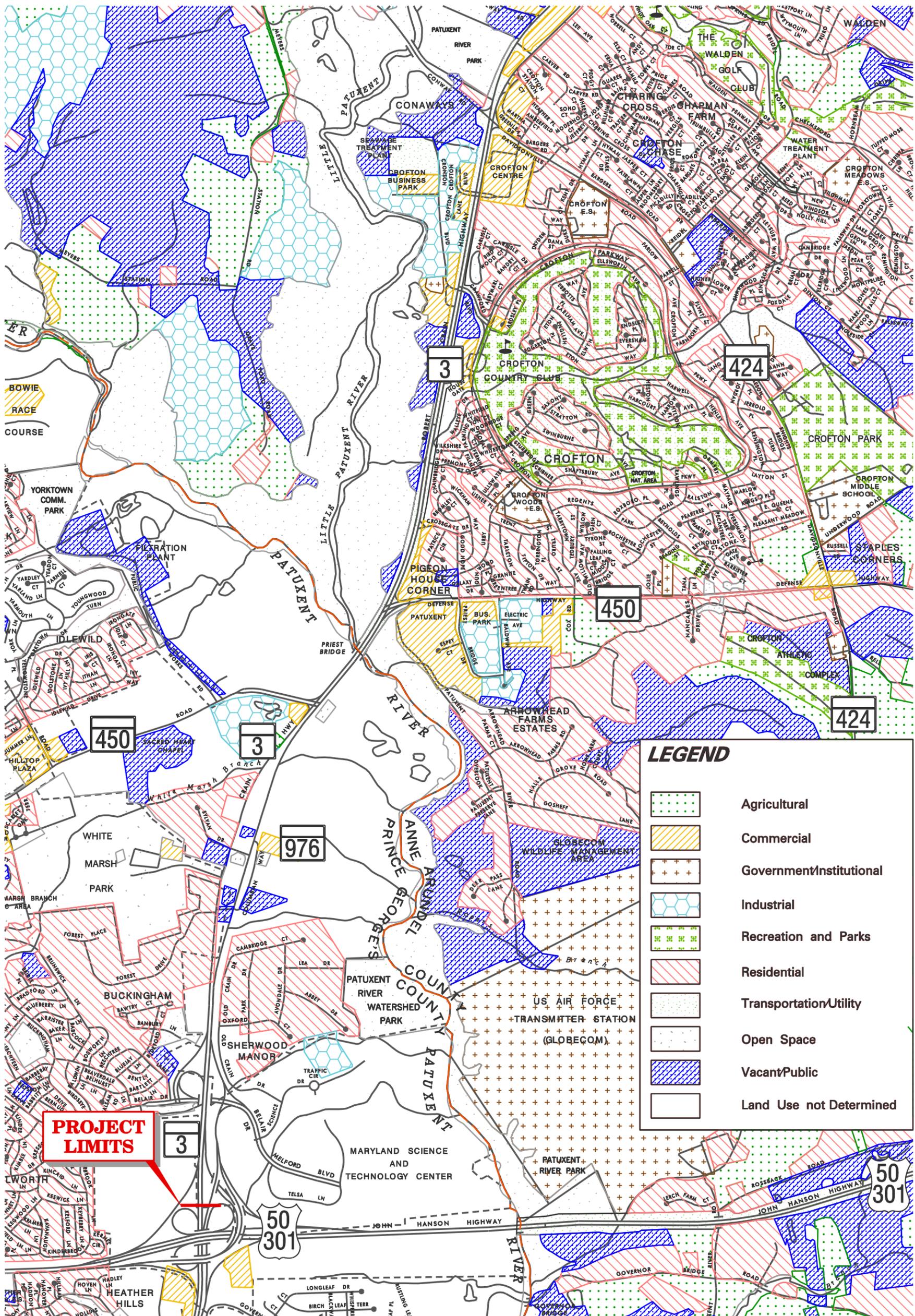


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MD 3 PROJECT PLANNING STUDY
Final Environmental Impact Statement

EXISTING LAND USE

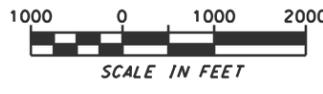
SCALE: As Shown FIGURE: III-4



LEGEND

	Agricultural
	Commercial
	Government/Institutional
	Industrial
	Recreation and Parks
	Residential
	Transportation/Utility
	Open Space
	Vacant/Public
	Land Use not Determined

PROJECT LIMITS

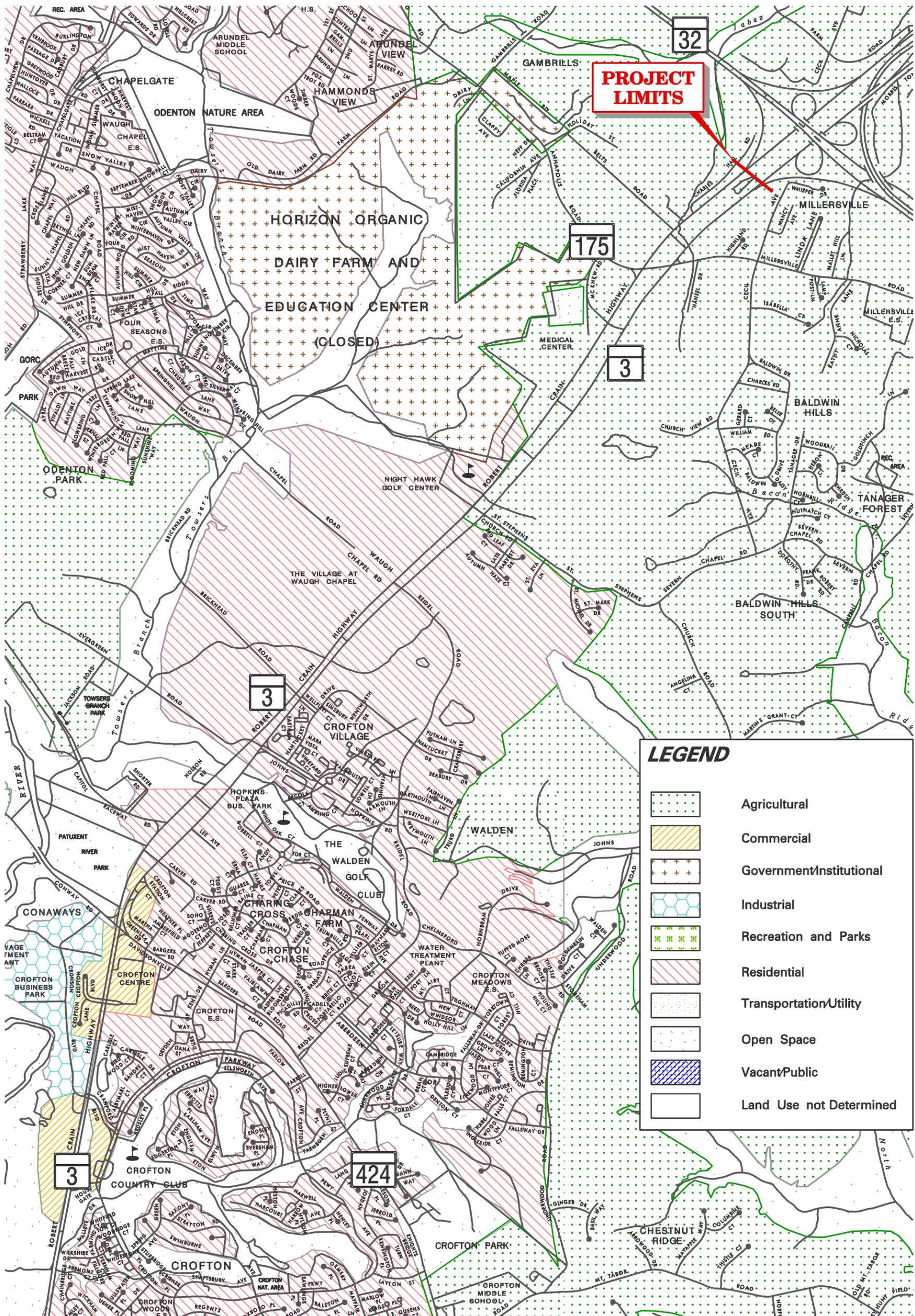


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MD 3 PROJECT PLANNING STUDY
Final Environmental Impact Statement

EXISTING LAND USE

SCALE	As Shown	FIGURE	III-5
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LEGEND

	Agricultural
	Commercial
	Government/Institutional
	Industrial
	Recreation and Parks
	Residential
	Transportation/Utility
	Open Space
	Vacant/Public
	Land Use not Determined

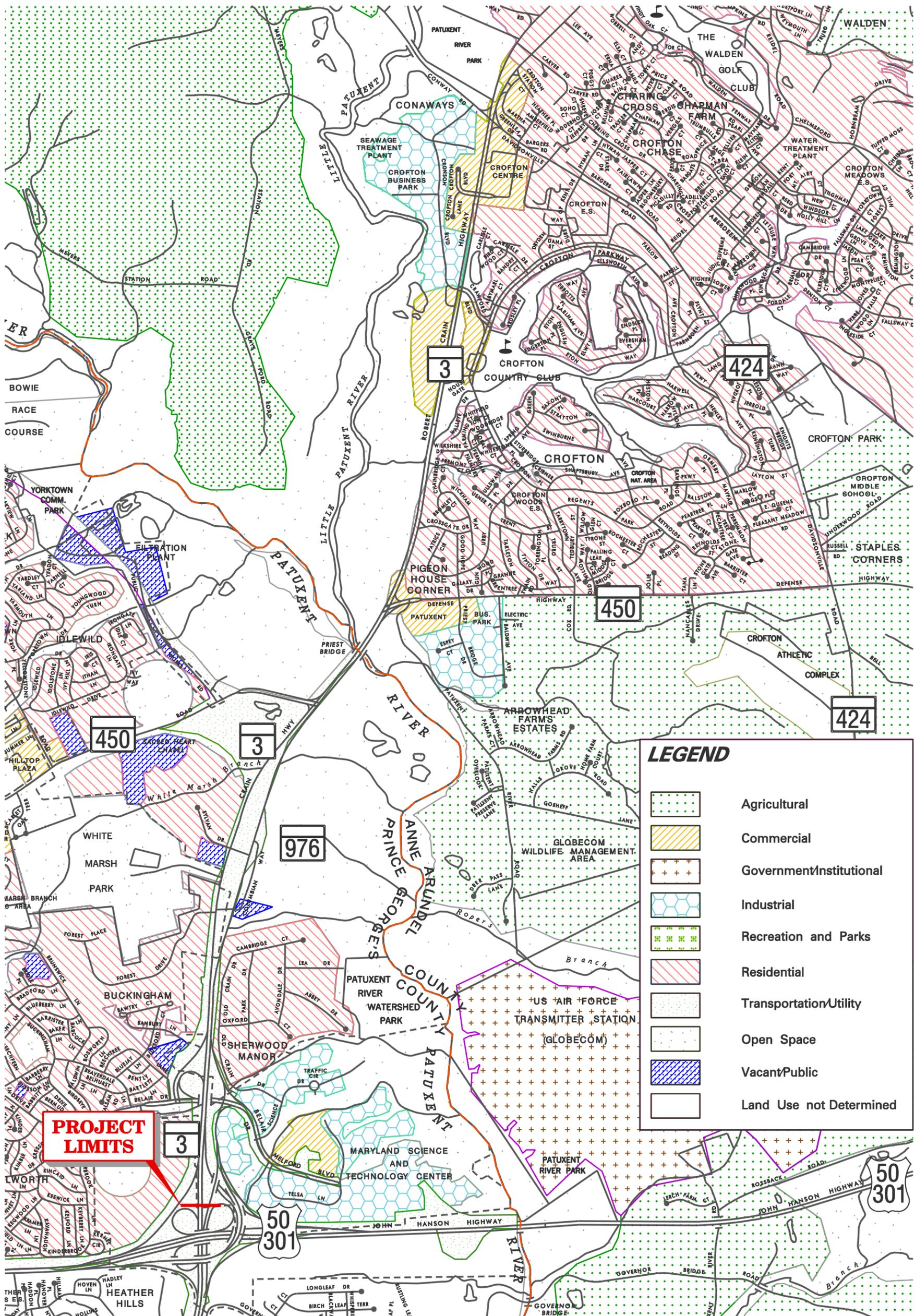


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Final Environmental Impact Statement

FUTURE LAND USE

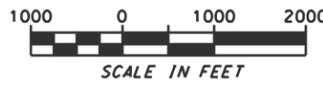
SCALE	As Shown	FIGURE	III-6
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LEGEND

	Agricultural
	Commercial
	Government/Institutional
	Industrial
	Recreation and Parks
	Residential
	Transportation/Utility
	Open Space
	Vacant/Public
	Land Use not Determined

PROJECT LIMITS



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State Highway Administration

MD 3 PROJECT PLANNING STUDY
Final Environmental Impact Statement

FUTURE LAND USE

SCALE	As Shown	FIGURE	III-7
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updated General Development Plan in 2008. MD 3 remains identified as an area of transportation concern due to congestion levels limiting travel during peak periods.

Anne Arundel County describes portions of the study area in its small area plans for the Odenton, Crownsville, and Crofton communities. Anne Arundel County has finalized and adopted all three plans. The following paragraphs summarize information from the county planning documents that is pertinent to the study area and proposed highway improvements.

Odenton Small Area Plan

The Odenton Small Area Plan, which went into effect in November 2003, includes the Gambrills area. The Plan presents a concept for the portion of the Gambrills area included in the study area that would maintain the area's rural-residential and agricultural character, preserve sensitive environmental resources, preserve historic resources, and maintain roadways as scenic resources. Although the Small Area Plan supports more community-oriented commercial development, it also supports improvements to the MD 3 commercial district from MD 175 to Waugh Chapel Road.

The plan also includes two specific objectives regarding congestion along MD 3. One is to promote the best option to alleviate MD 3 traffic that is also the least disruptive to farmland and residential neighborhoods, while providing safety, increasing road capacity, and protecting the Patuxent and Jabez watersheds. The other is to manage the character and image of road improvements and developments along the study area from MD 424 to the MD 32 interchange by coordinating with SHA during the MD 3 Project Planning Study.

Crownsville Small Area Plan

The Millersville area is discussed in the Crownsville Small Area Plan, which was approved in June, 2000 and adopted by the County Council. Generally, the plan calls for Millersville to retain its rural and semi-rural character by protecting its woodlands, farmland, historic sites, locally owned businesses, and roads. It recommends that both residential and commercial development be limited through future zoning and recommends no expansion of public utilities. Proposed land uses consist of low and low-medium density residential areas, farms, open space, and community-oriented small businesses and facilities.

The Crownsville Small Area Plan supports the development of a healthy transportation network, but it specifies that the network should not spur further development in the area, and it should retain the scenic and historic character of other major roads in the area such as Saint Stephen's Church Road, Severn Chapel Road, and Waterbury Road. The Crownsville Small Area Plan specifically recommends that improvements to the MD 3 transportation corridor limit commercial strip development, because it would be inconsistent with the area's rural character.

Crofton Small Area Plan

The portions of the study area discussed in the Crofton Small Area Plan include North Crofton, the Crofton Triangle, Priest Bridge, and a small portion of West Crofton. The Crofton Small

Area Plan, which was approved in January, 2001 and adopted by the City Council, anticipates population growth of approximately 20 percent. The plan notes the greater Crofton area as the appropriate focus of future development, and it precludes development in the environmentally sensitive Priest Bridge area. The plan includes extensive recommendations regarding the design, function, and land use surrounding MD 3, and it notes that MD 3 links their communities, commercial areas, and community facilities.

The plan identifies that most of the growth is expected in North Crofton, which is served by public utilities. Concepts include constructing multi-modal transportation improvements, encouraging employment centers in existing commercial areas, investing in new facilities and infrastructure, and limiting commercial growth to focus on supporting residential needs.

The plan includes two transportation goals for the North Crofton area:

- Preserving scenic and historic roads, such as Johns Hopkins Road and Underwood Road, through strategies such as allowing only limited widening of shoulders and other safety improvements; and
- Creating a pedestrian and bike trail system along existing roadways, which would safely connect the various neighborhoods with schools, playfields, shopping areas, and employment centers.

The small area plan notes construction within the Crofton Triangle area would include enhancing the community shopping area at the intersection of MD 3 and MD 450, establishing a multi-use community center at the intersection of MD 424 and Reidel Road, and improving retail services north of MD 450. The County's transportation goal for this area is to provide safer access for vehicles and pedestrian linkages.

The small area plan seeks to limit development in the Priest Bridge area. One specific transportation goal is to reduce the turning radius of the right-turn movement from northbound MD 3 to MD 450, thereby reducing the speed of turning vehicles and improving safety as vehicles exit onto MD 450 from Patuxent River Road.

b. Prince George's County

The Prince George's County Approved General Plan identifies the Bowie area as a regional center of development activity and growth in the "developing tier" of the County (M-NCPPC, October 2002). The County has also completed the *Bowie-Collington-Mitchellville and Vicinity Approved Master Plan* (Bowie Master Plan; M-NCPPC, 1991), which discusses both the Eastern Bowie and Sherwood Manor areas. The Master Plan encourages expansion of commercial areas along MD 450 to better serve residents.

According to the Bowie Master Plan, the Sherwood Manor area, located to the west of MD 3 in Prince George's County, is an established area with limited growth potential. The Master Plan discourages development of selected median properties to avoid unsafe, uncoordinated and piecemeal development. The county also seeks to eliminate further strip commercial

development that would hinder the planned highway improvements to enhance safety and capacity.

c. Smart Growth Initiatives

The 1997 Maryland General Assembly adopted several specific programs that form the Smart Growth Initiatives. Collectively, these initiatives aim to direct State resources to revitalize or redevelop areas, preserve Maryland's valuable resources and open spaces, and discourage the continuation of sprawling development into rural areas. The Smart Growth legislation allows the State to direct its programs and funding to support locally designated growth areas called Priority Funding Areas (PFAs). PFAs consist of existing communities and other locally designated areas as determined by local jurisdictions in accordance with "smart growth" guidelines. They seek to guide development toward existing towns, neighborhoods, and business areas by directing state infrastructure improvements to those places.

In the study area, both Bowie and Crofton are PFAs (see **Figure III-3**). The MD 3 project is a proposed improvement to an existing road, and is therefore consistent with the principles of Smart Growth. Two segments of the study area fall outside the PFAs, and are subject to evaluation by Anne Arundel County, Prince George's County, the Maryland Department of Planning (MDP), and the Maryland Department of Transportation (MDOT) for compliance with Smart Growth regulations.

On July 23, 2009 the Maryland Department of Planning concurred that the project met the requirements of the COMAR 11.04.13 – Smart Growth and the project is considered as located inside Priority Funding Areas. Therefore, the project is in compliance with the Smart Growth Areas law. A copy of the concurrence letter can be found on page **V-A-98** of the **Chapter V – Comments and Coordination** section of this document. Additional details regarding compliance are detailed in **Chapter IV – Environmental Consequences** portion of this document.

B. CULTURAL RESOURCES

Identification and evaluation of historic architectural and archeological resources were conducted in accordance with federal and state laws that seek to protect significant cultural resources. Federal and state mandates for cultural resources protection include: the U.S. Department of Transportation Act of 1966, as amended in 1968; NEPA (National Environmental Policy Act) of 1969; the National Historic Preservation Act of 1966, as amended (NHPA); 36 CFR Part 800 Protection of Historic Properties (Final Rule December 12, 2000); Executive Order 11593; the MHT (Maryland Historical Trust) Act of 1990 (Article 83B, Sections 5-619 of the Annotated Code of Maryland); and Article 83B, Sections 5-617 and 5-618 of the Annotated Code of Maryland.

Identification and evaluation of cultural resources were performed in accordance with the standards established in Standards and Guidelines for Architectural and Historical Investigations in Maryland (MHT, 2000); Standards and Guidelines for Archeological Investigations in Maryland (Shaffer and Cole, 1994); Collections and Conservation Standards (MHT, 1999); and

Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (National Park Service, 1983).

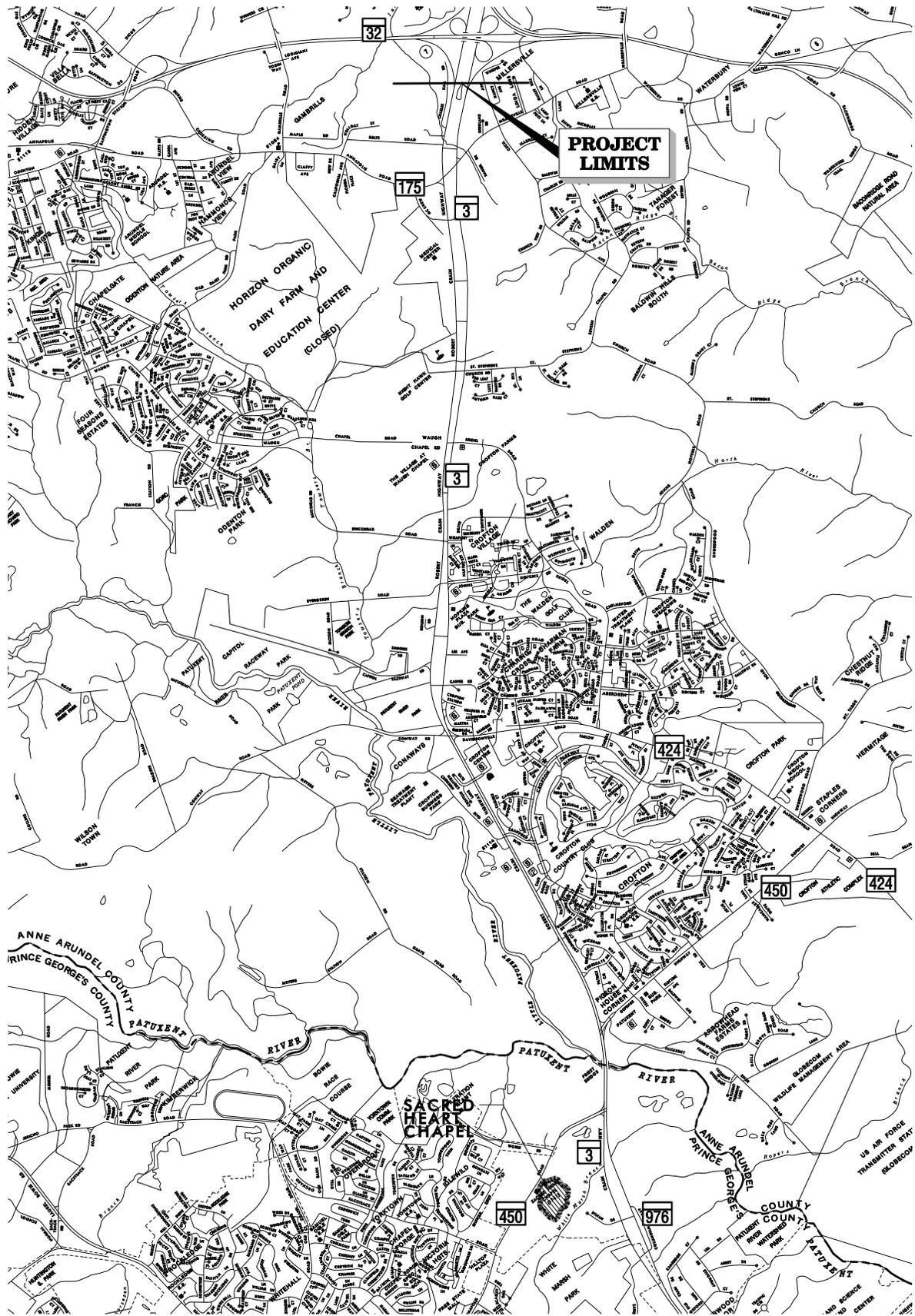
Background research and field surveys were conducted to facilitate identification of the cultural resources. A review of previous planning and research studies, existing inventories of historic properties, previous survey information, and historic maps was undertaken. The research was conducted in consideration of the magnitude and nature of the undertaking, degree of federal involvement, the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties within the area of potential effects. Reports were prepared to facilitate evaluation of the cultural resources. These documents include: Maryland Inventory of Historic Properties form; Determination of Eligibility forms; 5"x 7" black and white photography, and appropriate USGS quadrangle mapping identifying each resource.

All cultural resources identified during the architectural and archeological surveys were submitted to the state historic preservation office (SHPO) for National Register eligibility determinations, or comment for further evaluation. Historic properties were evaluated in accordance with criteria of the National Register of Historic Places (NRHP). These criteria state that “the quality of significance in American History, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and: that are associated with events that have made a significant contribution to the broad patterns of our history (Criterion A); or that are associated with the lives of persons significant in our past (Criterion B); or that embody the distinctive characteristics of a type, period, or method of construction that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C); or that have yielded, or may be able to yield, information important in prehistory or history” (Criterion D) (36 CFR 60.4, and National Register Bulletin No. 15). Correspondence documenting prior consultation with the SHPO and other interested parties is provided in **Chapter V – Comments and Coordination**.

1. Historic Standing Structures

The term “historic standing structures” refers to any above ground building, structure, district, or object that attributes to our cultural past. When these resources meet the criteria for listing in the NRHP, they are historic properties that must be considered under the requirements of the NHPA. The Sacred Heart Roman Catholic Church (PG: 71A-19), located with the Area of Potential Effect (APE) for the proposed MD 3 corridor improvements, has been determined eligible for the NRHP. **Figure III-8** shows the location of the property. A description and its significant characteristics are provided below.

SHA previously coordinated the eligibility of the Sacred Heart Roman Catholic Church in the mid-1980s. The church is the only pre-Revolutionary Roman Catholic Church in Prince George's County. A stone chapel, which survives as the present day sanctuary, was constructed circa 1741, although the site was possibly used by the Jesuits as early as the 1720s.



LEGEND

 NATIONAL REGISTER OF HISTORIC PLACES ELIGIBLE SITES



SNA MARYLAND DEPARTMENT OF TRANSPORTATION
State Highway ADMINISTRATION

MD 3 PROJECT PLANNING STUDY
Final Environmental Impact Statement

SITES ON OR ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES

SCALE: As Shown PROJECT: III-6

The Mission of St. Francis Borgia was established on a tract of land belonging to James Carroll and known as Carrollsburgh. This 2,000-acre tract straddled the Patuxent River in both Prince George's and Anne Arundel Counties. With James Carroll's death in 1728, the property was bequeathed to George Thorold of Charles County, or, in the case of Thorold's death, to Peter Atwood and Joseph Greaton. All three men were members of the Jesuit clergy. Since the Roman Catholic Church was not allowed to own land at that time, Carroll's bequeath enabled the Church to legally own and use the land for Catholic worship.

The Sacred Heart Church is a gable-roof stone building with an early semi-octagonal sanctuary at one end and a later frame bell tower at the other end. The building stands high on a hill on wooded grounds with an adjacent graveyard. The nave of the Church is built of undressed stone; it is four bays long, with each bay in the long north and south facades filled with Gothic-arch stained glass windows. The entrance to the Church is through the bell tower.

In May of 1853, a fire damaged the church building, furniture, records, and vestments, but the stone walls survived. The church was restored in 1855. In 1874, when the long walls of the nave began to bow, the structure was reinforced and at approximately the same time the Rector's residence was constructed. A new church building was constructed on-site in 1969 to accommodate the expanding congregation. The original building presently serves as a chapel.

2. Archeological Resources

The term "archeological resources" refers to all evidences of past human occupation that can be used to reconstruct the lifeways of past peoples. These include sites, artifacts, environmental and all other relevant information, as well as the contexts in which they occur. In accordance with the laws previously referenced, all archeological prehistoric, historic, and underwater sites must be evaluated for their eligibility for the NRHP by the lead Federal agency and the SHPO.

The APE for archeological investigations was defined by the limits of ground disturbance associated with worst case impacts under all alternates retained for detailed study. Archeological identification investigations were conducted within the APE to ascertain the range and number of historic and prehistoric period archeological resources present, and to make recommendations for further evaluations for eligibility to the NRHP. It is common in archeology for the SHPO to determine eligibility for the NRHP only for the portion of a site that is within the limits of disturbance (LOD) with a Memorandum of Agreement (MOA) to document the consultation process to be followed if the LOD shifts.

Prior archeological surveys of the study area recorded 17 archeological resources in or adjacent to the APE. Field visits by archeologists in 2001 documented the destruction of eight of these resources (resources identified as 18AN55, 18AN223, 18AN393, 18AN594, 18PR34, 18PR197, Bowie quad file 18PRX9, and Curry Area #1). Consequently, these resources are ineligible for listing on the NRHP. In addition, Site 18AN1137 was identified and previously determined ineligible for NRHP listing. Therefore, eight of the original 17 sites needed evaluation for the NRHP.

Six of those eight resources were previously determined potentially eligible: Oak Grove Site (18AN503), Basil Hall Site (18AN511), Belt Site (18AN512), Potomac and Aquia Creek Railroad bed (18AN513), Annapolis and Elkridge Railroad bed (18AN514 as part of a potential district), and Warfield Site (18PR33).

Field visits in 2001 determined: a) that the two remaining known archeological resources (of the 17 identified in the APE), and b) five new intact, previously unsurveyed areas with high archeological potential need Phase I archeological investigations. The two known sites were: Highway Site (18PR154), and the former location of Priest Bridge (PG-71A-18, Bowie Quad File # 11) over the Patuxent River.

a. Archeological Investigations

Based on initial plans outlining Alternates 3 and 5 Modified and their associated Interchange Options presented in the DEIS, SHA conducted the required Phase I and Phase II archeological investigations of eight sites and five unsurveyed areas identified above that remained intact and retained high archeological potential within the APE. The results of these investigations are documented in *Phase I and II Archeological Investigations, Maryland Route 3 from Maryland Route 32 to US 50, Anne Arundel and Prince Georges Counties, Maryland* (Affleck et al. 2003).

Results of the Phase I investigation indicated that the Highway Site (18PR154) was not eligible for NRHP listing.

Phase I investigations for the five archeological sites not previously identified determined that 18AN1236 was not eligible for the NRHP; Phase II investigations on three remaining sites (18PR654, 18PR655, and 18PR657) determined that they were not eligible for the NRHP. Site 18PR656 was determined to be outside of the APE.

The Warfield Site (18PR33) was previously subjected to Phase II archeological evaluation and determined eligible for NRHP listing. Data recovery on the Warfield Site was deferred, and the proposed treatment documented in the MOA, until the final design phase.

SHA completed Phase II evaluations at five sites: the Basil Hall Site (18AN511), the Oak Grove Site (18AN503), the Belt Site (18AN512), and railroad features associated with the Potomac and Aquia Creek Railroad (18AN513/AA-2318) and the Annapolis and Elkridge Railroad (18AN514/AA-2319).

Basil Hall (18AN511) and Oak Grove (18AN503) consist of plantation sites with loosely drawn boundaries and core areas located outside the APE. Phase II investigations focused on the portions of these sites within the APE, namely, the site margins adjacent to existing MD 3. No resources associated with Oak Grove and Basil Hall were located in the APE and neither area warrants further investigation. Recent work by others determined that the Basil Hall site was not eligible for the NRHP. An eligibility determination on the remaining portions of the Oak Grove site is required, as documented in the MOA (see page **V-A-71** in **Chapter V – Comments and Coordination** or **Appendix E** for more details), if the limits of disturbance shift outside the

studied area. Neither former plantation site was evaluated as architectural sites since the structures are no longer extant.

Phase II investigations at the Belt site (18AN512) confirmed the presence of intact deposits and features, but also indicated numerous fill deposits and disturbance from the railroad embankment. The site lacks buried deposits, ceramics are poorly represented, faunal remains are absent, and the artifacts in the sheet midden are very fragmented. The site was therefore determined ineligible for the NRHP.

Parts of the mid-19th Century Potomac and Aquia Creek Railroad bed (18AN513) and the Annapolis and Elkridge Railroad bed (18AN514) were located in the APE in the form of intact prisms. SHA has determined that neither railroad bed possesses sufficient integrity to be considered eligible for NRHP listing.

An underwater survey was undertaken at the former location of Priest's Bridge, PG-71A-18 (Bowie quad file # 11) in 2003 which noted an underwater rock mound. Language was included in the 2007 MOA for treatment of this potentially historic former bridge piling if an alignment shift were to impact it. However, further research in 2010 did not find evidence that the Priest's Bridge crossed in that location, and the rock mound was found not to be a cultural resource (see March 30, 2010 letter on page **V-A-103**).

Table III-6 summarizes the cultural resource sites identified within the study area and addresses eligibility.

**Table III-6
Cultural Resource Site Investigations and Eligibility**

Resource	Type	SHPO Opinion
Sacred Heart Chapel PG:71A-19	Structure	Eligible 3/8/04
AA-2318 Potomac & Aquia Creek Railroad/18AN513	Structure and Archeological Site	Not Eligible 3/8/04
AA-2319 Annapolis Elkridge Railroad/18AN514	Structure and Archeological Site	Not Eligible 3/8/04
Belt Site 18AN512	Archeological	Not Eligible 3/8/04
Highway Site 18PR154	Archeological	Not Eligible 3/8/04
Oak Grove site 18AN503	Archeological	Not determined for entire site, portion of site in APE is not significant 3/8/04
Basil Hall Site 18AN511	Archeological	Not Eligible 4/25/07
18PR654	Archeological	Not Eligible 7/25/06
18PR655	Archeological	Not Eligible 7/25/06
18PR656	Archeological	Not in APE
18PR657	Archeological	Not Eligible 7/25/06
18AN1236	Archeological	Not Eligible 3/8/04
18AN1137 Archery Range	Archeological	Not Eligible 8/12/99
18AN55 Baldwin	Archeological	Not Eligible 7/25/06
18AN223 Pigeon House Corner	Archeological	Not Eligible 7/25/06
18AN393 Sand Pit	Archeological	Not Eligible 7/25/06
18AN594 Crofton House South (Cedar Grove)	Archeological	Not Eligible 7/25/06
18PR34 White Marsh South	Archeological	Not Eligible 7/25/06
18PR197 Slinghuff Barn	Archeological	Not Eligible 7/25/06
18PRX9	Archeological	Not Eligible 7/25/06
Curry Area 1	Archeological	Not Eligible 7/25/06
Warfield site 18PR33	Archeological	Eligible 3/8/04
Priest Bridge (PG-71A-18, Bowie Quad File #11) submerged rock mound	Not a cultural resource	No further work required 4/5/10

C. NATURAL RESOURCES

1. Climate

The study area lies in a region about midway between the rigorous climates from the north and the mild climates from the south, and adjacent to the modifying influences of the Chesapeake Bay and Atlantic Ocean to the east and the Appalachian Mountains to the west. The net effect of the mountains to the west and the Chesapeake Bay and Atlantic Ocean to the east is the production of a more moderate climate compared with other continental locations farther inland at the same latitude. Rainfall distribution is fairly uniform throughout the year, although the greatest intensities are confined to the summer and early fall months, the season for hurricanes

and severe thunderstorms. Severe droughts are rare, although moisture deficiencies for crops do occur occasionally during the growing season. On average, January is the coldest month and July is the warmest. Snowfall occurs about eleven days per year on the average, however, an average of only about six days annually produces snowfalls of one inch or greater. Snow is frequently mixed with rain and sleet, and snow seldom remains on the ground more than a few days. The annual prevailing wind direction is from the west. Winter and spring months have the highest average wind speed. Destructive velocities are rare and occur mostly during summer thunderstorms.

For additional details regarding the climate of the study area, please refer to the **MD 3 Natural Environmental Technical Report**.

2. Topography, Geology, and Soils

a. Topography and Geology

The topography of the study area is characterized by a level floodplain within the Patuxent River drainage and gently rolling terrain in the north and south. Elevations range from about 30 feet near the Patuxent River, then rising to 170 feet near MD 32. The State *Sediment & Erosion Control Program and Law* protects slopes greater than 25 percent. All slopes greater than 25 percent must have a 25-foot buffer. Slopes greater than 25 percent are present throughout the study area, adjacent to MD 3, particularly near the Patuxent River.

The Coastal Plain Province is the easternmost and largest province in Maryland, with an area covering almost fifty percent of the State. As streams cross from the Piedmont into the Coastal Plain, they change from hard-rock bottoms to softer, more easily eroded substrate. At the western boundary of the Coastal Plain, as streams flow across this transition (the “fall line”), they slow and begin cutting more deeply into the landscape. The most well known section of the fall line is Great Falls on the Potomac River. The thick layers above the bedrock of the Coastal Plain consist of unconsolidated sediments – primarily gravel and sand. Some of these sediments are of oceanic origin, although many are derived from the Piedmont Plateau and were deposited in lakes, swamps, and the river floodplains.

Mineral resources of the Coastal Plain are chiefly sand and gravel, and are used as aggregate materials by the construction industry. Clay for brick and other ceramic uses is also important. Small deposits of iron ore are of historical interest. Plentiful supplies of ground water are available from a number of aquifers throughout much of this region. The Atlantic Continental Shelf contains abundant sand deposits, useful for beach restoration.

b. Soils

According to the *Soil Survey of Anne Arundel County* and the *Soil Survey of Prince George’s County*, five soil associations occur within the study area: Bibb-Tidal Marsh; Galestown-Evesboro-Rumford; Monmouth-Collington; Collington-Adelphia-Monmouth; and Evesboro-Rumford-Sassafras.

The Evesboro-Rumford-Sassafras association includes both excessively and well drained soil located in the northern portion of the study area. This association is comprised of sandy and loamy soils found on gently sloping to moderately steep topography, ideal for residential and community development.

The Monmouth-Collington association is the largest within the study area, formed in nearly level to moderately steep topography. These well-drained soils develop in sediments containing glauconite, a green silicate mineral, and are among the most productive in Anne Arundel County-suitable for hay, pasture, orchards and row crops.

The Galestown-Evesboro-Rumford association and the Bibb-Tidal Marsh association occur in narrow bands parallel to the Patuxent River. The Bibb-Tidal Marsh association is found within Prince George's County, mostly along the floodplain of the Patuxent River. This association is made up mainly of alluvial, poorly drained, floodplain soils. The Galestown-Evesboro-Rumford association is primarily sandy soils formed on nearly level topography.

The southernmost end of the study area is made up of the Collington-Adelphia-Monmouth association. These upland soils are deep, nearly level, and moderately well to well drained. Soils in this association are very productive for agriculture and have few limitations for residential development.

Erosion potential is a very important soil characteristic because it determines the stability and safety for development. Collington, Galestown, Sassafras, and Woodstown soils are potentially highly erodible soils. The **MD 3 Natural Environmental Technical Report** includes mapping of the soil types within the study area and a table listing the prevalent soil types with a brief description of soil features for each soil type.

The Patuxent River, Little Patuxent River, and White Marsh Branch are primarily surrounded by Bibb silt loam, Mixed alluvial land, and Swamp. Bibb silt loam is the only soil in the study area listed on the *Hydric Soils of the United States* (1991), and it is also on the Hydric Soils list for Prince George's County.

The study area lies within the Coastal Plain physiographic province. Coastal Plain soils are made up primarily of alluvial and marine deposits. Marine deposits are typically comprised of reduced sulfur compounds that release highly acidic sulfates when exposed to the environment. Human influences, such as roadway grading and other excavation may accelerate the exposure of these soils. When these acidic soils are released into nearby streams the increase in acidic levels can be lethal to aquatic organisms, particularly to the sensitive trout populations in Jabez Branch. Thus, sediment and erosion control is extremely important to limit impacts from acidic soils.

SHA is committed to implementing best management practices during construction in order to provide stream habitat protection measures focusing on the minimization of sedimentation and water quality impacts to downstream areas through stormwater management planning and design.

As noted previously in this document, the Jabez Branch is the only natural trout stream within the Coastal Plain physiographic province of Maryland. DNR documented a decline of the native brook trout population here over the past fifteen years, a trend largely attributed to the flooded borrow pit in the median of MD 3 (“Lake Median”) constructed by SHA for I-97 in the late 1980’s. The Lake Median has been reconstructed so that there is now no outflow to Jabez Branch. Through restocking efforts, the DNR has re-established the trout population there. The DNR regularly monitors the Jabez Branch to ensure that the trout are reproducing sufficient young of the year to sustain the overall population. The environmental agencies have requested that the stormwater flow into Jabez Branch be limited as much as possible to prevent temperature fluctuations, and they have stressed the importance of sediment and erosion control to limit impacts from acidic soils.

In response to these concerns SHA has agreed to investigate methods during the final design phase to control erosion and sediment, water temperatures, and the release of acidic sulfates into the Jabez Branch. While SHA may find some of the following methods to be cost-prohibitive, all options will be evaluated during the final design phase of this study to ensure habitat and water quality protection.

Temperature, drainage, erosion and sediment control methods to be considered include the following:

Water Temperature

- Existing mature tree shade coverage
- Vegetative surface covers (spatterdock/lily pads)

Drainage Control Techniques

- Water diversion channels/structures
- Temporary and permanent waterway crossings
- Energy dissipaters and outlet protection
- Check drums
- Flutes and flumes
- Grassed channels
- Level spreaders
- Reinforced grassed channels
- Rock and Concrete lined channels and protection
- Sediment Basin Spillways
- Vegetative cover

Erosion Control Techniques

- Ground covers
- Mulching and seeding
- Erosion control blankets/mats
- Surface roughening
- Vegetation/Revegetation
- Chemical surface stabilizers
- Soil-cement treatment

- Geosynthetic lined channels
- Control of Wind erosion
- Turfing
- Vegetation logs and mats

Sediment Control Techniques

- Filter strips and filter traps and buffer zones Grass swales
- Sand filters
- Infiltration trench/basin
- Sediment traps and barriers
- Buffer zones and grass filter strips
- Sediment trench
- Rock filter dams
- Sediment basins
- Sediment ponds
- Sediment weirs
- Gross pollutant traps

Techniques to minimize the release of acidic sulfates into the stream include: soil conditioners and/or amended soils during construction; real time pH monitoring devices, solar powered chemical pumps and aeration systems to control alkalinity, pH, and oxygen levels.

c. Prime Farmland Soils, Soils of Statewide Importance, and Unique and Locally Important Farmland Soils

Prime farmland soils are soils that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and are also available for these uses (the land could be cropland, pasture, forest, or other land uses with the exception of urban built-up land or water). Prime farmland soils have the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. Sassafras fine sandy loam and Woodstown sandy loam are listed as Prime Farmland soils for Anne Arundel County. Ochlockonee sandy loam, Woodstown loam, Shrewsbury fine sandy loam and Swamp soils are all listed as Prime Farmland soils for Prince George's County. Swamp soils are found in the area surrounding the Patuxent River. Ochlockonee sandy loam, Woodstown loam, Shrewsbury fine sandy loam are present in the study area but the soils are not used for growing crops.

Soils of statewide importance include those soils in Land Use Capability Class II and Class III that do not meet Prime Farmland soils criteria. Class II contains soils having some limitations for cultivation and Class III contains soils having severe limitations for cultivation. These soils are nearly prime farmland soils and economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce yields as high as prime farmland soils if conditions are favorable. There are no soils of statewide importance in the study area.

Unique farmland soils are land other than prime farmland soils that are used for the production of specific high value food and fiber crops. This land has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, fruit, and vegetables. There are no unique farmland soils in the study area.

Locally important farmland soils include those soils that are not of prime or statewide importance and are used for the production of high value food, fiber or horticultural crops. There are no locally important farmland soils in the study area.

For additional details regarding soils in the study area, please refer to the **MD 3 Natural Environmental Technical Report**.

3. Water Quality

a. Groundwater

In Maryland, groundwater exists in both confined and unconfined conditions. Unconfined aquifers (water table) are generally near the surface and are usually the first aquifers encountered when drilling in the coastal plain. These aquifers are local in extent and the directional movement of water is dependent on the surface topography, soils, and underlying geology. The unconfined aquifers recharge streams, reservoirs and other surface waters and are vulnerable to contamination from activities on the land surface.

Confined aquifers (artesian) are deep aquifers protected by a confining layer or formation. Drinking water is obtained from confined aquifers. Aquifers contributing more than 50 percent of the drinking water to a specific area are designated as sole source aquifers by the Environmental Protection Agency under Section 1424(e) of the Safe Drinking Water Act of 1974. These sole source aquifers would be impossible to replace if contaminated and, therefore, projects having the potential to contaminate these aquifers are subject to federal review and approval. There are no designated sole source aquifers within this study area. However, Anne Arundel County's public water supply is from groundwater within deep aquifers.

The City of Bowie has a wellhead protection boundary located within the floodplain of the Patuxent River that traverses the study area. This boundary is the Magothy Formation Outcrop Aquifer Protection Area which includes the land areas where each aquifer unit outcrops at the land surface directly upgradient of the wellhead protection areas. According to the Maryland Geological Survey there are no groundwater wells or springs in the study area. There are local wells located in the vicinity the study area.

For additional details regarding groundwater in the study area, please refer to the **MD 3 Natural Environmental Technical Report**.

b. Surface Water

The quality of water in the Patuxent River within the study area has degraded over the last 50 years. Factors contributing to the degradation include the discharge from Bowie's Wastewater Treatment Plant, nutrient runoff from fertilized land, and sediment runoff from agricultural land and development. These point and nonpoint sources have stressed water quality, and the increase in peak runoff has caused severe stream bank and bed erosion of many streams. This erosion has resulted in degraded aquatic, wetland, and submerged aquatic vegetation habitat due to associated turbidity.

The Little Patuxent River is a major tributary of the Patuxent River. Water quality in the Little Patuxent is also experiencing similar stresses. Efforts have been made specifically in the Little Patuxent River watershed to restore habitat and improve water quality within the Towsers Branch sub-watershed.

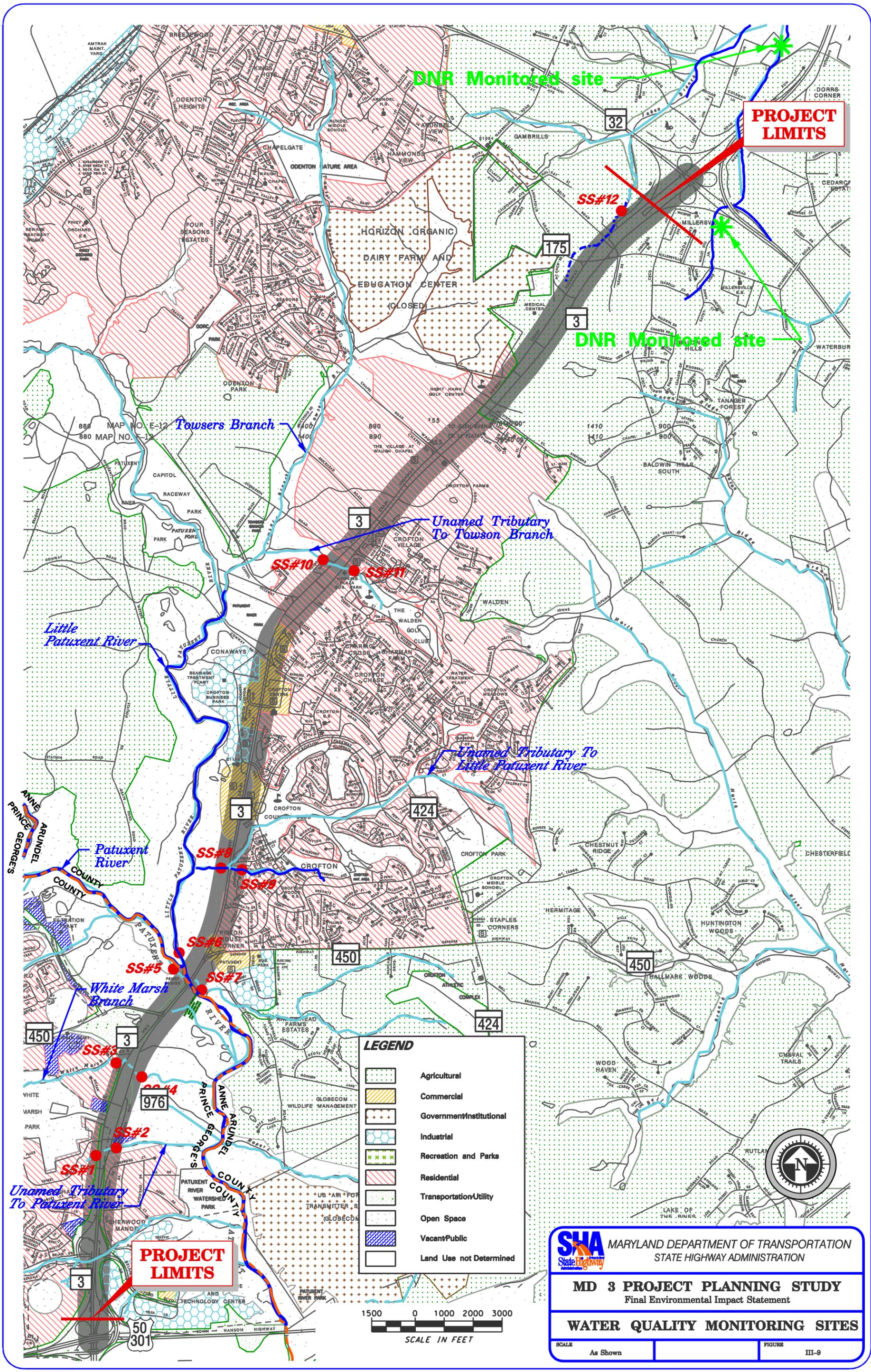
The methodology used for measuring water quality in the study area followed the Maryland State Highway Administration's Stream Monitoring Protocol (SHA Protocol), published in April 2001. This SHA Protocol for water quality sampling, macroinvertebrate sampling, fish sampling, habitat assessment, and physical stream assessment is consistent with, and is supplemented by, the procedures outlined in the Maryland Department of Natural Resource's (DNR) Maryland Biological Stream Survey Sampling Manual (MBSS).

Consistent with the MBSS Sampling Manual, the water quality and macroinvertebrate sampling, and habitat assessments were conducted on March 4, 2002, during the Spring Index Period between March 1st and April 30th. Fish sampling, in-situ water quality sampling, and physical assessments were conducted during the Summer Index Period of June 1- September 30.

Seven perennial streams were monitored: an unnamed tributary to the Patuxent River (SS #1 & SS #2), White Marsh Branch (SS #3 & SS #4), the Patuxent River (SS #5 & SS #7), the Little Patuxent River (SS #6), an unnamed tributary to the Little Patuxent River (SS #8 & SS#9), an unnamed tributary to Towsers Branch (SS #10 & SS #11), and Jabez Branch (SS #12). See the **MD 3 Natural Environmental Technical Report** for details on the water quality monitoring program for the study area. The locations of these sampling sites are shown on **Figure III-9**.

In addition to water quality sampling, macroinvertebrate sampling was also conducted for twelve selected sampling sites. Macroinvertebrates include stream dwelling insects, worms, mollusks, and crustaceans. Sampling the macroinvertebrate community provides a qualitative description of the overall health of the stream and its ability to support that community. Macroinvertebrates, and especially benthic species, are good water quality indicators because of their limited mobility and wide range of tolerances. Sampling results can also indicate possible stresses to the stream such as pollutants and habitat degradation, while providing a measure of site-specific conditions. **Table III-7** provides a water quality rating for each of the twelve sampling sites sampled for macroinvertebrates.

In general, the streams did not receive high water quality ratings. Seven out of twelve sampling sites presented poor ratings based on the number of genus types for each sampling. SS #9



LEGEND

	Agricultural
	Commercial
	Government/Institutional
	Industrial
	Recreation and Parks
	Residential
	Transportation/Utility
	Open Space
	Vacant/Public
	Land Use not Determined



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MD 3 PROJECT PLANNING STUDY
 Final Environmental Impact Statement

WATER QUALITY MONITORING SITES

SCALE: As Shown FIGURE: III-9

(unnamed tributary to Little Patuxent River) and SS #10 (Unnamed tributary to Towsers Branch) rated the lowest of all sample sites.

Sampling sites SS #6 (Little Patuxent River) and SS # 7 (Patuxent River) scored much higher than the rest of the sample sites. Collection from SS #6 indicated a wide diversity of species and species more sensitive to pollution and other stresses.

To determine the ecological health of fish communities in the study area streams, fish were sampled during the summer. Four streams were selected for sampling, including the downstream location of the unnamed tributary to Patuxent River (SS #2), the downstream location of White Marsh Branch (SS #4), the downstream location of the unnamed tributary to Little Patuxent River (SS #8) and the downstream location of the unnamed tributary to Towsers Branch (SS #10).

**Table III-7
Water Quality Rating Based on Macroinvertebrate Diversity ***

SS #	Poor (No. of Genus <11)	Fair (No. of Genus 11-16)	Good (No. of Genus 17-22)	Excellent (No. of Genus >22)
1	3	-	-	-
2	10	-	-	-
3	10	-	-	-
4	-	13	-	-
5	-	12	-	-
6	-	-	-	26
7	-	-	19	-
8	-	11	-	-
9	2	-	-	-
10	2	-	-	-
11	6	-	-	-
12	4	-	-	-

* Numbers in the table refers to the number of different genus types that were collected at each sampling site.

Electrofishing equipment was used to stun the fish within the sampling area, and nets were used to scoop the fish from the stream. Each fish was identified and recorded on an *MBSS Fish Sampling Sheet*. **Table III-8** lists the species that were identified from the sampling.

**Table III-8
Fish Species Identified in Each Sampling Location**

Species	SS #2	SS #4	SS #8	SS# 10
Blacknose Dace	0	1	0	1
Bluegill	0	0	2	3
Bluespotted Sunfish	0	0	1	0
Brown Bullhead	0	0	1	1
Common Shiner	0	0	0	2
Creek Chub	0	0	1	0
Eastern Mudminnow	0	15	7	0
Green Sunfish	0	0	10	23
Mosquitofish	0	0	0	4
Pumpkinseed	0	0	0	3
Red Fin Pickerel	0	0	1	0

These species correlate with those identified in an MBSS summary for surveyed sampling sites in the Little Patuxent River. Overall, the species and their relative abundance are reflective of the habitat in each stream location. SS #8 and SS #10 had the most diversity of the four streams that were sampled. The Green Sunfish was the most prevalent species within these two streams. SS #2 did not have any fish recovered within the 75-meter segment and SS #4 had only two types of fish species. The lack of fish within these two streams is most likely due to poor habitat. The main problems affecting fisheries in this watershed are related to urbanization and all its associated impacts. Uncontrolled runoff from older developments and excessive runoff from those that need stormwater retrofitting are two problems that generate erosion, destabilize streambanks, and thermally pollute the stream.

For additional information regarding surface water quality in the study area, please refer to the **MD 3 Natural Environmental Technical Report**.

4. Jurisdictional Wetlands and Waters of the U.S.

Review of the *Odenton, Maryland* and *Bowie, Maryland* USGS topographic quadrangles and National Wetland Inventory (NWI) mapping revealed six major streams within the study area: the Patuxent River; three tributaries to the Patuxent River, including the Little Patuxent River, White Marsh Branch, and an unnamed tributary south of White Marsh Branch; Towsers Branch; and Jabez Branch. The maps also indicated the presence of large wooded marshes or swamps within the forested land surrounding the Patuxent River, the Little Patuxent River, and portions of White Marsh Branch, east of MD 3.

a. Wetlands

The NWI maps revealed the presence of large contiguous forested wetlands along the Patuxent and Little Patuxent Rivers, with smaller areas of scrub-shrub wetlands, emergent wetlands, and open water ponds located within or adjacent to the forested wetlands. Additionally, Prince

George's County NWI mapping shows three streams that traverse the study area, two unnamed Patuxent River tributaries and White Marsh Branch. In Anne Arundel County, NWI mapping depicted several ponds, two small emergent wetlands, and one large forested wetland along the Little Patuxent River.

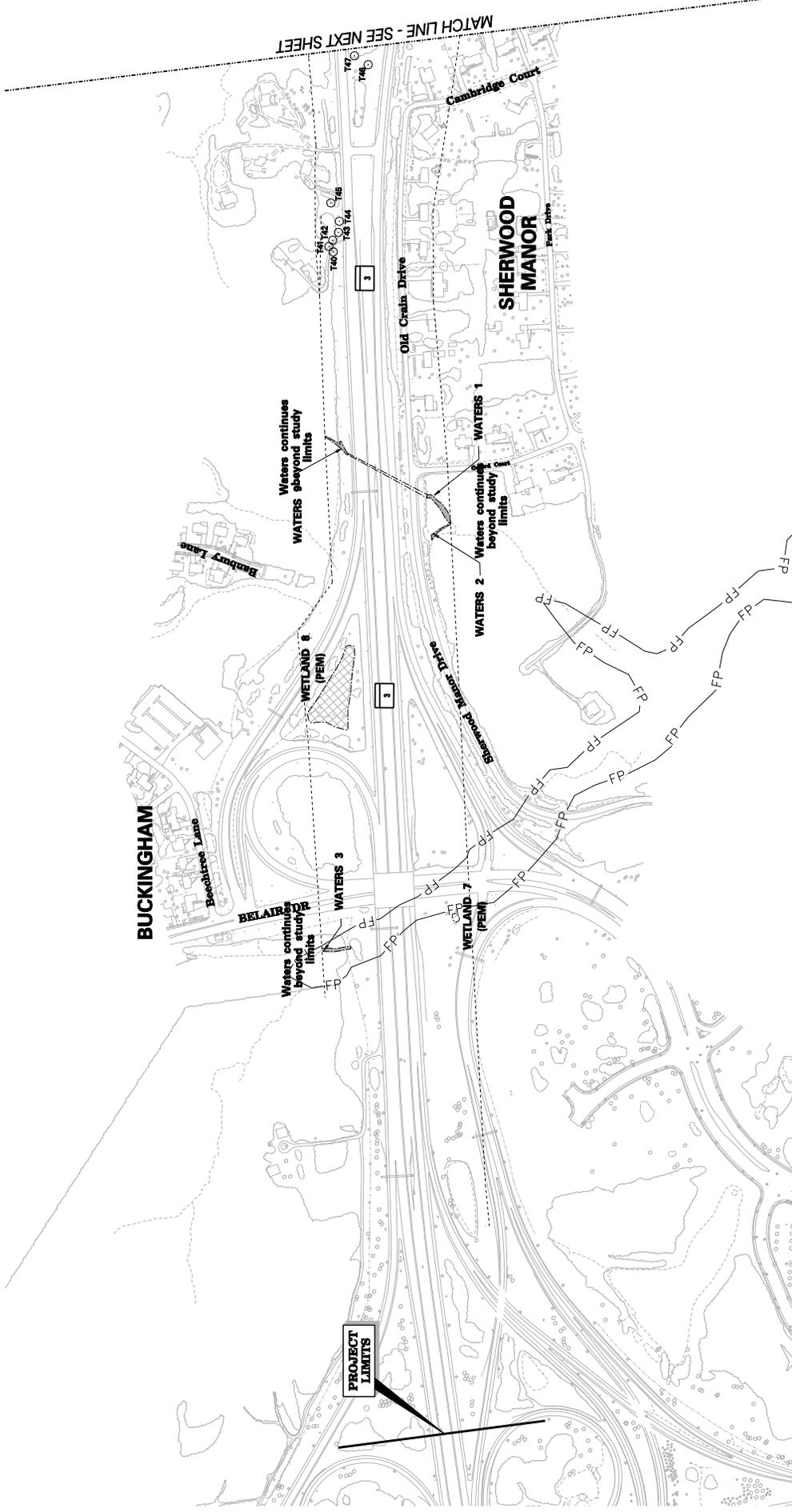
In addition to the map review, a wetland delineation and a wetland function and value assessment were completed for the study area. The wetland investigation resulted in the identification of nine forested wetlands, thirteen emergent wetlands, three forested/emergent wetlands, one emergent/scrub-shrub wetland, one open water/emergent wetland, one open water pond with an emergent/scrub-shrub fringe, and 36 other Waters of the U.S. The delineation was conducted in August 2002 and March/April 2003 according to procedures outlined in the 1987 *Corps of Engineers Wetlands Delineation Manual*. Additional delineation updates were conducted for the areas adjacent to the Patuxent River in 2008 and 2009 as part of the conceptual mitigation site search associated with the proposed MD 450 interchange.

Evaluation of wetland functions and values is considered an important part of the Section 404 permit process. Functions are defined as "self-sustaining properties" of a wetland and values are benefits derived from the functions or characteristics of the wetlands. Functions and values assessments followed those detailed in *The Highway Methodology Workbook Supplement – Wetland Functions and Values: A Descriptive Approach* (US Army Corps of Engineers - New England Division, 1995). This assessment method combines scientific observation with the value judgment offered by the evaluator's consideration of a set of characteristics and relationships.

Jurisdictional wetlands and other Waters of the U.S. are shown on **Figures III-10 through III-17**. The wetland delineation data sheets, function and value forms, and detailed wetland methodology and results are included in the August 2003, **Wetland Delineation Report for MD 3 from north of US 50 to south of MD 32** prepared by the Maryland State Highway Administration. The following, **Table III-9**, is a summary of the data contained in the wetland delineation report. A detailed explanation of the jurisdictional wetlands and function and values are described in the **MD 3 Natural Environmental Technical Report**.

Of the twenty-eight wetlands investigated, five riverine wetlands (Wetlands 1, 2, 3, 4, and 10) are located within the floodplains of the Patuxent River, Little Patuxent River, and White Marsh Branch. Although the vegetation, soils, and hydrologic characteristics differ slightly, these five wetlands possess similar high wetland functions and values, including groundwater recharge/discharge, floodflow alteration, fish and shellfish habitat, sediment/toxicant reduction, nutrient removal, sediment stabilization, wildlife habitat, uniqueness/heritage, and visual quality/aesthetics. The study concluded that these five wetlands are of exceptional value to the Patuxent River watershed. A majority of the remaining wetlands along the study area are of poor function and value, attributed mostly to the size of the wetland, low vegetative diversity and density, and close proximity to MD 3.

MATCH LINE - SEE NEXT SHEET

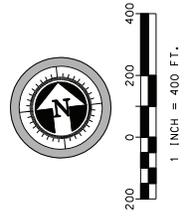


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MD 3 PROJECT PLANNING STUDY
 Final Environmental Impact Statement

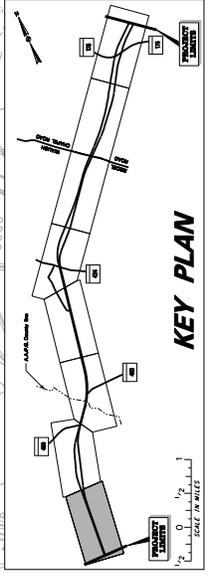
JURISDICTIONAL WETLANDS AND WATERS OF THE U.S. / FLOODPLAINS / SPECIMEN TREES
 As Shown

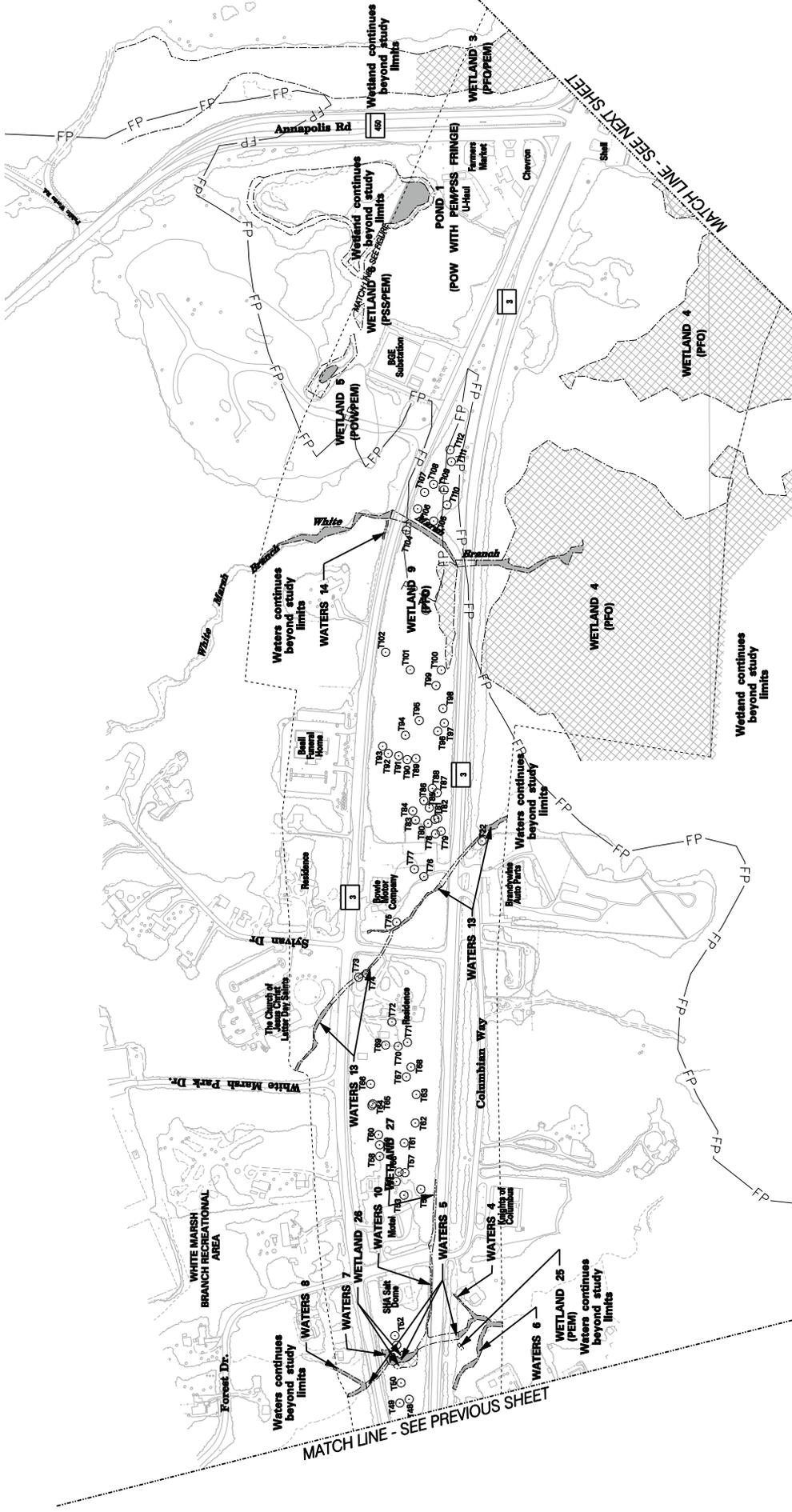
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LEGEND

- Study Limit (dashed line)
- Wetland (hatched pattern)
- Waters of the U.S. (solid grey fill)
- 100-Year Floodplain (dotted pattern)
- Trees > 30" DBH (circle with 'T77')





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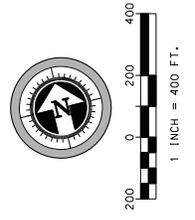
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 Final Environmental Impact Statement

JURISDICTIONAL WETLANDS AND WATERS OF THE U.S. / FLOODPLAINS / SPECIMEN TREES

As Shown

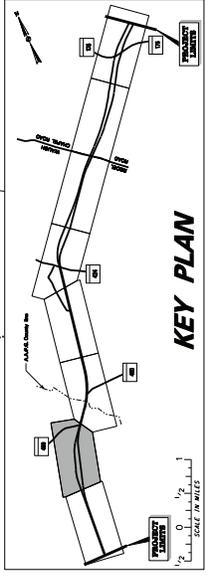
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Sheet: III-1



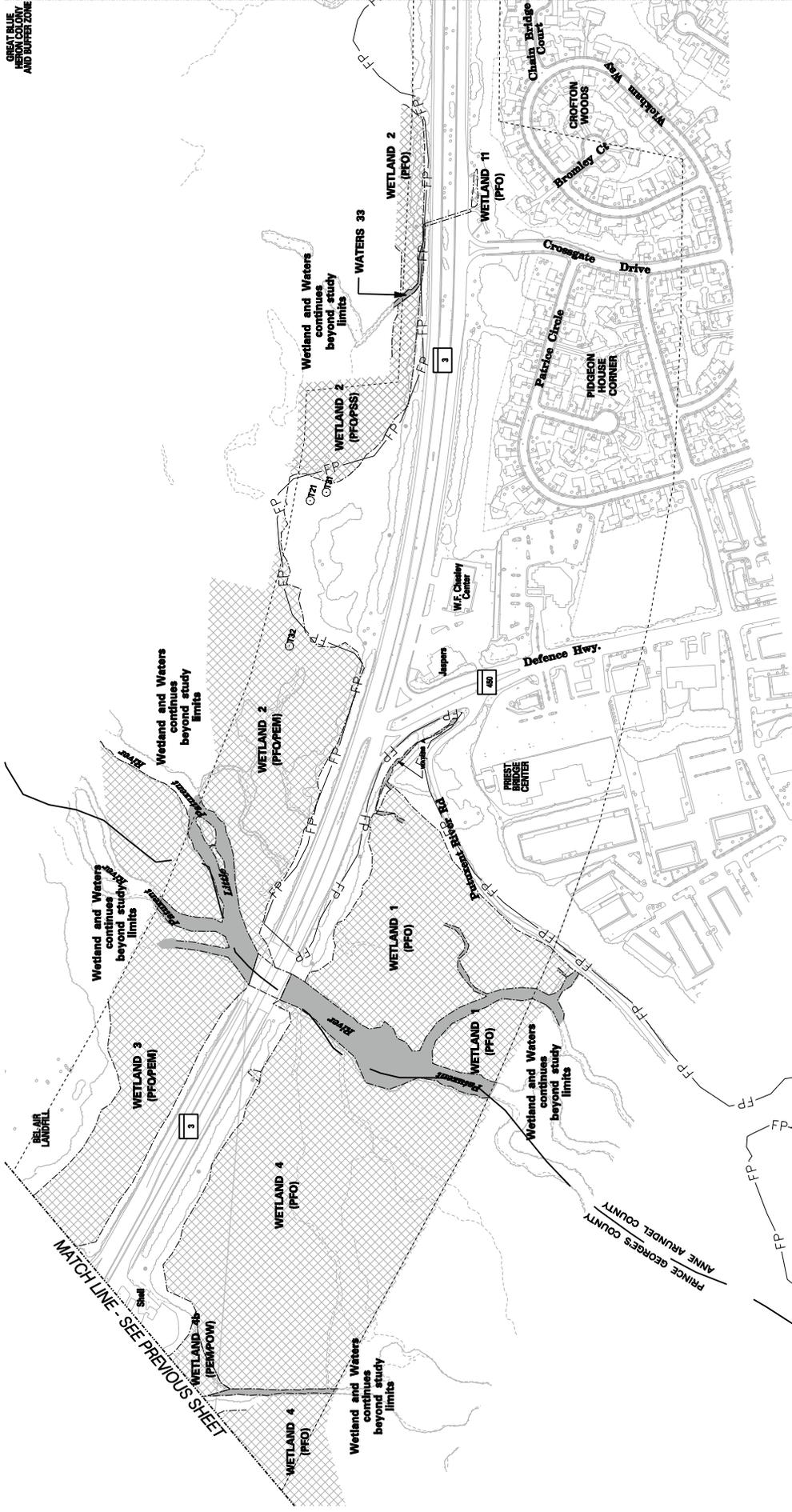
LEGEND

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- Wetland (cross-hatched pattern)
- Waters of the U.S. (horizontal line pattern)
- 100-Year Floodplain (vertical line pattern)
- Trees > 30" DBH (circle with 'T77')



GREAT BLUE
WATERWAY
AND BUFFER ZONE

MATCH LINE - SEE NEXT SHEET



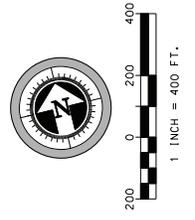
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Final Environmental Impact Statement

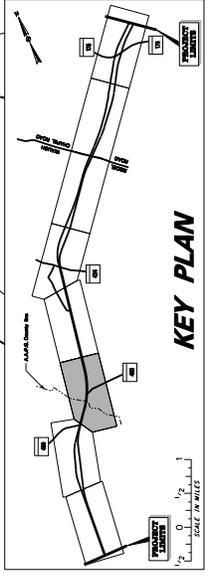
**JURISDICTIONAL WETLANDS AND WATERS
OF THE U.S. / FLOODPLAINS / SPECIMEN TREES**

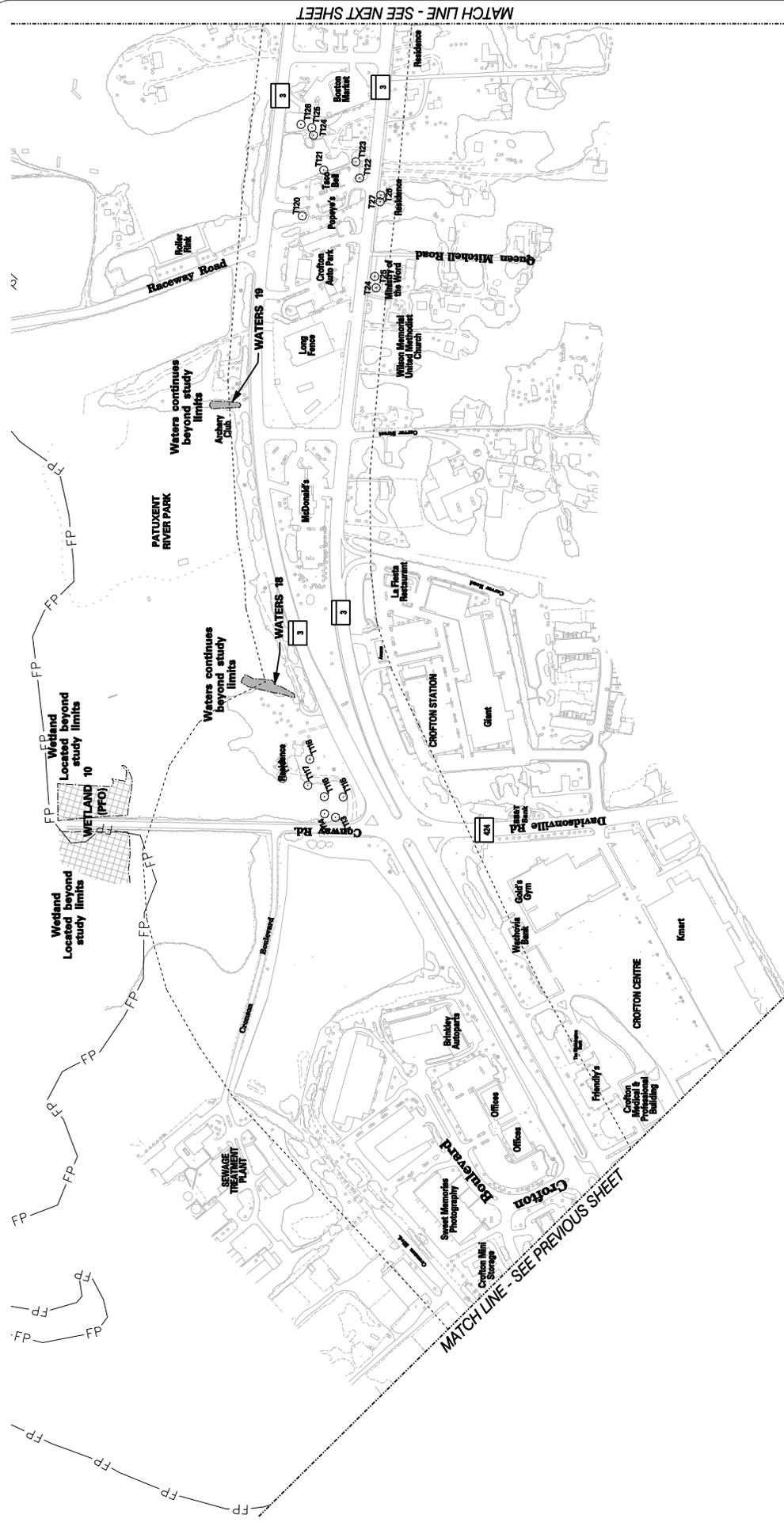
As Shown Project III-13



LEGEND

- Study Limit
- Wetland
- Waters of the U.S.
- 100-Year Floodplain
- Trees > 30" DBH





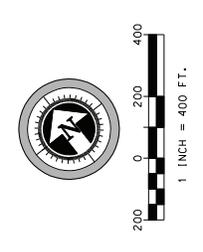
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MD 3 PROJECT PLANNING STUDY
 Final Environmental Impact Statement

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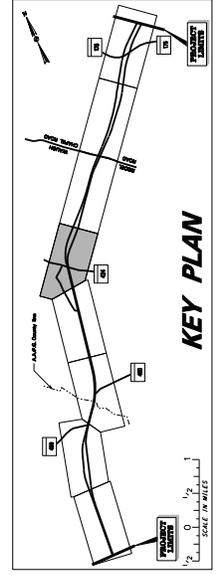
SCALE As Shown

FIGURE III-34

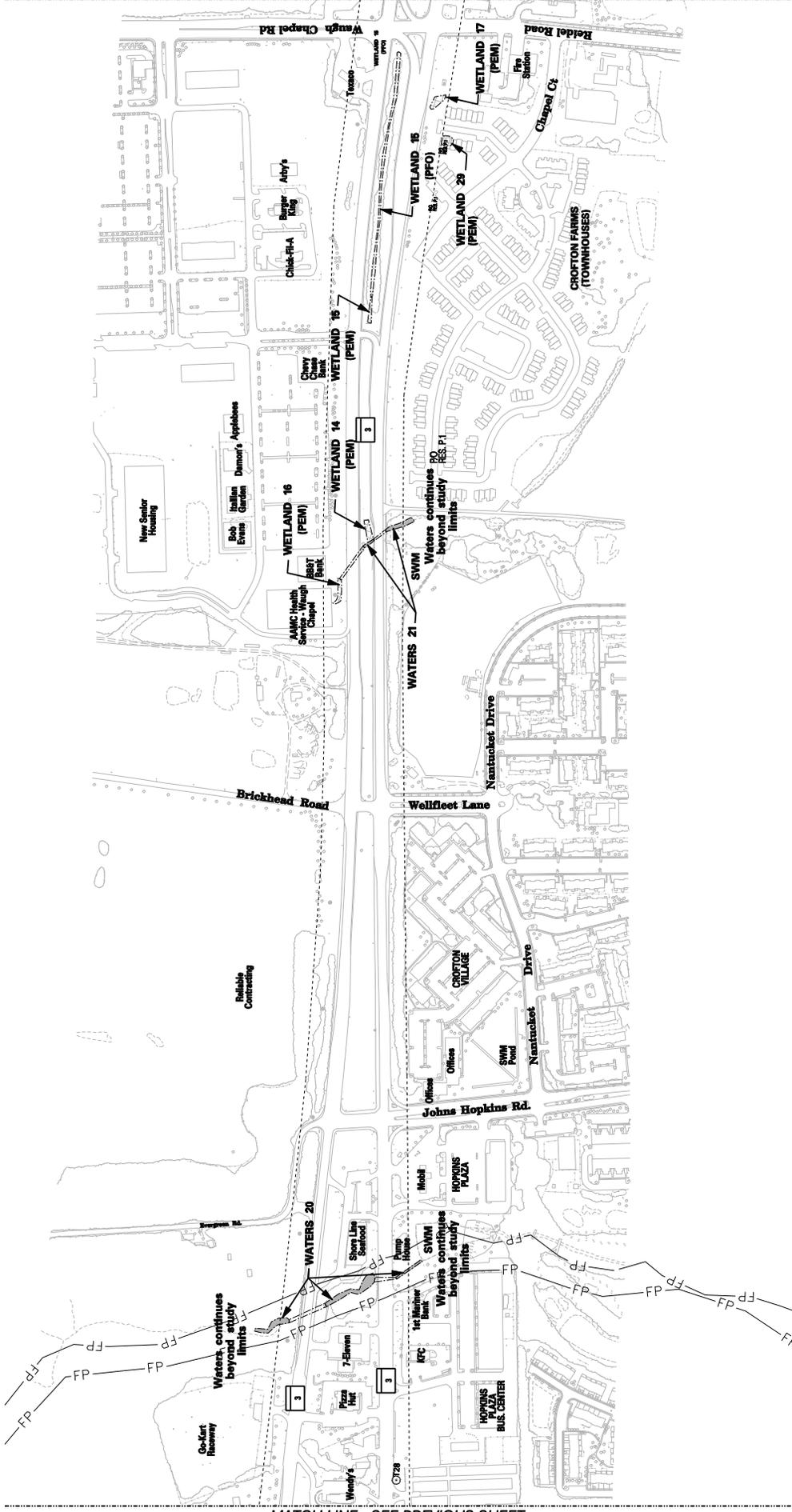


LEGEND

- Study Limit (dashed line)
- Wetland (stippled pattern)
- Waters of the U.S. (horizontal line pattern)
- 100-Year Floodplain (vertical line pattern)
- Trees > 30" DBH (circle with 'T77')



MATCH LINE - SEE NEXT SHEET



MATCH LINE - SEE PREVIOUS SHEET

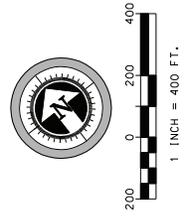
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MD 3 PROJECT PLANNING STUDY
 Final Environmental Impact Statement

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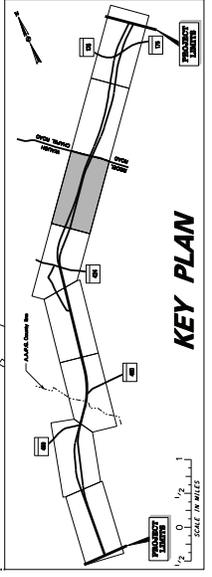
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FIGURE III-15

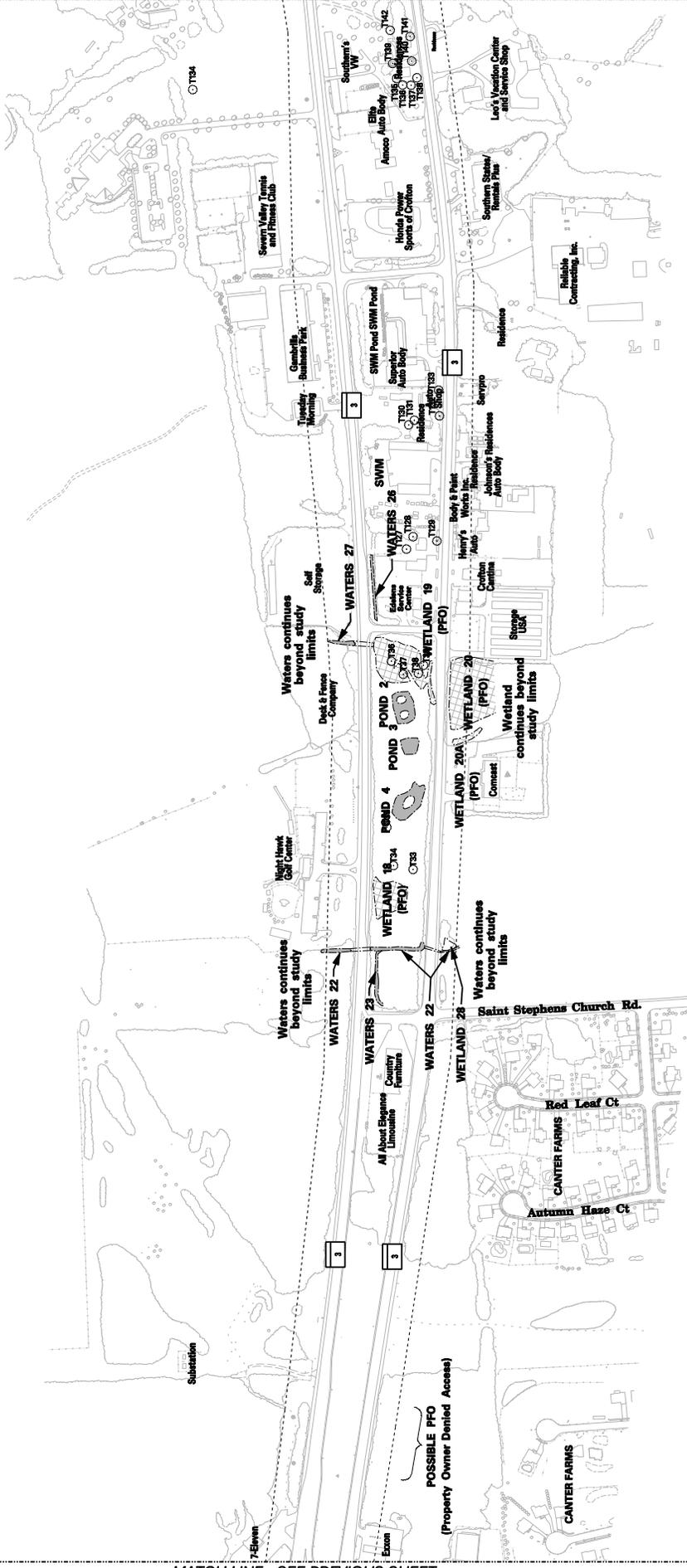


LEGEND

- Study Limit (dashed line)
- Wetland (hatched pattern)
- Waters of the U.S. (solid grey fill)
- 100-Year Floodplain (dotted pattern)
- Trees > 30" DBH (circle with 'T77')



MATCH LINE - SEE NEXT SHEET



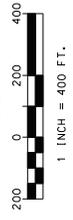
MATCH LINE - SEE PREVIOUS SHEET

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 Final Environmental Impact Statement

JURISDICTIONAL WETLANDS AND WATERS OF THE U.S. / FLOODPLAINS / SPECIMEN TREES

As Shown FROM: III-16

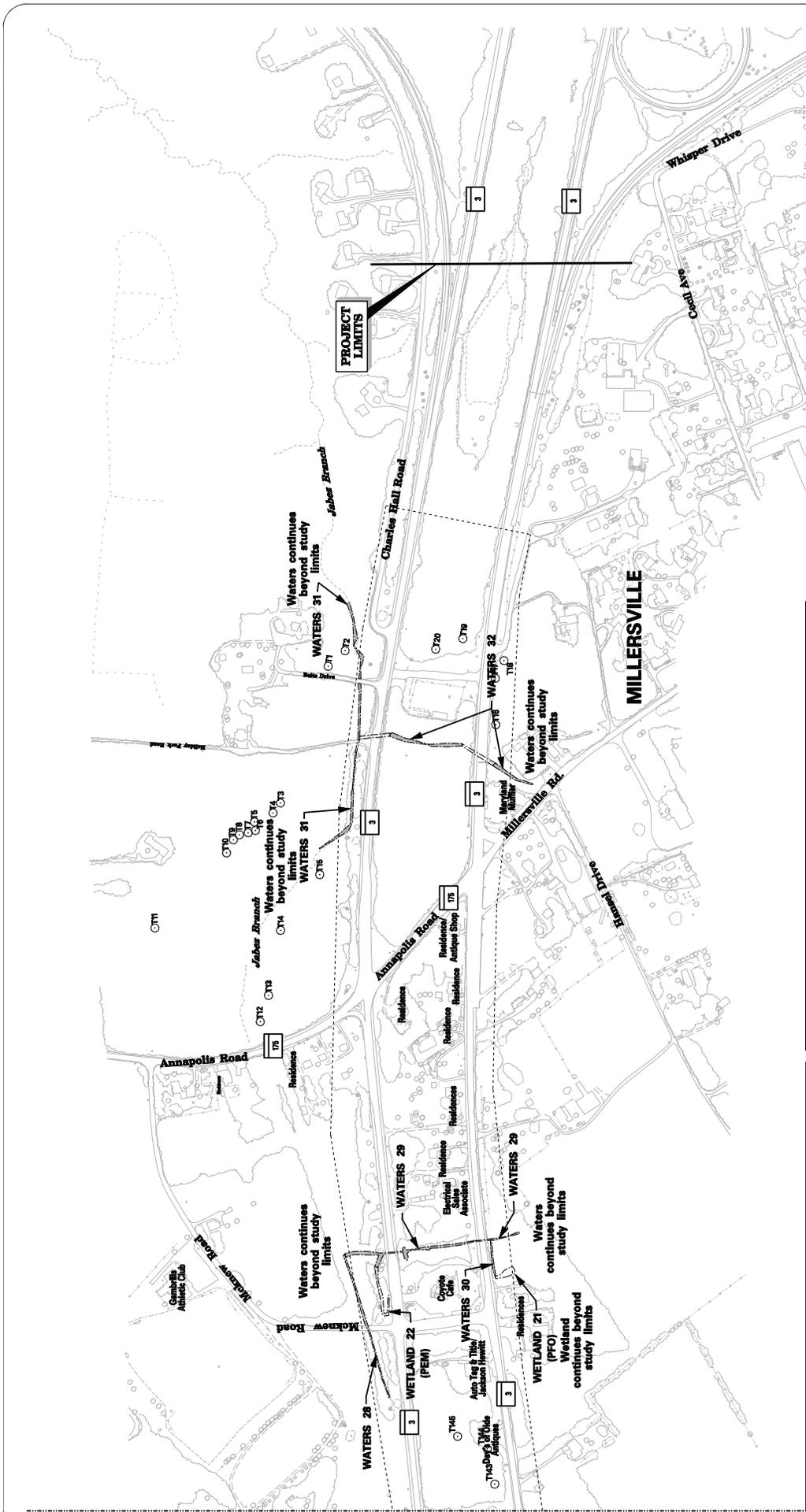


LEGEND

- Study Limit (dashed line)
- Wetland (hatched pattern)
- Waters of the U.S. (solid grey fill)
- 100-Year Floodplain (dotted pattern)
- Trees > 30" DBH (circle with 'T77')

KEY PLAN

SCALE IN MILES



MATCH LINE - SEE PREVIOUS SHEET

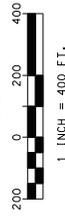
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 Final Environmental Impact Statement

JURISDICTIONAL WETLANDS AND WATERS OF THE U.S. / FLOODPLAINS / SPECIMEN TREES
 As Shown

SCALE: 1 INCH = 400 FT.

FIGURE III-17



LEGEND

- Study Limit (dashed line)
- Wetland (stippled pattern)
- Waters of the U.S. (horizontal lines)
- 100-Year Floodplain (vertical lines)
- Trees > 30" DBH (circle with 'T77')

KEY PLAN

SCALE IN MILES

b. Other Waters of the U.S.

In addition to wetlands, many streams, rivers, ponds and other waterways considered to be jurisdictional by the Corps and/or Maryland Department of the Environment (MDE) are located within the study area. The Patuxent River drains a large portion of the study area. Three major tributaries to the Patuxent River, the Little Patuxent River, White Marsh Branch, and Towsers Branch, are located within the study area. All three of these streams are designated as Use I streams - Water Contact Recreation, Protection of Aquatic Life. In-stream construction within these waters is prohibited from March 1 through June 15, inclusive during any year.

A small portion of the northern study area lies within the Severn River watershed. The Severn River and its tributaries are designated as Use IV- Recreational Trout Waters. Jabez Branch, a tributary of Severn Run, drains the northwestern portion of the study area. Jabez Branch is designated as a Use III stream, having the water quality and habitat required to support a naturally reproducing trout population. The boundaries of the South River watershed are also within the study area. However, there are no wetlands or Waters of the U.S. identified along the study area for this watershed.

The distinctive features of the 36 jurisdictional other Waters of the U.S. are provided in **Table III-10**. All of these waters were considered jurisdictional Waters of the U.S. with the exception of Ponds 2, 3, and 4. These waters were considered to be jurisdictional Waters of the State by MDE and not jurisdictional by the Corps.

**Table III-9
Summary of Jurisdictional Wetlands**

Wetland ID No.	Cowardin Classification	Location	Associated Waterway	Primary Functions and Values	Figure No.
1 ^B	PFO1C	East of MD 3	Patuxent River	1,2,3,4,5,6,7,8	12
2 ^B	PFO1B/EM1C	West of MD 3	Little Patuxent River	1,2,3,4,5,6,7,8,9	12
3 ^B	PFO1C/EM1C	West of MD 3	Patuxent River	1,2,3,4,5,6,7,8,9	11,12
4 and 4b ^B	PFO1B/EM1C	East of MD 3	Patuxent River and White Marsh Branch	1,2,3,4,5,6,7,8,9	11,12
5 ^M	POW _x /EM1C	Behind BGE Substation S. of MD 450W	Patuxent River	3,4,6	11
6 ^M	PSS1B/EM1B	Just North of Wetland 5	Patuxent River	3	11
Pond 1 ^M	POW/EM1C/SS1C	SW of MD 450W/MD 3 Intersection	Patuxent River	1,3,6	11
7 ^B	PEM1C	W of NB Ramp from MD 3 to Belair Drive	Patuxent	3	10
8 ^B	PEM1C	Inside MD3/Belair Dr. Interchange	Patuxent	1,3,4,9	10
9 ^B	PFO1A	Median of MD 3	White Marsh Branch	3,9	11
10 ^B	PFO1C	N of MD 424 and W of MD3	Little Patuxent River	1,3,4,5,9	14
11 ^B	PFO1C	E of MD 3 N of Crossgate Dr.	Little Patuxent River	3	12
12 ^M	PEM1C	E of MD 3 and WUS 17	Little Patuxent River	N/A	13
14 ^B	PEM1C	Near MD 3	Towers Branch	1,4	15
15 ^B	PFO1A/PEM1C	Median of MD 3	Towers Branch	1,3	15
16 ^B	PEM1C	W of MD 3	Towers Branch	4	15
17 ^B	PEM1C	E of MD 3 and S of Riedel Rd.	Towers Branch	4	15
18 ^B	PFO1C	Median of MD 3 N of St. Stephens Church Rd.	Towers Branch	1,3,4	16
19 ^B	PFO1C	Median of MD 3 N of St. Stephens Church Rd.	Towers Branch	1,3,4,9	16
20 and 20a ^B	PFO1C	E of MD 3	Towers Branch	1,3,4	16
21 ^B	PFO1C	E of MD 3	Jabez Branch	4	17
22 ^B	PEM1C	Adjacent to SB MD 3	Jabez Branch	4	17
24 ^B	PEM1C	Adjacent to WUS 17	Little Patuxent River	1,3,4	13
25 and 26 ^B	PEM1C	Adjacent to WUS 5	Patuxent River	6,9	11
27 ^B	PEM1C	Adjacent to WUS 10	Patuxent River	1,4	10
28 ^B	PEM1C	E of MD 3	Towers Branch	1,4,6	16
29 ^M	PEM1B	E of MD 3 and S of Riedel Rd.	Towers Branch	4	15

^C Under ACOE jurisdiction only, ^M Under MDE jurisdiction only, ^B Under both Corps and MDE jurisdiction

1-Floodflow Alteration, 2-Fish and Shellfish Habitat, 3-Sediment/Toxicant Retention, 4-Nutrient Removal, 5-Sediment Stabilization, 6-Wildlife Habitat, 7-Uniqueness/Heritage, 8-Visual Quality/Aesthetics, 9-Groundwater Recharge/Discharge

**Table III-10
Summary of Waters of the U.S.**

Waters of the U.S.	Location	Hydrology	Other Descriptors	Figure No.
Patuxent River ^B	Flows under MD 3	NW to SE under MD 3	State Scenic River	12
Little Patuxent River ^B	Confluence with Patuxent River 600 feet upstream from MD 3	Generally NW to SE	40-80 feet wide, abundant fish population	12
White Marsh Branch ^B	Southern portion of the study area	Western limits of Study Area to Patuxent River	four to ten feet wide with perennial flow	11
Waters A ^B	Near Patuxent River Road and MD 450	Flows south along MD 3 and outlets into Wetland 1	Small intermittent tributary, 3-6 feet wide	10
Waters 1 and 2 ^B	East of Old Crain Drive	Both streams flow under MD 3 toward Patuxent River	Five feet wide and 4-10-foot high banks	10
Waters 3 ^B	South of Belair and West of MD 3	Flows east into a concrete channel	Tributary to the Patuxent River, 3-4 feet wide	10
Waters 4 ^B	East of MD 3 and drains from south	Drains directly into Waters 5	Narrow ephemeral swales with steep side slopes, located within a forested area	11
Waters 5 ^B	Traverses the Study Area from west of MD 3 through the median	flows east into the Patuxent River	5-7-foot wide perennial stream	11
Waters 6 ^B	East of MD 3 and drains from north	Drains directly into Waters 5	Narrow ephemeral swales with steep side slopes, located within a forested area	11
Waters 7 ^B	within the median of MD 3	Drains directly into Waters 5	Small, ephemeral swale, located within a forested area	11
Waters 8 ^B	east of MD 3 and drain from south and north	Drains directly into Waters 5	3-4 feet wide and feeds into Waters 5, located within a forested area	11
Waters 9 ^B	West of MD 3, before exit ramp to Belair Dr.	Swale that flows east toward the Patuxent River	Mostly located within a forested area, riprap and sandy channel bed within the Study Area. Flows under MD 3	10
Waters 10 ^B	Within the median and parallel to MD 3 N	Drains directly into Waters 5		11
Pond 1 ^B	Near intersection of MD 450 W and MD 3	Vernal Pool, part of Upper Patuxent River Watershed	Fringed with emergent wetland vegetation	11
Waters 13 ^B	Spans the entire width of the Study Area	Tributary to White Marsh Branch that flows in an easterly direction	Located within a wooded area. Severe erosion has occurred in portions of the stream	11
Waters 14 ^B	West of MD 3 SB	Drains north into White Marsh Branch	Linear 2-foot wide channel with a sand and gravel bed	11
Waters 15 ^B	East of MD 3 and north of Waters 16	Flows south and then under MD 3, connecting with Waters 16	Perennial, 15-foot wide sinuous gravel bed tributary of the Little Patuxent River	13

Waters of the U.S.	Location	Hydrology	Other Descriptors	Figure No.
Waters 16 ^B	Within the Crofton community	Flows east toward the Little Patuxent River	Perennial tributary to the Little Patuxent River. App. 50 feet of the stream is a concrete channel.	13
Waters 17 ^B	Parallels NB MD 3	Flows south into Waters 15	2-5-foot wide vegetated roadside drainage swale	14
Waters 18 ^B	North of MD 424 and west of MD 3	Flows north to the Little Patuxent River	Steep, eroded banks, app. 30 feet high, mostly within Patuxent River Park	14
Waters 19 ^B	West of MD 3 and just north of Patuxent River Park	Ephemeral tributary to the Little Patuxent River	20 feet wide with gradually sloping banks from 10 to 20 feet high	15
Waters 20 ^B	East of MD 3, across the median of MD 3, and then west of MD 3	Tributary to Towsers Branch, flowing west through the Study Area	Flows through a stormwater management pond east of MD 3. Heavily littered and disturbed.	15
Waters 21 ^B	North of Wellfleet Road	Flows from east of MD 3, across the median, and into Wetland 16 west of MD 3	Intermittent swale in Towsers Branch watershed. East of MD 3 the stream is 5-10 feet wide, and 3 feet wide across the median, heavily vegetated	16
Waters 22 ^B	Median of MD 3 just south of Wetland 18	Flows from an agricultural field east of MD 3, through the median, and then west of MD 3	Small swale tributary to Towers Branch, 1-2 feet wide, and banks less than one foot high.	16
Ponds 2, 3, and 4 ^M	Located within the median between Wetlands 18 and 19	Ponds are bermed	Within a wooded area of the Towsers Branch sub-watershed. Likely old farm ponds. Pond 2 has 2 small islands, Pond 4 has one large island. All 3 ponds appear to be at least 3 feet deep.	16
Waters 26 ^B	Parallel to southbound MD 3 within the median	Flows south, receiving hydrology from a stormwater management area	Ephemeral swale app. 2 feet wide	16
Waters 27 ^B	West of MD 3	Flows west into Towsers Branch, connected to Waters 26 and Wetland 19, within the median	Intermittent 4-foot wide swale	16
Waters 28 ^B	West of MD 3	Intermittent tributary to the 'left fork' Jabez Branch	50-foot wide forested riparian buffer exists adjacent to the stream	17
Waters 29 ^B	North of McKnew Rd.	Flows across the median from east to west, connecting with Waters 28	Intermittent swale with no channel banks in some areas	17
Waters 30 ^B	East of NB MD 3	Flows north into Waters 29	Small ephemeral roadside swale, small amounts of wetland vegetation	17
Waters 31 ^B	Northern extension of Waters 28	Tributary to the 'left fork' of Jabez Branch	Intermittent flow. Upstream portion is lined with concrete and riprap	17

Waters of the U.S.	Location	Hydrology	Other Descriptors	Figure No.
Waters 32 ^B	North of Annapolis Road	Flows from east to west, across the median, and connects with Waters 31	Considerable amount of trash in the channel	17
Waters 33 ^B	West of SB MD 3	Flows West through Wetland 2 into Little Patuxent River	Intermittent swale, same wetland vegetation, 10-30 feet wide	12

^C Under ACOE jurisdiction only, ^M Under MDE jurisdiction only, ^B Under both Corps and MDE jurisdiction

5. Floodplains

The FEMA Flood Insurance Rate Maps (FIRM) (panel # 0025, # 0026, # 0031, # 0035 for Anne Arundel County and # 0035 for Prince George's County) for the study area, located in Anne Arundel and Prince George's Counties, indicate that the 100-year floodplains of the Patuxent River, an unnamed tributary to the Patuxent River, and the Little Patuxent River and several of its tributaries, including Towsers Branch, exist within the study area. Floodplains for these waters cross MD 3 in four separate locations: at the southern limit of the study area at the intersection of Belair Drive and MD 3; at the intersection of MD 450 and MD 3; just north of the MD 450/MD 3 intersection; and just south of Johns Hopkins Road. The limits of the 100-year floodplain are shown on **Figures III-10 through III-17**.

The Patuxent and Little Patuxent floodplains crossing at the vicinity of the MD 450 intersections with MD 3 are the largest expanse of floodplain within the study area, spanning approximately 2,700 feet along existing MD 3. The Little Patuxent River floodplain parallels the west side of southbound MD 3 from approximately MD 450-west to MD 424, where the limits begin to move farther westward, away from the study area. The remaining three tributaries, an unnamed tributary to the Patuxent River, White Marsh Branch, and Towsers Branch all flow through culverts beneath MD 3. These floodplains are all less than 100 feet wide.

For additional information regarding floodplains within the study area refer to the **MD 3 Natural Environmental Technical Report**.

6. Terrestrial Habitat and Wildlife

To identify terrestrial ecological resources within the study area, existing land use and land cover were mapped on aerial photographs based on the Anderson Land Use Classification System (Anderson et al. 1976). Field reviews were conducted to confirm the assigned land use and land cover classifications of the mapped areas. Area limits and/or classifications were revised as necessary to reflect the current conditions encountered. Although a formal survey was not conducted, dominant vegetative species were noted within the forested areas.

The vegetative communities can be summarized into six general categories in the study area: cropland and pasture, orchards and nurseries, deciduous forests, coniferous forests, mixed deciduous/coniferous forests, and wetlands. A general discussion of the characteristics of these terrestrial areas is presented below.

a. Agricultural Land Cover

Cropland and Pasture

The northern portion of the study area contains two areas designated as cropland and pasture. One of these designated areas is a large active agricultural area located west of McKnew Road and is an active agricultural field. The other area designated as cropland and pasture is an active pasture located just outside the study area, south of MD 175 and west of MD 3.

Orchards and Nurseries

There is only one orchard or nursery area identified in the study area. This land cover area is located north of Saint Stephens Church Road and east of MD 3 and is a large active tree nursery.

b. Forests

Deciduous Forests

Mature deciduous forests are the most prevalent upland forests in the study area, most evident near the Patuxent River and Little Patuxent River and in the southern portion of the study area. In the southern portion of the study area, the canopy is typically dominated by tulip poplar (*Liriodendron tulipifera*), sweet gum (*Liquidambar styraciflua*), and mixed oaks including northern red oak (*Quercus rubra*), black oak (*Quercus velutina*), and white oak (*Quercus alba*). Other common species are black locust (*Robinia pseudoacacia*) and red maple (*Acer rubra*). From north of the Patuxent River to south of MD 424, the infrequent upland forests are dominated by American beech (*Fagus grandifolia*), mixed oaks, and paw paw (*Asimina triloba*). The northern portion of the study area has a mix of upland deciduous forests dominated by tulip poplar, sweet gum, and mixed oaks and some dominated by northern red oak, sycamore (*Platanus occidentalis*), and black locust.

Mixed Deciduous/Coniferous Forests

Just west of MD 3 and north of White Marsh Branch there is a forest dominated by white pine (*Pinus strobus*), red maple, and tulip poplar. A small, 10-year growth, mixed deciduous/coniferous forest is located west of MD 3 and is dominated by Virginia pine (*Pinus virginiana*) and tulip poplar.

Coniferous Forests

A small coniferous forest dominated by white pine is located just south of the project limits surrounding a stormwater management area. This is the only land cover designated as a coniferous forest in the study area.

c. Wetlands

Wetlands are located throughout the study area and are particularly prevalent along the floodplain of the Patuxent River. These wetlands are described in detail in Section 3.6 of the **MD 3 Natural Environmental Technical Report**.

d. Specimen Trees

Forests found in the study area were identified for their potential to support specimen trees. The State Forest Conservation Technical Manual defines a specimen tree as having a diameter at breast height (DBH) of 30 inches or greater. Refer back to **Figures III-10** through **III-17** for exact locations of the 143 specimen trees located within the study area. The forests and

specimen trees were identified and characterized as part of this study. Refer to the **MD 3 Natural Environmental Technical Report** for a complete listing of all specimen trees found within the study area and their corresponding DBH.

e. Observed Fauna

Fauna observed in the terrestrial habitats described above are common to areas settled and somewhat disturbed by human activity. Common reptiles and amphibians include the American toad (*Bufo americanus*), western chorus frog (*Psuedacris triseriata*), Fowler's toad (*Bufo woodhousei fowleri*), and eastern garter snake (*Thamnophis sirtalis sirtalis*). Birds that were commonly observed in the study area include American crow (*Corvus brachyrhychos*), great blue heron (*Ardea herodias*), cardinal (*Cardinalis cardinalis*), American robin (*Turdus migratorius*), blue jay (*Cyanocitta cristata*), red-winged blackbird (*Agelaius phoeniceus*), downy woodpecker (*Picoides pubescens*), sandhill crane (*Grus canadensis*), and wild turkey (*Meleagris gallopavo*). Commonly observed mammals in the study area include white-tailed deer (*Odocoileus virginiana*), cottontail rabbit (*Sylvilagus floridanus*), woodchuck (*Marmota monax*), gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), and deer mouse (*Peromyscus maniculatus*). Additionally, a great blue heron colony is located near the Patuxent River west and outside the study area along MD 3 as identified by the DNR, Wildlife and Heritage Service.

7. Aquatic Habitat and Wildlife

The DNR and MDE were contacted for existing data on fisheries. Available data from MBSS for streams within the study area were reviewed for years 1997 to 2000. Methodology for fish sampling and results are included in a previous discussion on water quality in this document. Captured fish were generally identified to species, counted, and examined for visible external pathologies or other abnormalities. Common fish that were captured included the blacknose dace (*Rhinichthys atratulus*), eastern mudminnow (*Umbra pygaea*), green sunfish (*Lepomis cyanellus*), brown bullhead (*Ameiurus nebulosus*), red fin pickerel (*Esox americanus*), bluespotted sunfish (*Enneacanthus gloriosus*), creek chub (*Semotilus atromaculatus*), common shiner (*Luxilus cornutus*), bluegill (*Lepomis macrochirus*), eastern Mosquitofish (*Gambusia holbrooki*), and pumpkinseed (*Lepomis gibbosus*).

8. Rare, Threatened, and Endangered Species

The US Fish and Wildlife Service (USFWS) and the DNR Wildlife and Heritage Service were contacted regarding the presence of rare, threatened, and endangered (RTE) species within the project area. According to the USFWS database, there are no federally proposed or listed endangered or threatened species known to occur within the study area as noted on pages **V-A-107 and V-A-109** in **Chapter V - Comments and Coordination** of this document. The DNR Wildlife and Heritage Service does however, have records for species of state status that have been known to occur within or in the vicinity of the study area.

The DNR records include the state rare primrose willow (*Ludwigia decurrens*), located near Priest's Bridge, the state endangered dense-flowered knotweed (*Polygonum densiflorum*) and the state endangered extirpated greenish-flowered pyrola (*Pyrola virens*) near the Patuxent River.

All of these species' habitats consist of wet areas, swamps, and bogs. The state endangered coville's phacelia (*Phacelia covelli*), typically found in low wooded areas along streams, has been recorded near the US 50/MD 3 intersection. A wooded species, sweet pinesap (*Monotropsis odorata*), is known to occur along the slopes on the southern end of Bacon Ridge Branch and the US 50/MD 3 intersection. There are also records of the state rare giant cane (*Arundinaria gigantea*), which is usually located in dense stands in low-lying, shady, moist to wet areas.

The endangered extirpated one-sided pyrola (*Orthilia secunda*), the hyssop-leaved hedge-nettle (*Stachys hyssopifolia*), the threatened featherbells (*Stenanthium gramineum*), and the endangered anglepod (*Matelea carolinensis*) have been recorded near the Patuxent River. The one-sided pyrola and the anglepod habitat include woods and thickets, while the hyssop-leaved hedge-nettle and the featherbells are found in areas of moist soils, and sometimes swamps. Records also indicate the state threatened single-headed pussytoes (*Antennaria solitaria*), which inhabit rich woods and clearings, is located near MD 450.

The narrow-leaved pinweed (*Lechea tenuifolia*) has an endangered extirpated state status and has been located near Jabez Branch in the Gambrills area. This species can usually be found in sandhills, flatwoods, and along the margins of ponds. Both the state endangered hoary frostweed (*Helianthium bicknelli*) and large-marsh St. John's-wort (*Traidenum tubulosum*) are known to occur near the Little Patuxent River. The hoary frostweed and the Smith's clubrush (*Scirpus smithii*) are also known to occur in the area of the MD 424/MD 3 interchange. The large-marsh St. John's-wort and the Smith's clubrush are both likely to be found along the marshes and shores of coastal areas, whereas the hoary frostweed is more likely to inhabit dry, sandy or serpentine soils, in areas of light shade or in open fields. The state endangered velvety sedge (*Carex vestita*), a species found in dry, sandy woods and clearings, and state threatened featherbells were noted to occur near MD 424.

Finally, the only non-plant species identified by the DNR are the endangered glassy darter (*Etheostoma vitreum*), and the state rare redbelly water snake (*Nerodia erythrogaster*). The glassy darter is recorded near the Little Patuxent River and the redbelly water snake is known to occur near MD 178. This snake usually inhabits aquatic areas, however, sometimes it can be found a great distance from water.

Species surveys were conducted in May 2003 and July 2003 within identified critical habitat areas and based on the appropriate times for identification (i.e. flowering months) for occurrence of these species. Environmental specialists spanned the identified critical habitat areas in transects to locate the species. Botanical taxonomic keys were used in the field to aid in species identification.

Consistent with spring flowering periods, the May field survey searched for coville's phacelia, sweet pinesap, giant cane, one-sided pyrola, single-headed pussytoes, redbelly water snake, narrow-leaved pinweed, and velvety sedge.

Within wetland and open water habitat, the surveys for rare, threatened, and endangered species were conducted concurrently with the April/May 2003 wetland delineations. However,

additional surveys of wetlands near the Patuxent River were conducted in May 2003, separate from the wetland delineation of that area, which had occurred in August 2002. The wetland habitats were surveyed for coville's phacelia, giant cane, redbelly water snake, and the narrow-leaved pinweed. Also during the May 2003 survey, upland forests and clearings were traversed for the presence of sweet pinesap, single-headed pussytoes, velvety sedge giant cane, and one-sided pyrola. All surveys were conducted on foot.

For the July survey, searches were conducted for primrose willow, giant cane, dense-flowered knotweed, greenish-flowered pyrola, one-sided pyrola, hyssop-leaved hedge-nettle, featherbells, anglepod, redbelly water snake, narrow-leaved pinweed, hoary frostweed, large marsh St. John's-wort, velvety sedge, and Smith's clubrush. Wetlands and open water habitat, uplands, open fields, and clearings were reviewed for these species. All surveys were conducted on foot. Results of the plant surveys did not indicate the presence of any of the state listed species of concern by the DNR. However, the appropriate habitat for all species exists within the study area.

Surveys for the glassy darter were conducted during the summer water quality sampling in June 2003. Fish were sampled using electrofishing equipment in all perennial streams. There were no glassy darters identified during the sampling. Results of the plant surveys did not indicate the presence of any of the state listed species of concern by the DNR. However, the appropriate habitat for all species exists within the study area. As previously noted, SHA will utilize best management practices during construction in order to provide stream habitat protection measures focusing on the minimization of sedimentation and water quality impacts to downstream areas.

In addition to these species of concern, the Wildlife and Heritage Service has identified a great blue heron colony located at Grays Ford Road. Also identified within or adjacent to the project is forested area containing Forest Interior Dwelling species (FIDS) habitat. Conservation of FIDS habitat as well as the great blue heron colony is strongly encouraged by the DNR. Several great blue herons were spotted near the Patuxent River throughout the May and July field survey periods.

D. HAZARDOUS MATERIALS/WASTE SITES

1. Methodology

The purpose of this assessment was to identify Recognized Environmental Conditions (RECs) relating to hazardous substances and petroleum products on the subject property and/or adjoining properties as defined by the American Society for Testing and Materials (ASTM). The assessment was performed in general conformance with the ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (E 1527 – 00); a title search of current and past property owners was not completed.

The following tasks were performed to complete this assessment:

- Background Studies / Existing Records Review
- Field Visit / Site Reconnaissance

- Site Inspection
- Impacts to Adjacent Properties, and
- Preparation of a Report that presents Results, Findings, Conclusions and Recommendations

Current and past uses of the land within the study area were established by reviewing available documents, reports, maps, photographs, and other sources of historic information. Interviews with persons knowledgeable about the study area were conducted as an additional source of information. Various State, Local and Federal agencies were contacted and assorted environmental databases and sources of information were reviewed to identify RECs, compliance enforcement actions, or investigations into hazardous materials or wastes associated throughout the study area.

A site reconnaissance was performed in May 2003 to assess certain properties identified by various governmental sources for evidence of current and/or past environmental concerns. Potential adverse impacts from surrounding areas were assessed by observing adjacent properties.

2. Historic Review and Regulatory Review

Inquiries and investigations were performed to assess the past usage of the study area as it relates to the likelihood of environmental impairment or hazardous materials.

Because the study area is so large, limited historical data were obtained and reviewed for this assessment. In accordance with ASTM, readily available historic documents were reviewed. No additional ownership information was available.

Historical aerial photography for the study area was reviewed for the years 1960, 1970, and 1980. These areas covered the portion of the study area in Prince George's County. Aerial photography, taken in 1998, was also reviewed as part of this assessment. SHA utilized the most recent 1998 aerial photographs while conducting the site reconnaissance of the study area on May 22, 2003. Following are observations from this review.

Development that Occurred Between 1970 and 1980

- MD 32 was under construction in 1970. The ramp south of the MD 3/I-97 interchange had not been constructed.
- Some commercial development occurred along MD 3.
- A large BGE facility was started in 1970 and completed by 1980, located on farmland off Waugh Chapel Road.
- The Crofton Mews development was constructed between 1970 and 1980.
- East of MD 424 was largely farming with very light development that only increased slightly by 1980.
- The Crofton "triangle" was developing in 1970, and a large amount of residential development occurred in this area between 1970 and 1980.

Development that Occurred Between 1980 and 1995

- East and west along MD 175, several low-density residential developments occurred after 1980 on small farms.
- The area between MD 32 and MD 175 saw an increase in commercial development and residential development west of Sappington Station Road.
- Additional commercial development occurred along MD 3.
- Sand and gravel operations at existing facilities expanded between 1980 and 1995.
- Residential development within the Crofton “triangle” was essentially completed by 1995. There was a fairly consistent and constant increase in growth from 1970 to 1980, and through to 1995.
- Expansion of the wastewater treatment plant located north of MD 450 and west of MD 3 had started in 1980 and was mostly completed in 1995. Some commercial development had occurred in this area by 1995.
- Generalizations:
 - South of MD 32/MD 3, a number of small farms were converted to single-family residential subdivisions.
 - Commercial development grew within the median of MD 3.
 - In 1970 the largest residential developments within the Study Area were Bowie, Crofton (“triangle”), and Odenton, south of MD 175. By 1980, these were still the dominant clusters of residential housing, but there were slight increases in development in these areas as well as new subdivisions. By 1995, residential development has greatly increased with much less farming and more commercial development.

a. Federal and State Regulatory Agency Database Review

Information reviewed was gathered from several environmental databases through Environmental Data Resources, Inc. (EDR), of Southport, Connecticut, to evaluate whether activities on or near the study area have the potential to create an REC. EDR reviews databases compiled by federal, state, and local governmental agencies in accordance with the minimum search distances recommended by the ASTM standards. The complete list of databases reviewed by EDR are included in the October 2003, **MD 3 Initial Site Assessment Report**. It should be noted that this information is reported as provided by various government databases and has not been verified as to the accuracy or completeness of information. However, the use of and reliance on this information is a generally accepted practice in the conduct of environmental due diligence assessments. The databases searched and the information obtained is summarized in the following sections.

The study performed by EDR identified all available local, state, and federal government records within a half-mile of both east and west of MD 3 along the study area. The databases included in the study are listed in the October 2003, **MD 3 Initial Site Assessment Report**.

Based on a review of the databases searched by EDR, the sites that have been identified within applicable ASTM search distances are discussed in the following subsections.

Federal ASTM Standard

The Environmental Protection Agency (EPA) maintains a Resource Conservation and Recovery Act (RCRA) database that includes selected information on sites that generate, store, treat, or dispose of hazardous waste, as defined in the RCRA. Within the Federal ASTM Standard search distance, 14 Resource Conservation and Recovery Information Systems (RCRIS) sites were identified. All of these RCRIS sites are small quantity generators and no violations were listed.

A review of the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database has revealed one CERCLIS site, the Belair Bowie Landfill approximately 0.25 mile from the study area. CERCLIS sites are either proposed for or on the National Priorities List (NPL) and sites that are in the screening and assessment phase for possible inclusion on the NPL.

State ASTM Standard

MDE maintains an Underground Storage Tank (UST) database. Review of sites reported in this database revealed 23 sites where at least one UST is registered within the applicable ASTM search distance. Sixty-four Oil Control Program Cases (OCPCASES) were reported in the study area. OCPCASES are cases monitored by the Oil Control Program of the MDE. These cases may be associated with leaking underground storage tanks and other below ground releases, leaking above ground storage tanks, spill events, and facility inspections pursuant to a report of a suspected leak or spill.

The State Hazardous Waste Site (SHWS) list, also maintained by the MDE, is equivalent to the CERCLIS database maintained by the EPA. The Belair Bowie Landfill is the only SHWS site identified in the study area.

A review of the Solid Waste and Recycling Facilities (SWRCY) database maintained by MDE revealed that there are four SWRCY sites within the study area.

Federal ASTM Supplemental

Sixteen sites included in the Facility Index System (FINDS) were located within the study area. Two reported sites, both in the same location, were reported in the Hazardous Materials Incident Report System (HMIRS). The HMIRS database contains lists of hazardous material spill incidents reported to the MDE or the Department of Transportation.

State or Local ASTM Supplemental

In 1999, the MDE ceased adding new sites to its Recovery Sites Database. Therefore, current Leaking Underground Storage Tanks (LUST) sites are contained in the OCPCASES database. There were eight Historical UST sites and five Historical LUST sites located within the study area.

EDR Proprietary Historical Databases

No coal gas sites were identified in the study area.

Orphan Summary

A total of 37 sites in the RCRIS, FINDS, UST, HIST. UST, and HIST LUST databases were listed as “orphaned” (sites with inadequate address information) by EDR. These orphaned sites occurred in seven zip codes, i.e., Bowie, Crofton, Crownsville, Gambrills, Millersville, Mitchellville, and Odenton. Thirty of the sites identified as “orphaned” had addresses or zip codes outside of the study area, and were not investigated further. Six LUST sites and one RCRIS-SQG site were not identified during the site reconnaissance and thus were not included in this ISA investigation.

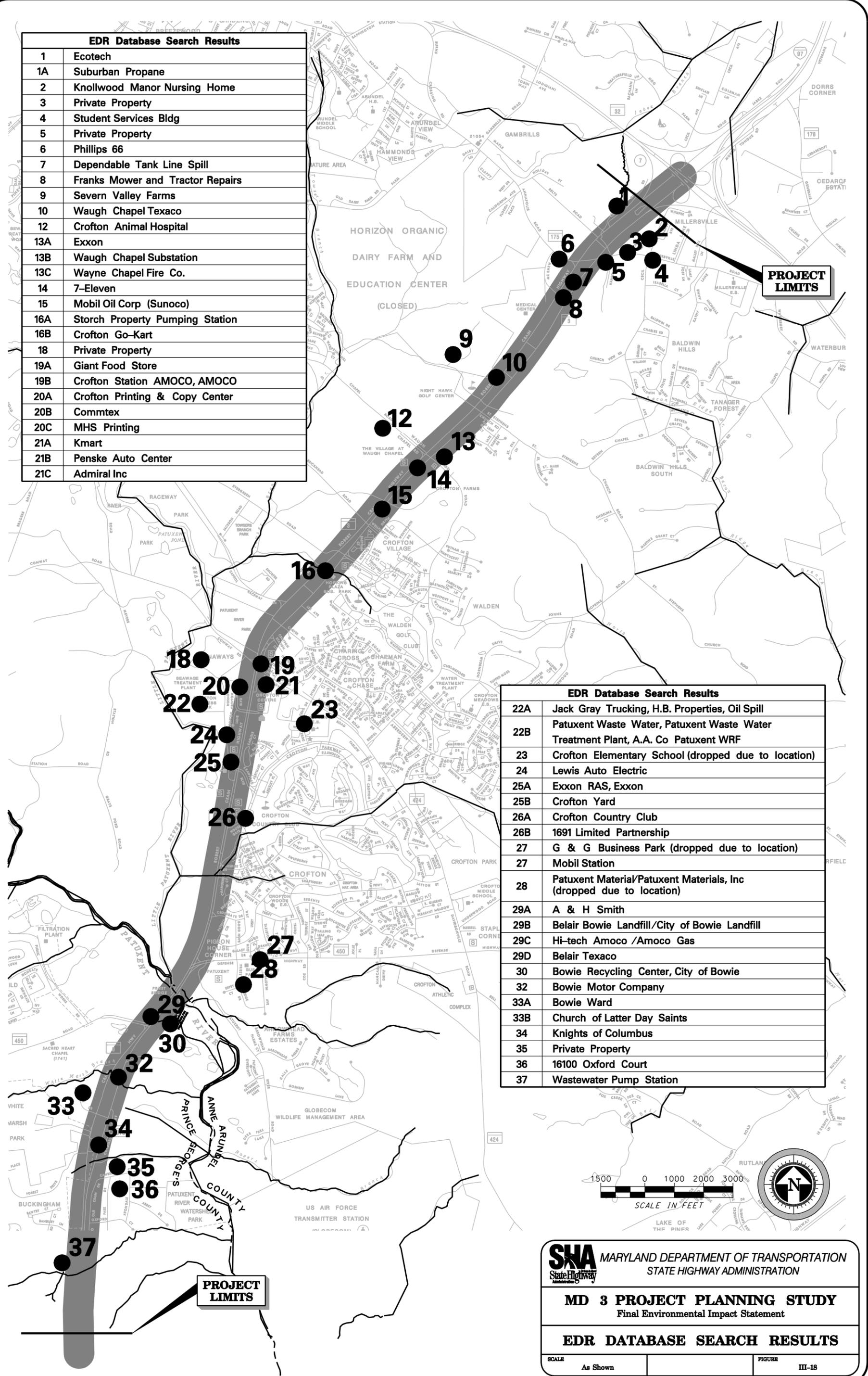
3. Site Reconnaissance and Potential Site Hazard Ranking

A reconnaissance of the subject properties was conducted in May 2003 to observe and document the present environmental conditions of the study area. In addition, to the extent that it was accessible, a "drive-by" survey was conducted of the site vicinity to observe and document the nature of neighboring properties. The EDR database search identified 52 individual addresses in the study area that were reviewed during the field survey for potential environmental concerns. Several of the 52 sites were duplicates having been named differently but having the same address. The duplicate sites with multiple names were combined and sites were listed by address. Three more sites, Crofton Elementary School, G & G Business Park and Patuxent Materials, were located a considerable distance from the study area and were eliminated from further study. One site, Suburban Propane, was added as a result of the field reconnaissance. Ultimately, 51 sites were identified and included as having potential for hazardous materials. The general locations of the 51 field verified sites are shown on **Figure III-18**.

The EDR database list was then further refined (duplicates and sites outside the study area were removed), and 48 sites were identified for detailed reviewed for potential environmental concerns and ranked into four categories: “high”, “medium/high”, “medium”, and “low” of potential for environmental concern. The criteria for this ranking are presented in **Table III-11**. Additional details on all 48 sites identified are available in the October 2003, **MD 3 Initial Site Assessment Report**.

EDR Database Search Results	
1	Ecotech
1A	Suburban Propane
2	Knollwood Manor Nursing Home
3	Private Property
4	Student Services Bldg
5	Private Property
6	Phillips 66
7	Dependable Tank Line Spill
8	Franks Mower and Tractor Repairs
9	Severn Valley Farms
10	Waugh Chapel Texaco
12	Crofton Animal Hospital
13A	Exxon
13B	Waugh Chapel Substation
13C	Wayne Chapel Fire Co.
14	7-Eleven
15	Mobil Oil Corp (Sunoco)
16A	Storch Property Pumping Station
16B	Crofton Go-Kart
18	Private Property
19A	Giant Food Store
19B	Crofton Station AMOCO, AMOCO
20A	Crofton Printing & Copy Center
20B	Commtext
20C	MHS Printing
21A	Kmart
21B	Penske Auto Center
21C	Admiral Inc

EDR Database Search Results	
22A	Jack Gray Trucking, H.B. Properties, Oil Spill
22B	Patuxent Waste Water, Patuxent Waste Water Treatment Plant, A.A. Co Patuxent WRF
23	Crofton Elementary School (dropped due to location)
24	Lewis Auto Electric
25A	Exxon RAS, Exxon
25B	Crofton Yard
26A	Crofton Country Club
26B	1691 Limited Partnership
27	G & G Business Park (dropped due to location)
27	Mobil Station
28	Patuxent Material/Patuxent Materials, Inc (dropped due to location)
29A	A & H Smith
29B	Belair Bowie Landfill/City of Bowie Landfill
29C	Hi-tech Amoco /Amoco Gas
29D	Belair Texaco
30	Bowie Recycling Center, City of Bowie
32	Bowie Motor Company
33A	Bowie Ward
33B	Church of Latter Day Saints
34	Knights of Columbus
35	Private Property
36	16100 Oxford Court
37	Wastewater Pump Station



SNA MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 3 PROJECT PLANNING STUDY
Final Environmental Impact Statement

EDR DATABASE SEARCH RESULTS

SCALE	As Shown	FIGURE	III-18
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**Table III-11
Hazardous Site Ranking Criteria**

High	<ul style="list-style-type: none"> • Industrial facilities • Landfills • Gasoline stations with documented subsurface releases or open UST OCPCASES • Remediation system in place • Auto repair facilities • Pits and lagoons • Paint manufacturing facilities • Dry cleaners • Above-ground storage tanks with a large amount of staining • PCB containing transformers with major stains • USTs containing gasoline, jet fuel, kerosene, diesel fuel, waste oil or solvents • Surface dumps with drums or other hazardous materials
Medium /High	<ul style="list-style-type: none"> • In use USTs containing petroleum or other hazardous substances • Mounds • Surface dumps with empty drums or other materials of concern • Above-ground storage tanks with several medium stains • PCB containing transformers • Out of use UST, but still in place minor stains
Medium	<ul style="list-style-type: none"> • Small amounts of surface staining • Stressed vegetation • Slightly discolored water • Unmarked transformers • PCB containing transformers, no staining • Large surface dumps containing household wastes • Above-ground storage tanks with a few small stains or no staining, but of questionable integrity • UST OCPCASES that are closed and UST that are out of use
Low	<ul style="list-style-type: none"> • Small surface dumps containing household wastes • Septic systems • Non-PCB containing transformers with no stains • Above-ground storage tanks (relatively new) with no staining or evidence of poor structural integrity • Sites listed within the applicable ASTM search distance, that are deemed to have a low potential to negatively impact the proposed project because of the distance from the listed site to the proposed project • Sites listed as SQG or LQG with no violations

The proposed project will require acquisition of right-of-way that includes several properties that contain documented potentially hazardous substances. Fifteen sites were ranked in the high and medium-high potential for environmental category, eight sites were ranked in the medium hazard potential category, and 25 sites were ranked in the low hazard potential category. The following table (**Table III-12**) identifies each site that was recorded in the EDR search and field reconnaissance, the database where the site is listed (if known), as well as the potential environmental concern rating for the proposed project. Further discussion of certain sites and potential hazards associated with those sites ranked in the high or medium high categories are discussed in **Chapter IV – Environmental Consequences, Section D – Hazardous Materials/Waste Impacts.**

**Table III-12
Site Hazard Ranking**

Map ID (Figure III-19)	Site Name	Database Listing	Potential for Environmental Concern			
			High	Medium/ High	Medium	Low
1	Ecotech	SWRCY				X
1A	Suburban Propane	Not in Database Listing				X
2	Knollwood Manor Nursing Home	OCPCASES -Closed				X
3	Private Property	OCPCASES – Closed, UST - Out of use				X
4	Student Services Bldg	OCPCASES - Closed				X
5	Private Property	OCPCASES - Open				X
6	Former Phillips 66	Multiple UST - Out of use		X		
7	Dependable Tank Line Spill	OCPCASES - Closed				X
8	Franks Mower and Tractor Repairs	OCPCASES - Closed			X	
9	Severn Valley Farms	OCPCASES - Closed				X
10	Waugh Chapel Texaco	Multiple UST – In use UST – Out of use, Historical LUST – Closed 24-hour remediation system	X			
12	Crofton Animal Hospital	OCPCASES - Closed			X	
13A	Exxon	Multiple UST – Out of use Multiple UST – In use		X		
13B	Waugh Chapel Substation	UST – Out of use			X	
13C	Waugh Chapel Fire Co.	Multiple UST – Out of Use			X	
14	7-Eleven	Multiple UST – In use, OCPCASES - Closed			X	
15	Mobil Oil Corp	RCRIS-SQG No violations, FINDS, Multiple UST		X		
16A	Storch Property Pumping Station	UST – Out of use			X	
16B	Crofton Go-Kart	UST –In use		X		
18	Private Property	OCPCASES – Closed			X	
19A	Giant Food Store	UST – Out of use				X
19B	Crofton Station AMOCO, AMOCO	OCPCASES Closed, Multiple UST In use, RCRIS-SQG - No violations FINDS	X			
20A	Crofton Printing & Copy Center	RCRIS-SQG - No violations FINDS				X
20B	Commtext	RCRIS-SQG - No violations FINDS				X
20C	MHS Printing	RCRIS-SQG - No violations FINDS				X
21A	Kmart	UST In use, UST – Out of use, Historical UST In use				X
21B	Penske Auto Center	RCRIS-SQG - No violations, FINDS				X

Map ID (Figure III-19)	Site Name	Database Listing	Potential for Environmental Concern			
			High	Medium/ High	Medium	Low
21C	Admiral Inc	RCRIS-SQG - No violations, FINDS				X
22A	Jack Gray Trucking, H.B. Properties, Oil Spill	RCRIS-SQG - No violations, FINDS, OCPCASES – Closed, OCPCASES – Closed, Historical UST – In use, OCPCASES – Closed, OCPCASES – Closed		X		
22B	Patuxent Waste Water Treatment Plant, A.A. Co Patuxent WRF	UST Out of use, Multiple UST In use, OCPCASES – Closed, RCRIS-SQG - No violations, FINDS, Historical UST				X
24	Lewis Auto Electric	RCRIS-SQG - No violations, FINDS				X
25A	EXXON RAS, EXXON	RCRIS-SQG - No violations, FINDS, Multiple UST – In use	X			
25B	Crofton Yard	UST – In use, Multiple UST – Out of use		X		
26A	Crofton Country Club	OCPCASES Closed, Historical UST Removed				X
26B	1691 Limited Partnership	UST – Out of use		X		
27	Mobil Station	OCPCASES – Closed				X
29A	Private Property	OCPCASES – Closed				X
29B	Belair Bowie Landfill / City of Bowie Landfill	Historical LUST – Open, CERCLIS, FINDS, SHWS	X			
29C	Hi-tech Amoco / Amoco Gas	Multiple UST In use, Multiple UST Out of use, RCRIS-SQG No violations, FINDS		X		
29D	Belair Texaco, (currently Belair SHELL)	Multiple Historical UST, FINDS, OCPCASES Closed Multiple UST In use, Multiple UST Out of use		X		
30A	Bowie Recycling Center, City of Bowie, City of Bowie	OCPCASES –Closed, OCPCASES – Open			X	
32	Bowie Motor Company	RCRIS-SQG - No violations, FINDS	X			
33A	Bowie Ward	Historical UST – In use				X
33B	Church of Latter Day Saints	UST – Out of use				X
34	Knights of Columbus	UST – In use, Historical UST – In use				X
35	Private Property	OCPCASES –Closed				X
36	16100 Oxford Court	HMIRS				X
37	Wastewater Pump Station	UST – In use, Historical UST – In use		X		

E. AIR QUALITY

The Federal Clean Air Act (CAA) of 1970 established the National Ambient Air Quality Standards (NAAQS) to protect public health, welfare, and the environment. The pollutants that have NAAQS are carbon monoxide (CO), lead (Pb), nitrogen oxides (NO_x), ozone (O₃), particulate matter (PM), and sulfur oxides (SO_x). The Clean Air Act Amendments of 1990 (CAAA) and the Final Conformity Rule (40 CFR Parts 51 and 93) direct the EPA to implement environmental policies and regulations that will ensure acceptable levels of air quality for these and other pollutants of concern. The General and Transportation Conformity Rules of the CAA require that surface transportation and transit plans, programs, and projects conform to the State Implementation Plan (SIP), a comprehensive plan for attaining and maintaining the NAAQS. It is stated in the amendments “No federal agency may approve, accept or fund any transportation plan, program or project unless such plan, program or project has been found to conform to any applicable SIP in effect under this act.” Conformity to the SIP requires that the proposed project will not:

- Cause or contribute to any new violation of any standard in any area;
- Increase the frequency or severity of any existing violation of any standard in any area; or
- Delay timely attainment of any standard or required interim emission reductions or other milestones in any area.

Therefore, this air quality analysis is designed and conducted to evaluate the impacts of the MD 3 project on the NAAQS and the SIP. Further, both the Prince George’s and Anne Arundel County portions of the study are located within PM2.5 nonattainment areas.

Pollutants primarily caused by motor vehicles that are relevant to this analysis based on their attainment status include carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NO_x), and ozone (O₃). While HC and NO_x emissions play an important role in the formation of ozone, they are considered “mesoscale” or regional pollutants, and were not analyzed in this analysis. The air quality impact analysis consisted of the dispersion modeling of CO emissions at local “hot-spots” along the project. A “hot-spot” is considered an area where the most congested traffic volumes and roads may produce high concentrations of CO, based on meteorological conditions and the configuration of the roadway. Three signalized intersections were identified with the highest Level of Service (LOS) and analyzed for “hot spot” analysis. The intersections included in this analysis are MD 450 Option A for Alternate 5 Modified, MD 175 Option A for Alternate 3, and MD 424 Option A for Alternate 3. The air quality analysis methodology conformed to SHA and EPA guidance and used the MOBILE6 version of the U.S. EPA MOBILE emissions model (MOBILE6.2.03 is the current version) and the corresponding CAL3QHC atmospheric dispersion model. The results of this analysis are included in **Chapter IV - Environmental Consequences, Section E – Air Quality** of this document.

F. NOISE

FHWA has established procedures and criteria to determine and evaluate impacts associated with vehicular use of roadways. Traffic noise is the sound generated by automobiles, trucks and other

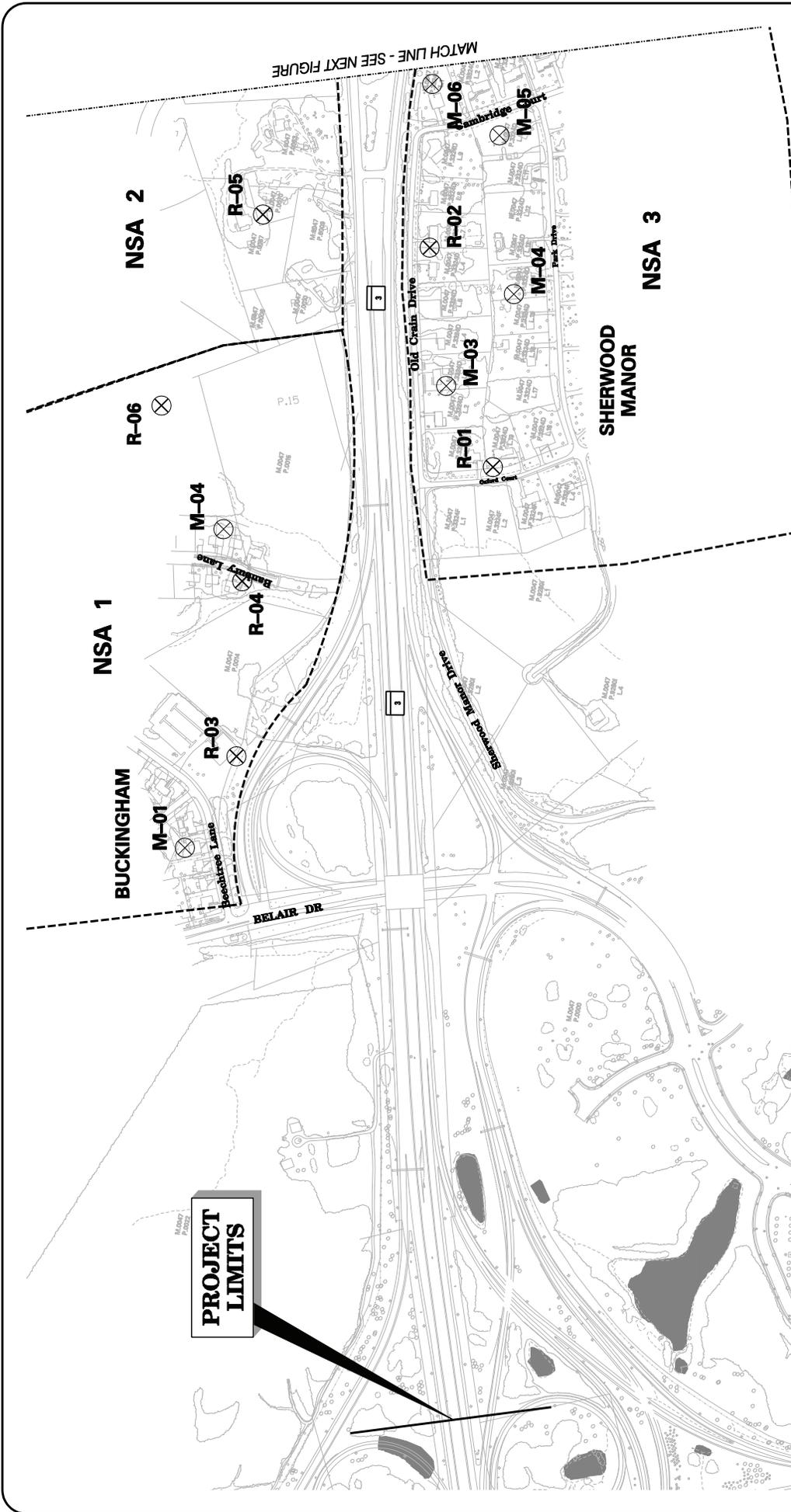
motorized vehicles and is composed of tire, engine, and exhaust noise. The primary problems associated with highway noise are activity interference and general annoyances. Therefore, it is the goal of abatement programs to minimize these impacts to exterior land uses.

The decibel is the basic unit of sound measurement. Decibels are units that represent relative acoustic energy intensities. Because the range of energy found throughout the spectrum of normal hearing is so wide, the numbers necessary to define these levels must represent huge numerical variations. To compensate for this wide range of numbers, a base 10 logarithmic scale is used to compress the number range to a more manageable size.

Sounds heard in the environment usually consist of a range of frequencies, each at a different level. The method of correlating human response to equivalent sound pressure levels at different frequencies is called “weighting.” The A-weighted equivalent sound level (Leq) is the descriptor used most frequently in highway noise analyses, because this scale closely approximates the frequency response of the human ear. The Leq is the equivalent steady state sound level which represents the mean energy or sound intensity level for a given time period. This is the descriptor, generally abbreviated as dBA, that was used in this highway noise analysis.

A total of 20 noise sensitive areas (NSA) have been identified by SHA and verified through field visits. The NSAs include single family residences, multi-family residences, and mixed-use residential and commercial areas. The NSAs for the study area, including the location of monitored and virtual receiver locations are displayed in **Figures III-19 through III-26**. See the **MD 3 Highway Noise Analysis Technical Report** for additional information and detailed description of the NSAs.

Using the FHWA’s Traffic Noise Prediction Model (TNM), the receiver sites within the Study Area were analyzed for each alternate. A summary of the existing noise levels by receiver is shown in **Table III-13**.



LEGEND

- NSA BOUNDARY
- RECEIVER LOCATIONS
- R-01** MONITORED
- M-01** MODELED

KEY PLAN

SCALE IN MILES

SMA MARYLAND DEPARTMENT OF TRANSPORTATION
Subdivision STATE HIGHWAY ADMINISTRATION

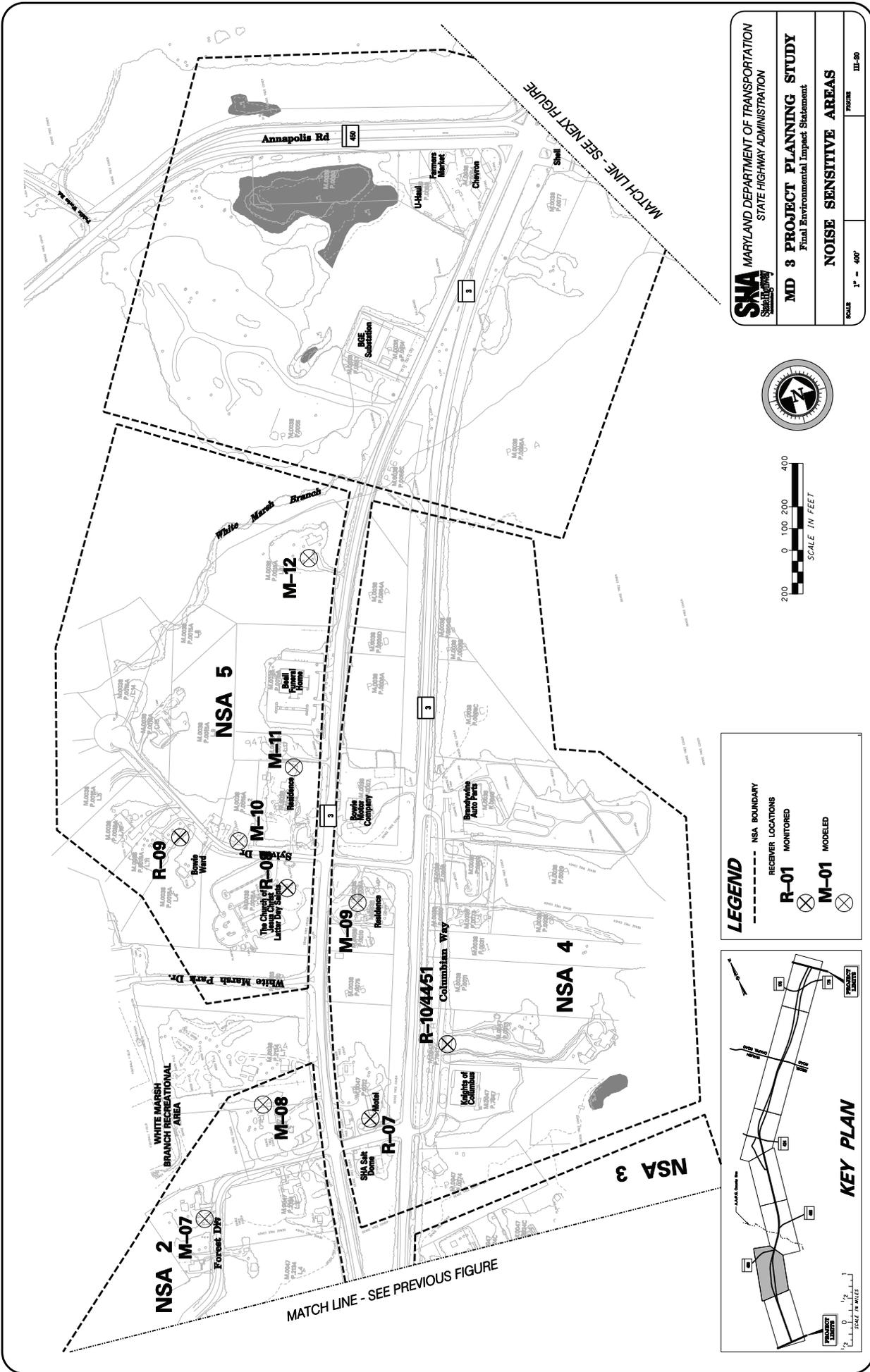
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NOISE SENSITIVE AREAS

SCALE 1" = 400'

FIGURE III-9





SNA MARYLAND DEPARTMENT OF TRANSPORTATION
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NOISE SENSITIVE AREAS

SCALE 1" = 400'

FIGURE III-30



LEGEND

- NSA BOUNDARY
- RECEIVER LOCATIONS
- ⊗ MONITORED
- ⊗ MODELED

KEY PLAN

SCALE IN MILES

MATCH LINE - SEE PREVIOUS FIGURE

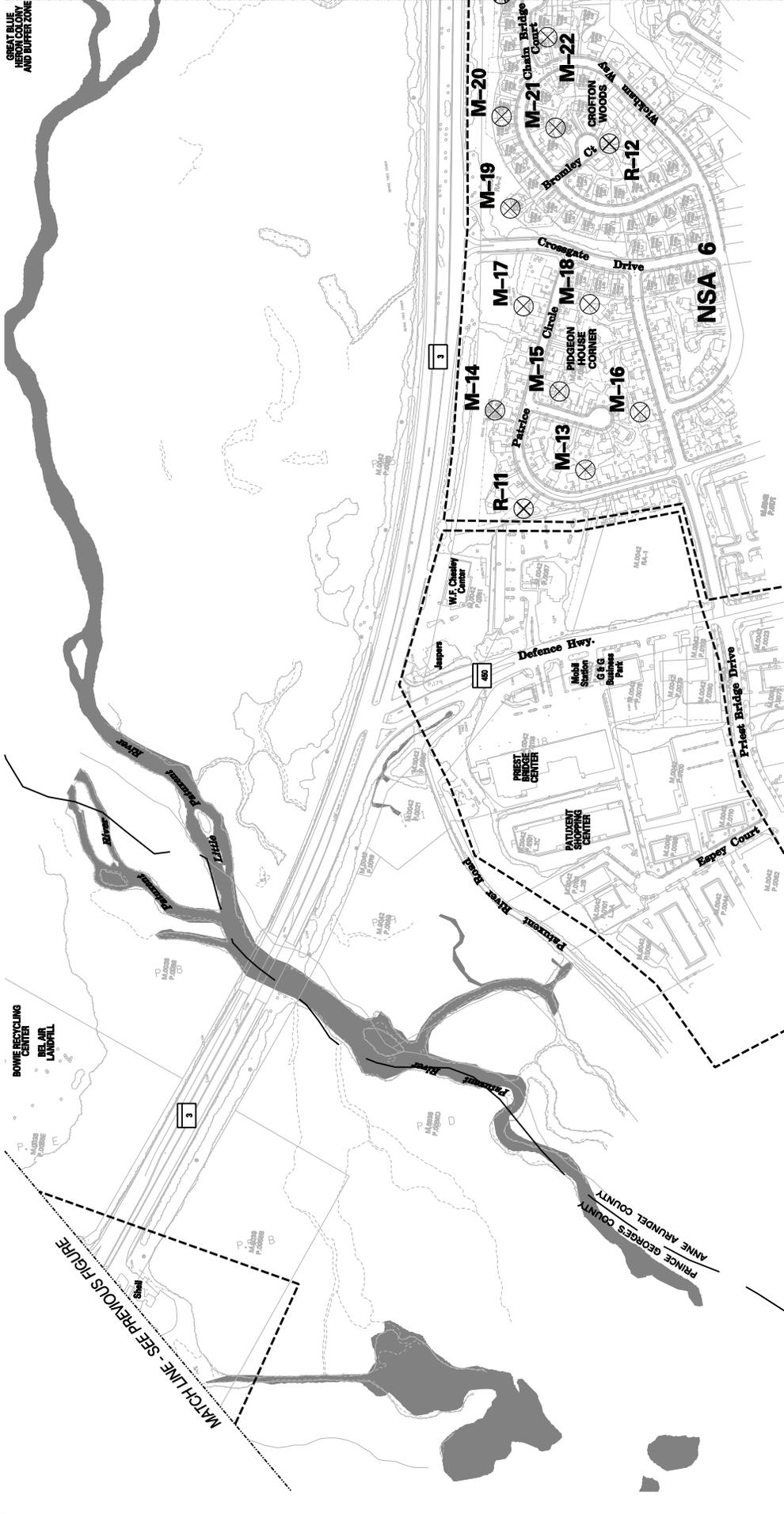
MATCH LINE - SEE NEXT FIGURE

GREAT BLUE HERON COLONY AND BUTTERFLY LAKE

BOWNE RECYCLING CENTER
BEL AIR LANDFILL

MATCH LINE - SEE PREVIOUS FIGURE

MATCH LINE - SEE NEXT FIGURE



SMA MARYLAND DEPARTMENT OF TRANSPORTATION
Subdivisions STATE HIGHWAY ADMINISTRATION

MD 3 PROJECT PLANNING STUDY
Final Environmental Impact Statement

NOISE SENSITIVE AREAS

SCALE 1" = 400'

FIGURE III-21

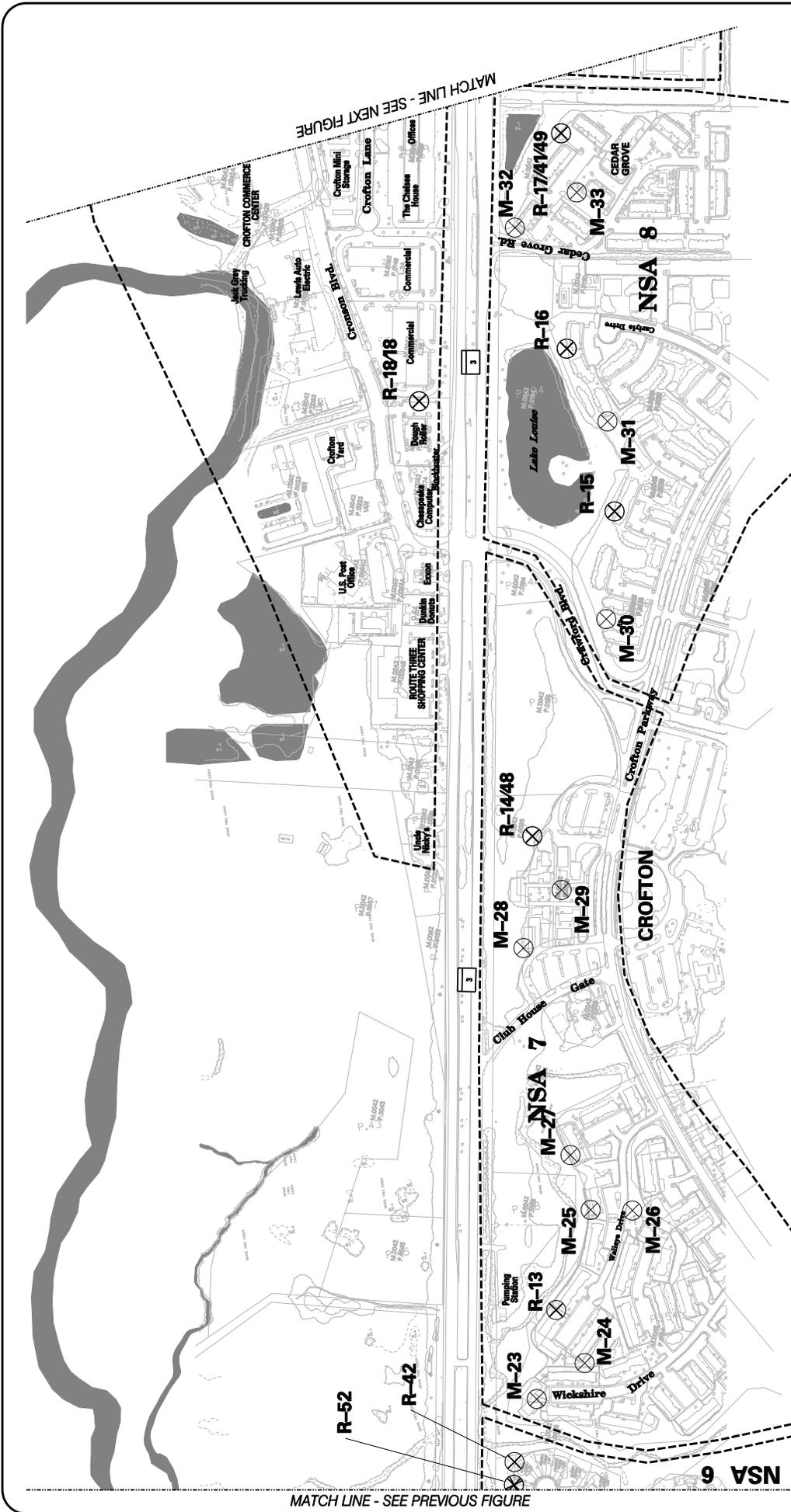


LEGEND

- NSA BOUNDARY
- RECEIVER LOCATIONS
- R-01 MONITORED
- M-01 MODELED

KEY PLAN

SCALE IN MILES



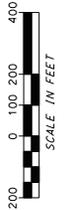
MATCH LINE - SEE NEXT FIGURE

MATCH LINE - SEE PREVIOUS FIGURE

SKA Maryland Department of Transportation
 State Highway Administration
MD 3 PROJECT PLANNING STUDY
 Final Environmental Impact Statement
NOISE SENSITIVE AREAS

SCALE 1" = 400'

FIGURE III-58

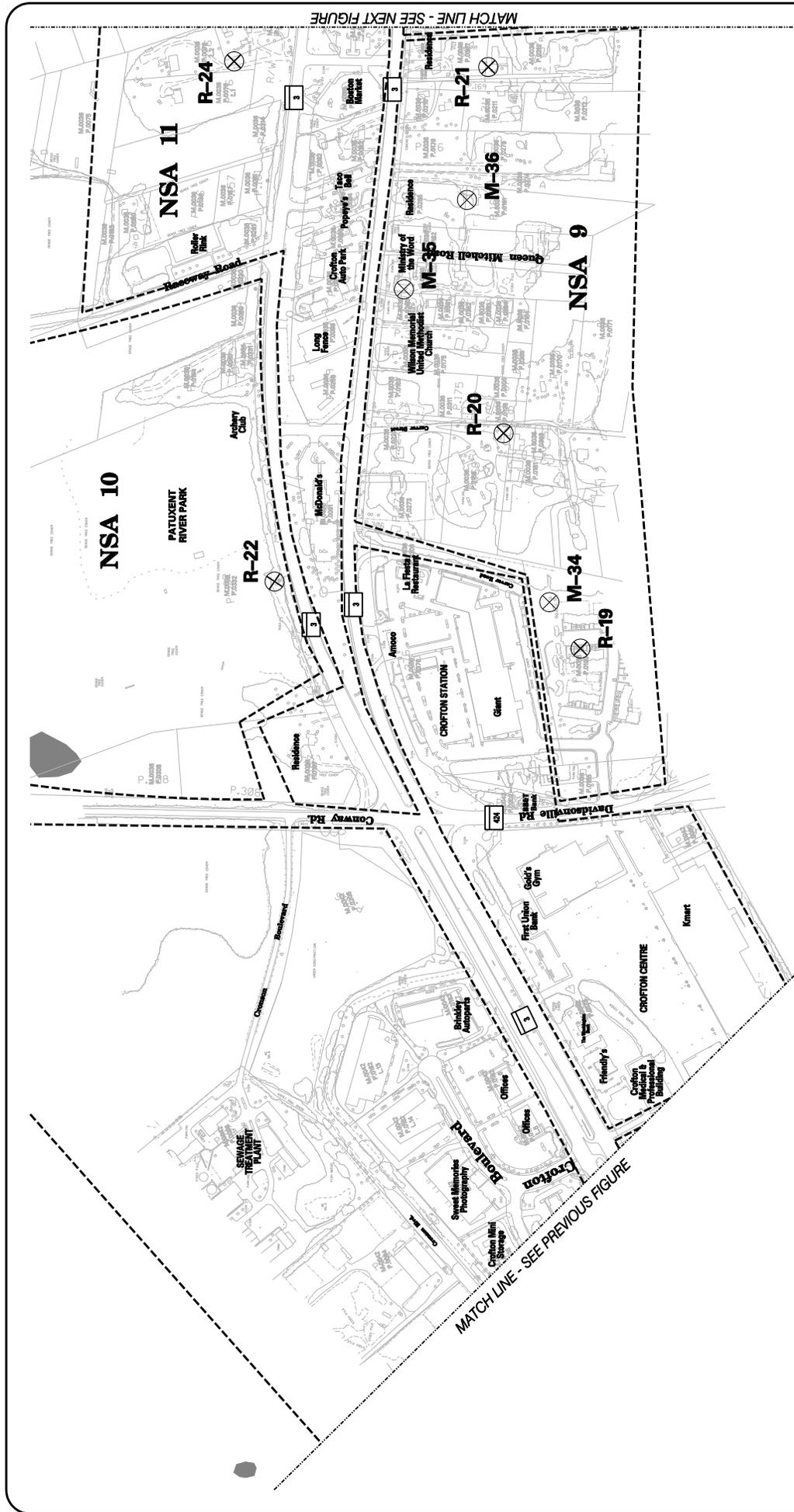


LEGEND

- NSA BOUNDARY
- RECEIVER LOCATIONS
- R-01 MONITORED
- M-01 MODELED

KEY PLAN

SCALE IN MILES



SHA MARYLAND DEPARTMENT OF TRANSPORTATION
 Subdivision STATE HIGHWAY ADMINISTRATION

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NOISE SENSITIVE AREAS

SCALE 1" = 400'

FIGURE III-28



LEGEND

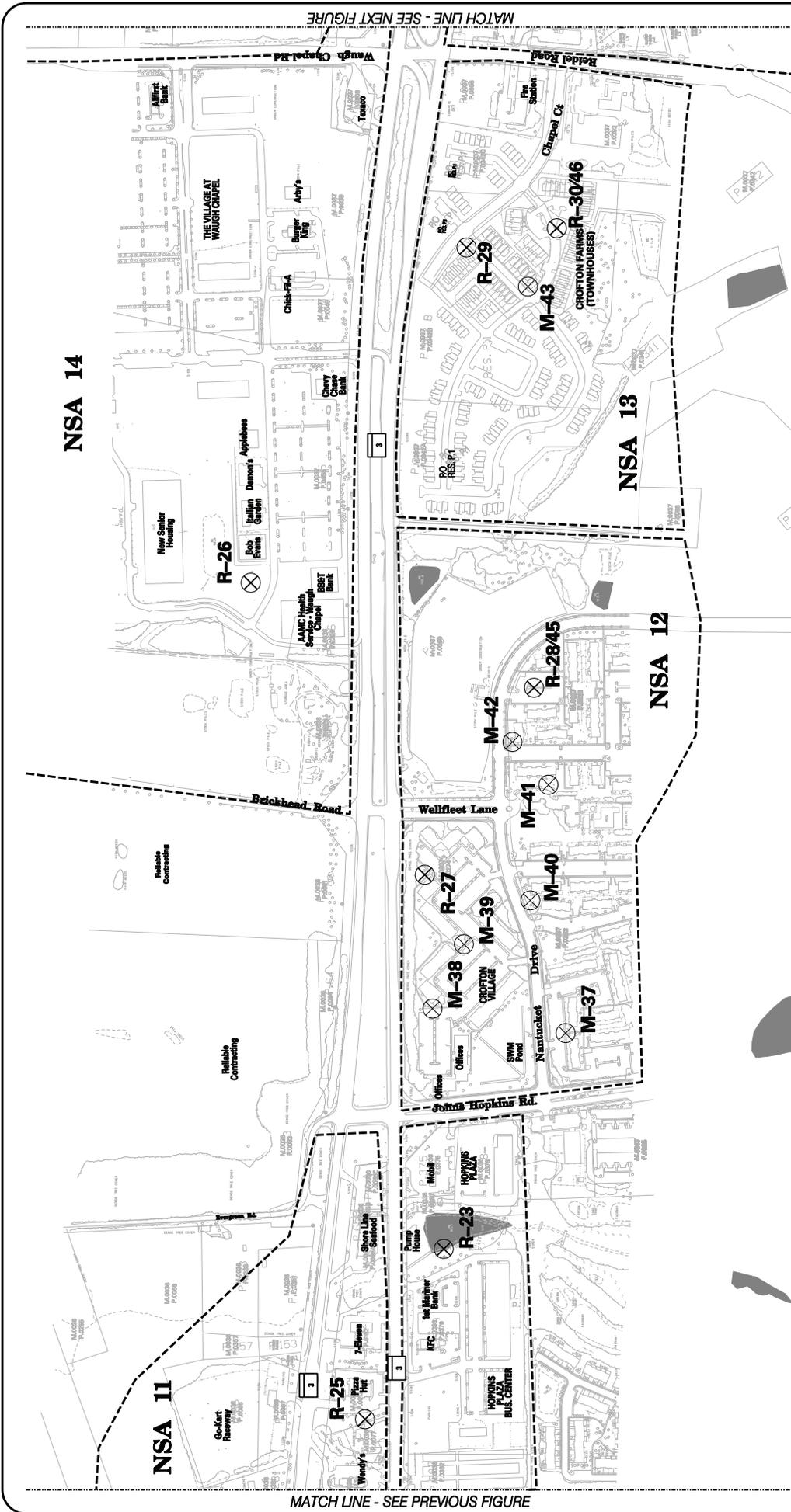
- NSA BOUNDARY
- RECEIVER LOCATIONS
- R-01 MONITORED
- M-01 MODELED

KEY PLAN

SCALE IN MILES

MATCH LINE - SEE NEXT FIGURE

MATCH LINE - SEE PREVIOUS FIGURE



MATCH LINE - SEE NEXT FIGURE

MATCH LINE - SEE PREVIOUS FIGURE

SMA MARYLAND DEPARTMENT OF TRANSPORTATION
 Subdivision STATE HIGHWAY ADMINISTRATION

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NOISE SENSITIVE AREAS

SCALE 1" = 400'

FIGURE III-24



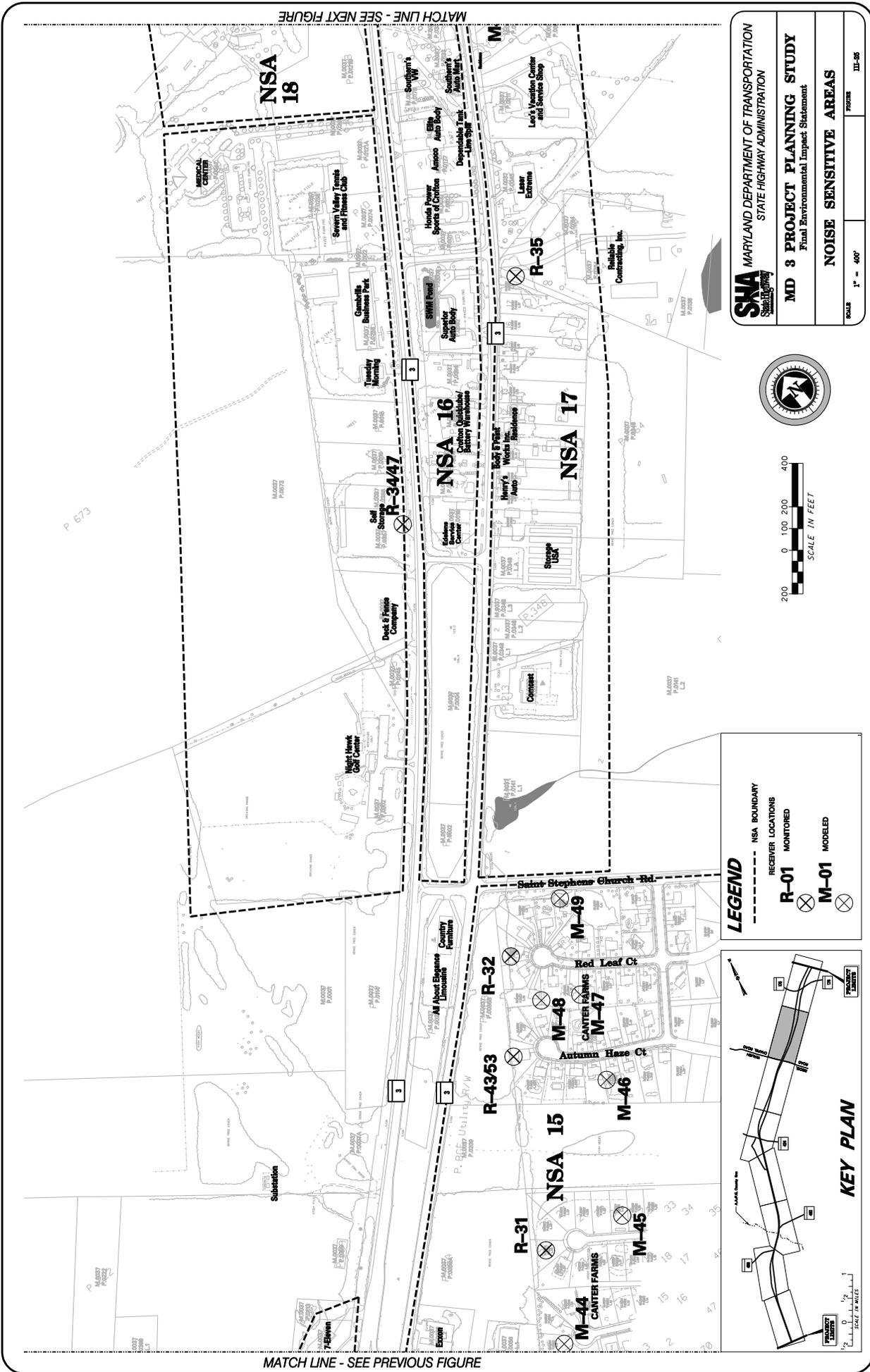
LEGEND

- NSA BOUNDARY
- RECEIVER LOCATIONS
- R-01 MONITORED
- M-01 MODELED

KEY PLAN

SCALE IN MILES

MATCH LINE - SEE NEXT FIGURE



MATCH LINE - SEE PREVIOUS FIGURE

MDA MARYLAND DEPARTMENT OF TRANSPORTATION
 Subdivision STATE HIGHWAY ADMINISTRATION

MD 3 PROJECT PLANNING STUDY
 Final Environmental Impact Statement

NOISE SENSITIVE AREAS

SCALE 1" = 400'

FIGURE III-36



LEGEND

- NSA BOUNDARY
- ⊗ RECEIVER LOCATIONS
- ⊗ MONITORED
- ⊗ M-01 MODELED

KEY PLAN

SCALE IN MILES

**Table III-13
Existing Noise Levels**

Receivers	Existing (dBA)
NSA 1	
R-03	63
R-04	56
R-06	50
M-01	57
M-02	54
NSA 2	
R-05	56
M-07	55
M-08	65
NSA 3	
R-01	59
R-02	64
M-03	59
M-04	56
M-05	60
M-06	70
NSA 4	
R-07	68
R-10/44/51	68
M-09	66
NSA 5	
R-08	67
R-09	59
M-10	62
M-11	67
M-12	67
NSA 6	
R-11	60
R-12	48
R-42/52	60
M-13	53
M-14	67
M-15	48
M-16	48
M-17	66
M-18	50
M-19	70
M-20	71
M-21	52
M-22	54

Receivers	Existing (dBA)
NSA 7	
R-13	64
R-14/48	67
M-23	59
M-24	56
M-25	60
M-26	53
M-27	61
M-28	68
M-29	58
NSA 8	
R-15	63
R-16	66
R-17/41/49	66
M-30	61
M-31	64
M-32	72
M-33	58
NSA 9	
R-19	58
R-20	58
R-21	60
M-34	58
M-35	69
M-36	60
NSA 10	
R-22	67
NSA 11	
R-24	64
R-25	67
NSA 12	
R-27	66
R-28/45	55
M-37	58
M-38	59
M-39	59
M-40	56
M-41	55
M-42	56
NSA 13	
R-29	61
R-30/46	55
M-43	60

Receivers	Existing (dBA)
NSA 14	
R-26	59
NSA 15	
R-31	56
R-32	64
R-43/53	63
M-44	57
M-45	56
M-46	57
M-47	57
M-48	60
M-49	61
NSA 16	
R-33	68
M-51	64
M-52	67
NSA 17	
R-35	68
R-36	69
M-50	72
M-53	67
M-54	62
NSA 18	
R-38	53
NSA 19	
R-39	59
R-40	68
M-57	55
M-58	41
M-59	58
NSA 20	
R-37	56
M-55	58
M-56	57

G. VISUAL AND AESTHETIC QUALITY

1. Existing Visual Character

The existing visual character of the study area in Prince George's County and Anne Arundel County is based on field assessments that were completed in 2008. The visual assessment addresses the visual quality of landforms and land cover, the visual character, and provides a description of visual resources.

MD 3 has different characteristics along its route as it passes through Prince George's and Anne Arundel Counties. The roadway is predominantly an open section roadway (no curbs) with two to three lanes in each direction. Some segments have additional auxiliary lanes to accommodate turning movements at the numerous intersections and access locations along the study area. The median varies in width from thirty feet to 450 feet and is comprised of a variety of grass, forest, residential, and business land uses. MD 3 passes through rural and densely wooded areas at its southern project limits in Prince George's County (**Photo III-1**) before transitioning to a suburban mixed commercial and residential development with a more open character (**Photo III-2**). The study area then transitions to a mature, wooded area with a rural character as it approaches the northern project limits (see **Photo III-3**). Paved shoulders and auxiliary lanes exist throughout the study area.



Photo III-1: Densely Wooded Rural Character, Southern Project Limits in Prince George's County



Photo III-2: Suburban Mixed Commercial and Residential area with Open Character, Anne Arundel County

The existing roadway alignment passes several distinctive neighborhoods and diverse land uses within the study area. MD 3 passes elements including interconnecting highways/interchanges, major and minor roadways, low, medium, and high-density residential areas, office and industrial parks, commercial areas, wetlands, rivers, forests and open space. The study area has experienced significant levels of residential and commercial growth over the years, and there are several areas planned for further development.

A number of suburban neighborhoods and communities, serviced by commercial and employment centers exist within the study area. MD 450 and MD 175 are important regional commuter routes connecting Annapolis, Baltimore and Washington DC. MD 3 connects directly to I-97 and US 50. The study area is predominantly an automobile-dominated suburban region.

The visual character of the study area is described in the six sections below, each with its own unique characteristics or visual elements. The assessment is based on six identifiable landscape units determined according to the landform, land uses, scale, vegetation and character of the area.

a. North of US 50 to MD 450 in Prince George's County

The first landscape unit identified on MD 3 lies between the southern project limits just north of US 50 and MD 450 in Prince George's County. This section of roadway is primarily a two-lane (in each direction) open section with occasional guardrail and acceleration and deceleration lanes to accommodate right and left turning vehicles. Two roads intersect MD 3 in this area at Forest Drive and Sylvan Drive. These intersections are not signalized. The landscape adjacent to the roadway has a rural character and is predominantly dense, deciduous/evergreen woods that screen views to and from the roadway (**Photo III-3**). Some commercial businesses are located at the intersecting roadways and in the median, including gas stations, a funeral home, churches, meeting halls, and a motel (**Photo III-4**).



Photo III-3: Intersection of Forest Drive and MD 3 Southbound



Photo III-4: Meeting Hall in Prince George's County Adjacent to MD 3

The Sherwood Manor residential community located on the east side of MD 3 has dense tree cover screening it from the highway. Sherwood Manor generally is not visible from the highway; likewise, the highway is not visible from the residential area. Access to Sherwood Manor is located off Belair Drive.

The White Marsh Branch Recreational Area is accessed from southbound MD 3. The park is not visible from the highway due to its location and the dense tree cover along the highway. A long entry drive serves this facility. The SHA maintains a salt dome near the entrance of MD 3 and Forest Drive. The dense tree cover screens views of the salt dome from MD 3. Beginning at MD 450 there are high-tension electrical towers on the west side of MD 3 that continue north throughout the project study area. Baltimore Gas and Electric Company (BGE) maintains a substation on the west side of MD 3 (see **Photo III-5**). The substation is visible from MD 3 from both northbound and southbound traffic lanes.



Photo III-5: BGE substation on MD 3 at MD 450, Looking Southbound

b. MD 450 Intersections and Patuxent River Crossing

Between the signalized intersections at MD 450 West and MD 450 East, the roadway consists of a three-lane open section divided highway with grass medians. High-tension electrical towers are present on the east side, and a bridge crossing of the Patuxent River is located just east of the confluence with the Little Patuxent River (**Photo III-6**). The visual quality of this area is characterized by wetlands of the Patuxent River and Little Patuxent River. Motorists cannot see the river directly from the roadway due to the dense forest cover and steep slopes (**Photo III-7**).



Photo III-6: View of Patuxent River Crossing, Looking at Northbound MD 3



Photo III-7: MD 3 at MD 450 East

c. MD 450 to MD 424 in Anne Arundel County

Between MD 450 and Cronson/Crawford Boulevard, MD 3 is a bifurcated open section roadway with a varying median width. From Cronson/Crawford Boulevard to MD 424, MD 3 is a closed section with curb and gutter for both the northbound and southbound lanes. Commercial and industrial businesses are present on both sides. The median is a mowed grass area with staggered trees and other ornamental plantings. The west side of MD 3 has some commercial businesses, but is mainly undeveloped south of Cronson/Crawford Boulevard. To the east of MD 3, the area is developed as residential and commercial (**Photos III-8 and III-9**).



Photo III-8: Intersection of Crofton Boulevard at MD 3



Photo III-9: Intersection of Cronson / Crawford Boulevard and MD 3

The residential community of Pigeon House Corner and Crofton Woods is located just north of MD 450 and accesses MD 3 from Crossgate Drive. A natural tree buffer from the highway screens this residential community. In addition, the community is located on top of a slope looking down onto MD 3.

Crofton, and Cedar Grove residential communities are also located on the east side of northbound MD 3 and are screened from the roadway by dense tree cover and large setbacks. Some views in either direction may be seen during months when the deciduous trees lose their leaves.

Crofton's Lake Louise is an important feature of the Crofton Community and is clearly visible from MD 3 (**see Photo III-10**). This stormwater management area is landscaped and serves as a gateway feature adjacent to the "Gates of Crofton", the main entrance into the Crofton community at Crawford Boulevard (**see Photo III-11**). Commercial businesses and their associated parking lots dominate the west side of MD 3. Several community services are also located on the west side of MD 3, in particular the Crofton Post Office. MD 3 physically divides the nearby residential community from these services.



Photo III-10: View of Lake Louise from MD 3



Photo III-11: Gates of Crofton, looking at Community from MD 3

d. MD 424 /Conway Road to Johns Hopkins Road

From MD 424/Conway Road to Johns Hopkins Road the roadway has a developed median with varying widths of up to approximately 450 feet. The roadway has three through lanes, an inside auxiliary lane and outside shoulder area. Both the shoulder and auxiliary lanes serve vehicular access to and from commercial areas and residential properties. Several driveways access MD 3 within this section.

The west side of MD 3 is largely undeveloped with small pockets of commercial businesses. Within the median are numerous businesses, including fast-food restaurants, convenience stores and auto stores. Each business has its own ingress/egress to MD 3. There are four roadways, which intersect MD 3 in this area; Carver Street, Queen Mitchell Road, Raceway Road, and Evergreen Road (**Photo III-12**). The Patuxent River Park is located on the west side of MD 3 near the intersection with Conway Road and is a significant visual resource in this area, dominated by forest.

Developer improvements to this section of MD 3 are planned and will increase the amount of commercial businesses, and may block existing views of the Patuxent River Park.



Photo III-12: View from MD 3 Looking west from MD 424

e. Johns Hopkins Road to Saint Stephens Church Road

From Johns Hopkins Road to Saint Stephens Church Road, MD 3 is a three-lane open section highway in each direction with some portions curbed where commercial businesses are located. The median width varies in this location, widening gradually towards Saint Stephens Church Road. Streets that intersect MD 3 in this area include Wellfleet Lane and Brickhead Road as well as a major intersection at Waugh Chapel/Reidel Road.

The Village at Waugh Chapel, an expanding commercial development, dominates the west side of MD 3. This is a highly developed, relatively new multi-use center with a community center, retail stores, restaurants, and other land uses including adjacent residential development. The remaining portion of land on the west side of MD 3 is largely undeveloped and dominated by dense woods. BGE maintains a substation just north of Waugh Chapel Road (**Photo III-13**).



Photo III-13: BGE Substation just north of Waugh Chapel Road



Photo III-14: View from the Village at Waugh Chapel at MD 3

To the east of MD 3 from the Village at Waugh Chapel is the townhouse community of Crofton Farms (**Photo III-14**). This townhouse community is set back from MD 3 and has screening and plantings located around its perimeter, but it is very visible from the roadway.

The Crofton Farms and Canter Farms, a single-family development as well as the St. Stephens Estates of Gambrills are located near MD 3, but are not visible from the highway due to their large setbacks and natural dense tree buffer.

The owners of the Reliable Contracting property, located adjacent to southbound MD 3 between Waugh Chapel Road/Reidel Road and Evergreen Road/Johns Hopkins Road, are looking to improve their site with a mixed use development. This would essentially expand the Village of Waugh Chapel to the south and would incorporate changes to the MD 3 roadway. Land and tree clearing is anticipated at this location.

f. Saint Stephens Church Road to MD 32

From just south of Saint Stephens Church Road, MD 3 has a two to three lane typical section in each direction with a larger developed median, which includes commercial businesses. Portions

of the roadway are curbed where commercial businesses are located. The developed median is dominated by small businesses including auto dealerships, sports equipment stores, service stations, and retail stores. Each business has its own entrance driveway intersecting with MD 3 or the median connectors. MD 175 is the only major intersection with MD 3 in this area (**Photos III-15 and III-16**).



Photo III-15: View of Northbound MD 3 at MD 175



Photo III-16: View from MD 175 looking east at Southbound MD 3

The left fork of Jabez Branch, a tributary of Severn Run, is located within this portion of the study area. Forest cover screens views of Jabez Branch from MD 3 and MD 175.

This area of MD 3 has a rural character with forest along the roadway on the sides (**Photo III-17**). The east side of MD 3 has a rural agricultural character with agriculture fields behind the few scattered commercial businesses (**Photo III-18**).



Photo III-17: East side of Northbound MD 3 showing the rural character with mature trees along the roadway



Photo III-18: East side of MD 3 showing agricultural character of roadway