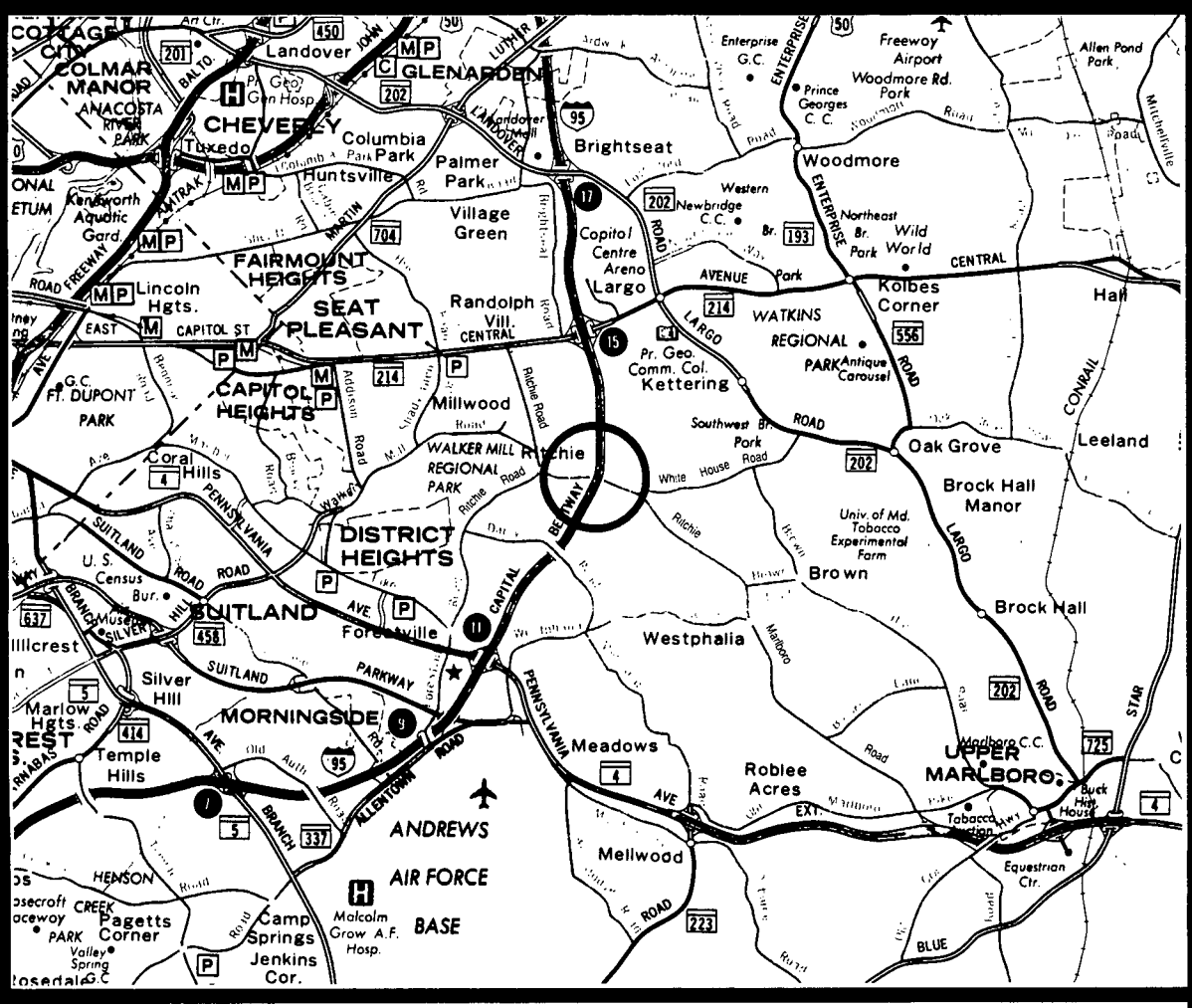
ENVIRONMENTAL ASSESSMENT

FOR

CONTRACT NO. P874-101-372

I-95 (CAPITAL BELTWAY) AT RITCHIE MARLBORO ROAD PRINCE GEORGES COUNTY, MARYLAND



prepared by
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

and
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Report Number: FHWA-MD-EA-90-03-D

Federal Highway Administration
Region III

I-95 at Ritchie-Marlboro Road
Bridge No. 16157

ADMINISTRATIVE ACTION

ENVIRONMENTAL ASSESSMENT

U.S. Department of Transportation
Federal Highway Administration
and
State of Maryland
Department of Transportation
State Highway Administration

SUBMITTED PURSUANT TO: 42 U.S.C.4332(2)(C) 23 CFR 771, 23 U.S.C. 128 and CEQ REGULATIONS (40 CFR 1500 et seq)

HAL KASSOFF
ADMINISTRATOR

5/7/90
Date

Neil J. Pedersen
Neil J. Pedersen, Director
Office of Planning and
Preliminary Engineering

6/4/90
Date

Herman Rodrigo
FOR Federal Highway Administration
Division Administrator

SUMMARY

SUMMARY

1. ADMINISTRATIVE ACTION

( ) Environmental Impact Statement
(X) Environmental Assessment
( ) Finding of No Significant Impact
( ) Section 4(f) Evaluation

2. ADDITIONAL INFORMATION

Additional information concerning this project may be obtained by contacting:

Mr. Louis H. Ege, Jr.
Deputy Director
Office of Planning and
Preliminary Engineering
Room 506
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202
PHONE: (301) 333-1130
HOURS: 8:15 a.m. - 4:15 p.m.

Mr. Herman Rodrigo
Planning, Research
Environment and Safety Engineer
Federal Highway Administration
The Rotunda - Suite 220
711 West 40th Street
Baltimore, Maryland 21211
PHONE: (301) 962-4440
HOURS: 7:30 a.m. - 4:00 p.m.

3. DESCRIPTION OF ACTION

The project consists of the proposed construction of an interchange at I-95 (Capital Beltway) and Ritchie-Marlboro Road located in Prince George's County. The proposed interchange would alleviate some of the traffic congestion experienced at the I-95 interchanges at MD 214 and MD 4.

4. ALTERNATES DESCRIPTION

Two alternates are being studied.

Alternate 1 - (No-Build)

Under the No-Build Alternate, the I-95/Ritchie-Marlboro Road grade-separation would remain the same. Normal maintenance and safety improvements would be performed as they become necessary. This Alternate would not offer any improvements in traffic operation, safety or capacity.

Alternate 5 - Build Alternate

For the Build Alternate, Ritchie-Marlboro Road would be reconstructed from east of White House Road to Ritchie Road. A relocated connection would be made with Ritchie Road opposite Walker Mill Road. The intersection of Ritchie-Marlboro and White House Roads would be redesigned as a "T" intersection.

Alternate 5 consists of the construction of a full cloverleaf interchange to carry all movements to and from I-95 and Ritchie-Marlboro Road. New bridges would be constructed to carry I-95 over Ritchie-Marlboro Road. This alternate is the only alternate that will adequately handle the traffic projections.

5. SUMMARY OF ENVIRONMENTAL IMPACTS

A summary of the impacts associated with the Build Alternate under consideration is presented in Table 1.

Socioeconomic

The proposed improvements would require the displacement of seven residences, and one minority family would be affected.

The State Historic Preservation Officer has determined that no historic sites on or eligible for the National Register of Historic Places are located in the project area. A Phase I archeological survey has been completed. Five archeological sites were identified. One site is located outside the project area. Four of the sites are recommended for Phase II studies.

No publicly-owned public parks or recreation areas would be affected by the proposed improvements.

This project is consistent with the Prince George's County Master Plans governing the project area; specifically Largo Lottsford 1977, Suitland District Heights and Vicinity 1985, and Westphalia, Mellwood, Upper Marlboro, Rosaryville, Naylor and Aquasco, 1973.

Construction would not occur within the 100-year floodplain of Southwest Branch. Alternate 5 would impact approximately 11 acres of non-tidal wetlands and would require eight (8) stream crossings but none will be relocated. Approximately 43 acres of prime farmland soils would be affected by Alternate 5 all of which are planned for industrial and residential development.

No known Federal threatened or endangered species exist within the project area. Coordination with the Maryland Department of Natural Resources indicates one historic record of the State-endangered plant Bidens discordea. The plant, however, was not observed during numerous field reviews in the project area.

Approximately 150.92 acres of terrestial habitat would be impacted by Alternate 5.

Sediment and erosion control measures and stormwater management practices, approved by the Department of the Environment would be strictly enforced during construction to minimize water quality impacts to all tributaries of the Southwest Branch.

The State and National Ambient Air Quality Standards for carbon monoxide would not be exceeded under the Build Alternate or the No-Build Alternate.

The projected noise levels under Alternate 5 would equal or exceed the Federal Noise Abatement Criteria (67dBA) or increase by 10 dBA or more over ambient noise levels at 3 of the 4 noise sensitive areas in the design year 2015.

TABLE 1
COMPARISON OF ALTERNATES

Analysis Item	No-Build	Alternate 5
Social Economic		
1. Relocation		
a. Residences	0	7
b. Businesses	0	0
c. Farms	0	0
2. Minority families affected	0	1
3. Parkland or recreation area affected	0	0
4. Consistent with area land use plans	No	Yes
5. Historic Sites Affected	0	0
6. Archeological Sites Affected	0	Yes
Natural Environment		
1. Number of stream relocation	0	0
2. Number of stream crossings	0	8
3. Threatened or endangered species	No	No
4. Acres of prime farmland affected	0	43
5. Impacts 100-year flood-plain (Acres)	No	0
6. Wetlands affected (Acres)	No	11
7. Woodland	No	28.5

TABLE 1
COMPARISON OF ALTERNATES
(continued)

Analysis Item	No-Build	Alternate 5
<u>Noise</u> 1. Number NSA's exceeding abatement criteria or increase 10 dBA or more over ambient	0	3
<u>Air Quality</u> 1. CO violations of 1-hour or 8-hour standards	No	No
<u>Approximate Costs</u> (1990 Dollars in Thousands)	None	$65,000

The following Environmental Assessment Form is a requirement of the Maryland Environmental Policy Act and Maryland Department of Transportation Order 11.01.06.02. Its use is in keeping with the provisions of 1500.4 (k) and 1506.2 and .6 of the Council of Environmental Quality Regulations, effective July 31, 1979, which recommend that duplication of Federal, State, and Local procedures be integrated into a single process.

The checklist identifies specific areas of the natural and social-economic environmental which have been considered while preparing this environmental assessment. The reviewer can refer to the appropriate sections of the document, as indicated in the "Comment" column of the form, for a description of specific characteristics of the natural or social-economic environmental within the proposed project area. It will also highlight any potential impacts, beneficial or adverse, that the action may incur. The "No" column indicates that during the scoping and early coordination processes, that specific area of the environment was not identified to be within the project area or would not be impacted by the proposed action.

ENVIRONMENTAL ASSESSMENT FORM

	YES	NO	COMMENTS
A. Land Use Considerations			
1. Will the action be within the 100 year floodplain?	__	X	_____
2. Will the action require a permit for construction or alteration within the 50 year floodplain?	__	X	_____
3. Will the action require a permit for dredging, filling, draining or alteration of a wetland?	X	__	Section IV-E
4. Will the action require a permit for the construction or operation of facilities for solid waste disposal including dredge and excavation spoil?	__	X	_____
5. Will the action occur on slopes exceeding 15%?	__	X	_____
6. Will the action require a grading plan or a sediment control permit?	X	__	Section IV-E
7. Will the action require a mining permit for deep or surface mining?	__	X	_____
8. Will the action require a permit for drilling a gas or oil well?	__	X	_____
9. Will the action require a permit for airport construction?	__	X	_____
10. Will the action require a permit for the crossing of the Potomac River by conduits, cables or other like devices?	__	X	_____
11. Will the action affect the use of a public recreation area, park, forest, wildlife management area, scenic river or wildlife?	__	X	_____

ENVIRONMENTAL ASSESSMENT FORM
(Continued)

	YES	NO	COMMENTS
12. Will the action affect the use of any natural or manmade features that are unique to the county, state, or nation?	__	X	_____
13. Will the action affect the use of an archeological or historical site or structure?	X	__	Section IV-D
B. Water Use Considerations			
14. Will the action require a permit for the change of the course, current, or cross-section of a stream or other body of water?	X	__	Section IV-E
15. Will the action require the construction, alteration, or removal of a dam, reservoir, or waterway obstruction?	__	X	_____
16. Will the action change the overland flow of storm water or reduce the absorption capacity of the ground?	X	__	Section IV-E
17. Will the action require a permit for the drilling of a water well?	__	X	_____
18. Will the action require a permit for water appropriation?	__	X	_____
19. Will the action require a permit for the construction and operation of facilities for treatment or distribution of water?	__	X	_____
20. Will the project require a permit for the construction and operation of facilities for sewage treatment and/or land disposal of liquid waste derivatives?	__	X	_____
21. Will the action result in any discharge into surface or sub-surface water?	X	__	Section IV-E

ENVIRONMENTAL ASSESSMENT FORM
(Continued)

	YES	NO	COMMENTS
22. If so, will the discharge affect ambient water quality parameters and/or require a discharge permit?	__	X	_____
C. Air Use Considerations			
23. Will the action result in any discharge into the air?	X	__	Section IV-F
24. If so, will the discharge affect ambient air quality parameters or produce a disagreeable odor?	__	X	_____
25. Will the action generate additional noise which differs in characters or level from present conditions?	X	__	Section IV-G
26. Will the action preclude future use of related air space?	__	X	_____
27. Will the action generate any radiological, electrical, magnetic, or light influences?	__	X	_____
D. Plants and Animals			
28. Will the action cause the disturbance, reduction or loss of any rare, unique or valuable plant or animal?	__	X	_____
29. Will the action result in the significant reduction or loss of any fish or wildlife habitats?	__	X	Section IV-E
30. Will the action require a permit for the use of pesticides, herbicides or other biological, chemical or radiological control agents?	__	X	_____

ENVIRONMENTAL ASSESSMENT FORM
(Continued)

	YES	NO	COMMENTS
E. Socio-Economic			
31. Will the action result in a pre-emption or division of properties or impair their economic use?	X	__	Section IV-A
32. Will the action cause relocation of activities, structures, or result in a change in the population density or distribution?	X	__	Section IV-A
33. Will the action alter land values?	X	__	Section IV-A
34. Will the action affect traffic flow and volume?	X	__	Section II-C
35. Will the action affect the production, extraction, harvest or potential use of a scarce or economically important resource?	__	X	_____
36. Will the action require a license to construct a sawmill or other plant for the manufacture of forest products?	__	X	_____
37. Is the action in accord with federal, state, regional and local comprehensive or functional plans--including zoning?	X	__	Section I-A
38. Will the action affect the employment opportunities for persons in the area?	X	__	Section IV-B
39. Will the action affect the ability of the area to attract new sources of tax revenue?	X	__	Section IV-B
40. Will the action discourage present sources of tax revenue from remaining in the area, or affirmatively encourage them to relocate elsewhere?	__	X	_____

ENVIRONMENTAL ASSESSMENT FORM
(Continued)

	YES	NO	COMMENTS
41. Will the action affect the ability of the area to attract tourism?	__	X	_____
F. Other Considerations			
42. Could the action endanger the public health, safety or welfare?	__	X	_____
43. Could the action be eliminated without deleterious affects to the public health, safety, welfare or the natural environment?	__	X	_____
44. Will the action be of statewide significance?	__	X	_____
45. Are there any other plans or actions (federal, state, county or private) that, in conjunction with the subject action could result in a cumulative or synergistic impact on the public health, safety, welfare, or environment?	__	X	_____
46. Will the action require additional power generation or transmission capacity?	__	X	_____
47. This agency will develop a complete environmental effects report on the proposed action.	X	__	***

*** This environmental assessment has been prepared in accordance with the National Environmental Policy Act and 23 CFR, Part 771. It also satisfies the requirements of the Maryland Environmental Policy Act.

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS
(Continued)

TABLE OF CONTENTS
(Continued)

LIST OF FIGURES

LIST OF FIGURES

LIST OF TABLES

DESCRIPTION OF PROPOSED ACTION

I. DESCRIPTION OF PROPOSED ACTION

A. Project Location

The I-95 Ritchie-Marlboro Road Interchange study area is located in the western part of Prince George's County east of Washington D.C. (See Figure 1.) The area is bounded by MD 214 (Central Avenue) to the north, D'Arcy Road to the south, and Ritchie Road to the west. (See Figure 2.)

B. Project Description

The proposed project consists of the construction of an interchange at the I-95 (Capital Beltway) overpass of Ritchie-Marlboro Road. The Build Alternate is a cloverleaf interchange, involving new I-95 bridges and Ritchie-Marlboro Road reconstructed to a six-lane, curbed, divided highway.

C. Description of Existing Environment

1. Social Environment

a. Population

In all of Maryland, Prince George's County's population is exceeded only by the Metropolitan area of Baltimore City in terms of total population and population density. According to the Maryland Office of Planning, the overall population within Prince George's County increased nearly 0.7 percent between 1970 (660, 567) and 1980 (665, 071). In 1990, the Office of Planning estimated the population to be 711,000, an increase of almost 7 percent since 1980, and it is projected to increase by 7.6 percent (765,000) by the year 2000.

By the year 2010, it is estimated that the population in Prince George's County will increase by another 7 percent (818,000) over population levels in the year 2000.

The study area lies in the central portion of Prince George's County. For the purpose of evaluating recent population characteristics and development trends, the study area is defined in terms of Election Districts. Data from the 1980 U.S. Census were used, as statistics from the 1990 census have not yet been developed.

The project area is located within Election District 13 (Kent) and Election District 15 (Mellwood). (See Figure 3.) According to the 1980 Census of Population and Housing, Election District 13 experienced a population increase of 35.9 percent from 1970 (30, 318) to 1980 (41, 217). Election District 15 experienced an increase of 22.4 percent from 1970 (8,774) to 1980 (10,740). In 1980, the total population in these election districts numbered 51,957 (a 33 percent increase since 1970) with the largest proportion and number residing in Election District 13.

An analysis of 1980 census data indicated that the largest concentration of minority individuals exists in Election District 13 with blacks comprising 78.1 percent of the total population. Other minority compositions were 0.1 percent American Indian, 2.5 percent Oriental and 0.6 percent classified as other. In Election District 13, 2.5 percent of the population is 65 or older.

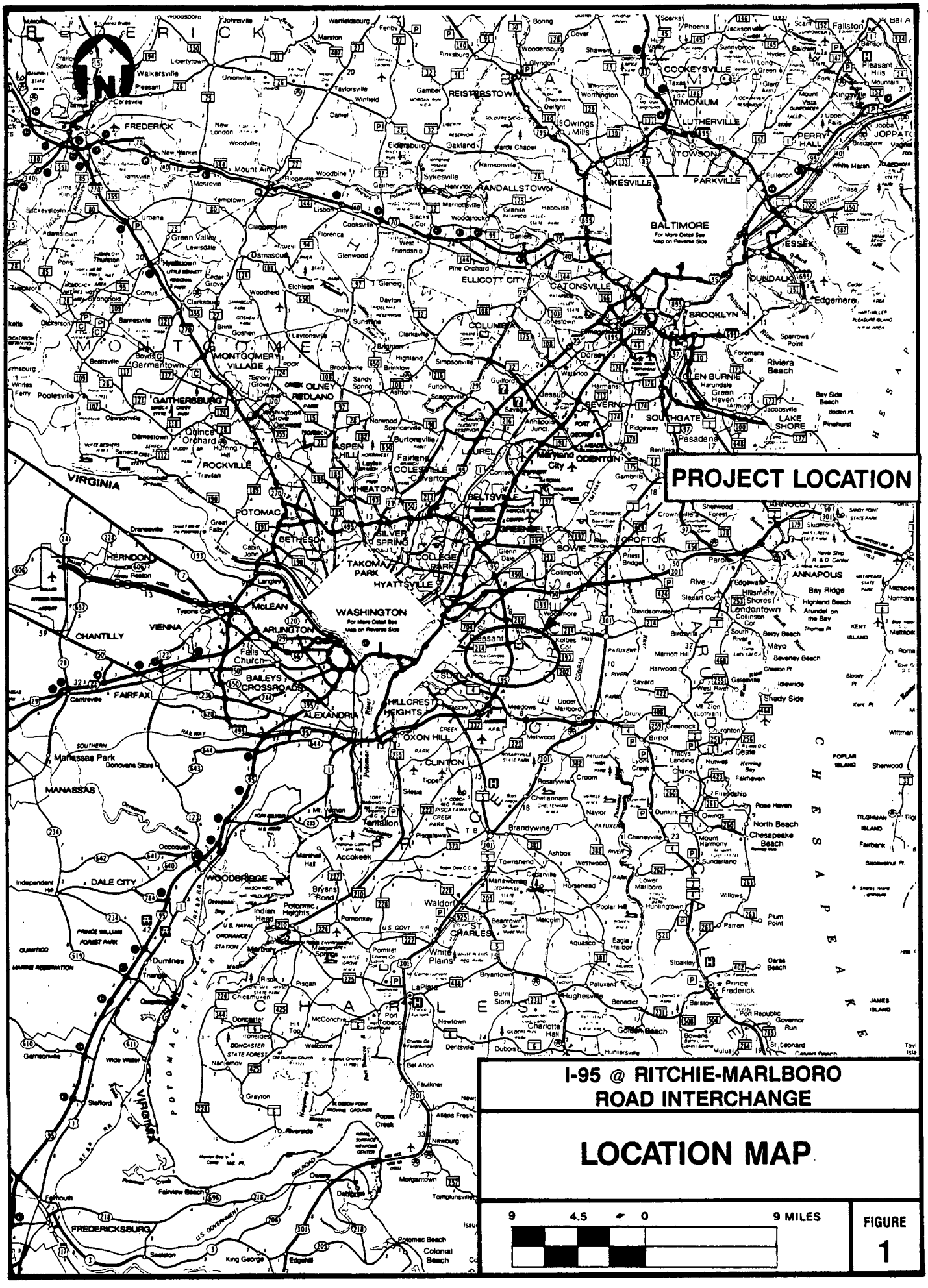
Election District 15 is comprised of 25.3 percent blacks, 0.4 American Indian, 1.0 percent Oriental and 0.4 other. Several large black communities exist in the southwest portion of the study area namely Forestville Estates and Suitland District Heights. In Election District 15, 4.4 percent of the population is age 65 or older.

b. Community Facilities and Services (Figure 4)

Most community facilities and services are located outside the study area within close proximity.

Within the study area is the H. Winship Wheatley Special Education School and Arrowhead Elementary School. North Forestville Elementary School, Prince George's Community College and numerous other educational facilities are located outside the project area. Churches are also located outside the project area.

Parks within and near the project area include Greenwood Manor Community Park, Little Washington Neighborhood Park, New Orchard Community Park, Walker Mill Regional Park and Southwest Branch. Greenwood Manor Community Park is within the project area and is designated as a public park for conservation and recreational purposes. No Federal funds were used to acquire the park property. Currently the park is used for recreational purposes such as biking and hiking. There are no current plans for development of the existing park property.

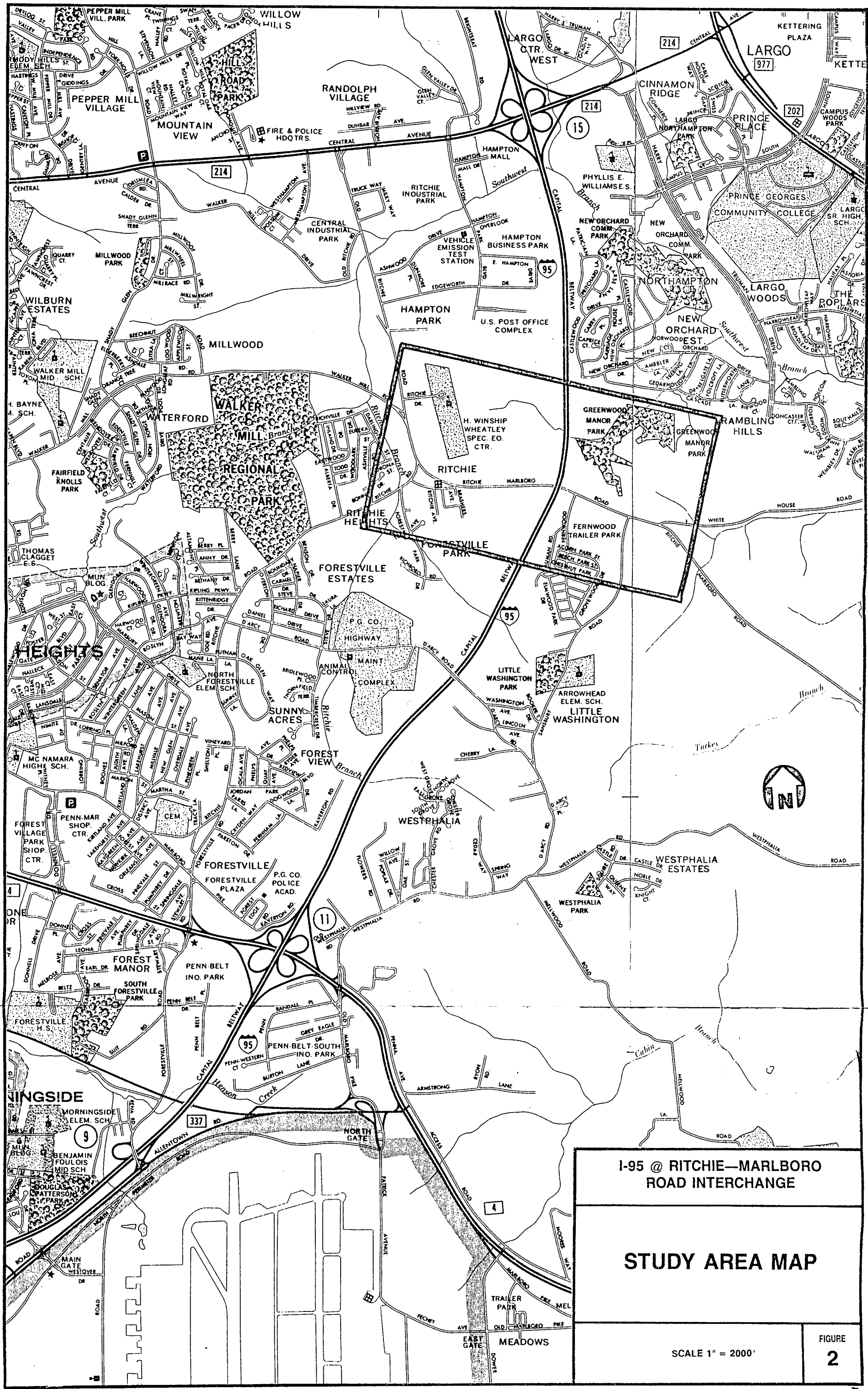


I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

LOCATION MAP

9 4.5 0 9 MILES

FIGURE 1

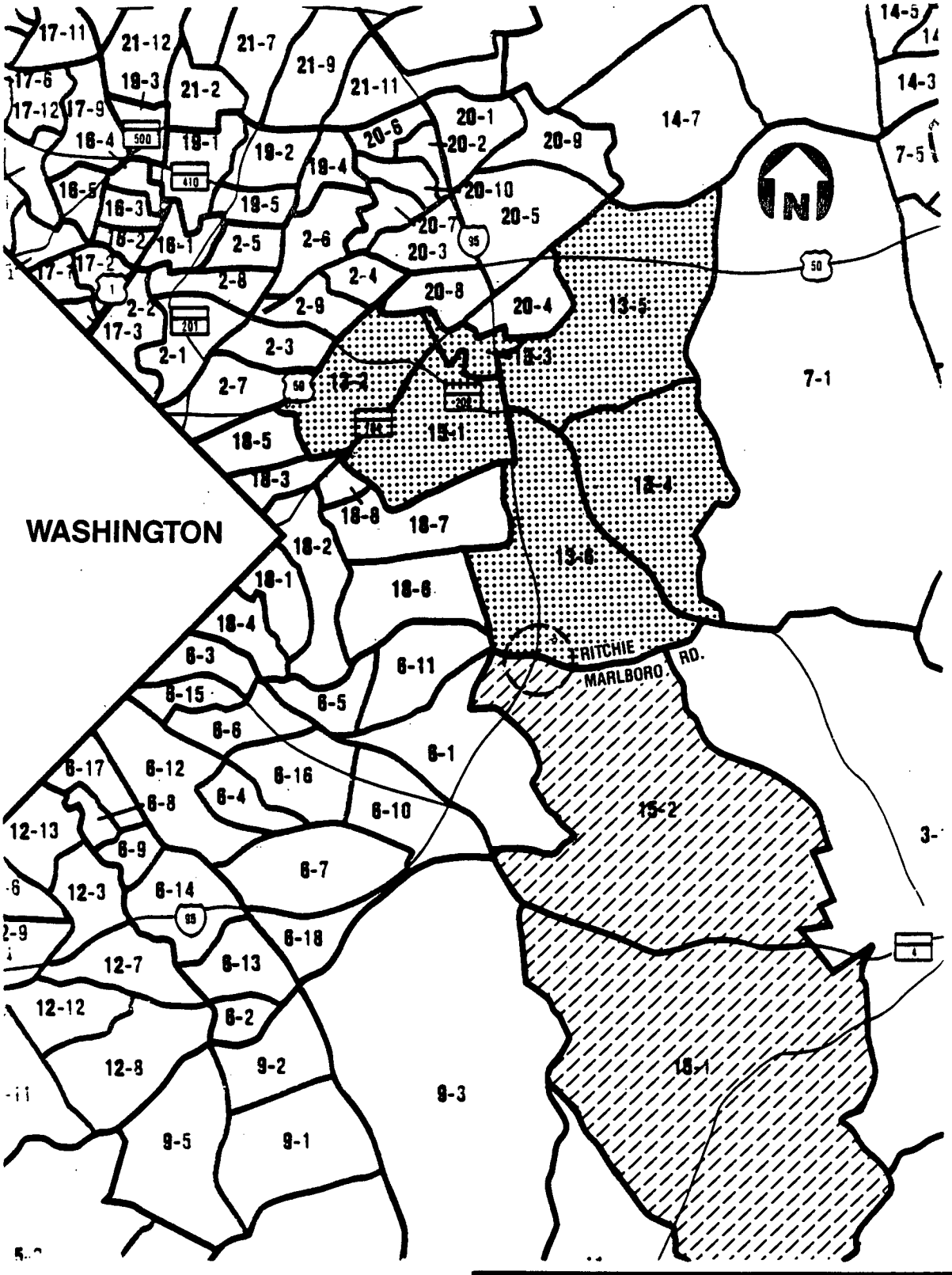


I-95 @ RITCHIE—MARLBORO ROAD INTERCHANGE

STUDY AREA MAP

SCALE 1" = 2000'

FIGURE 2



LEGEND

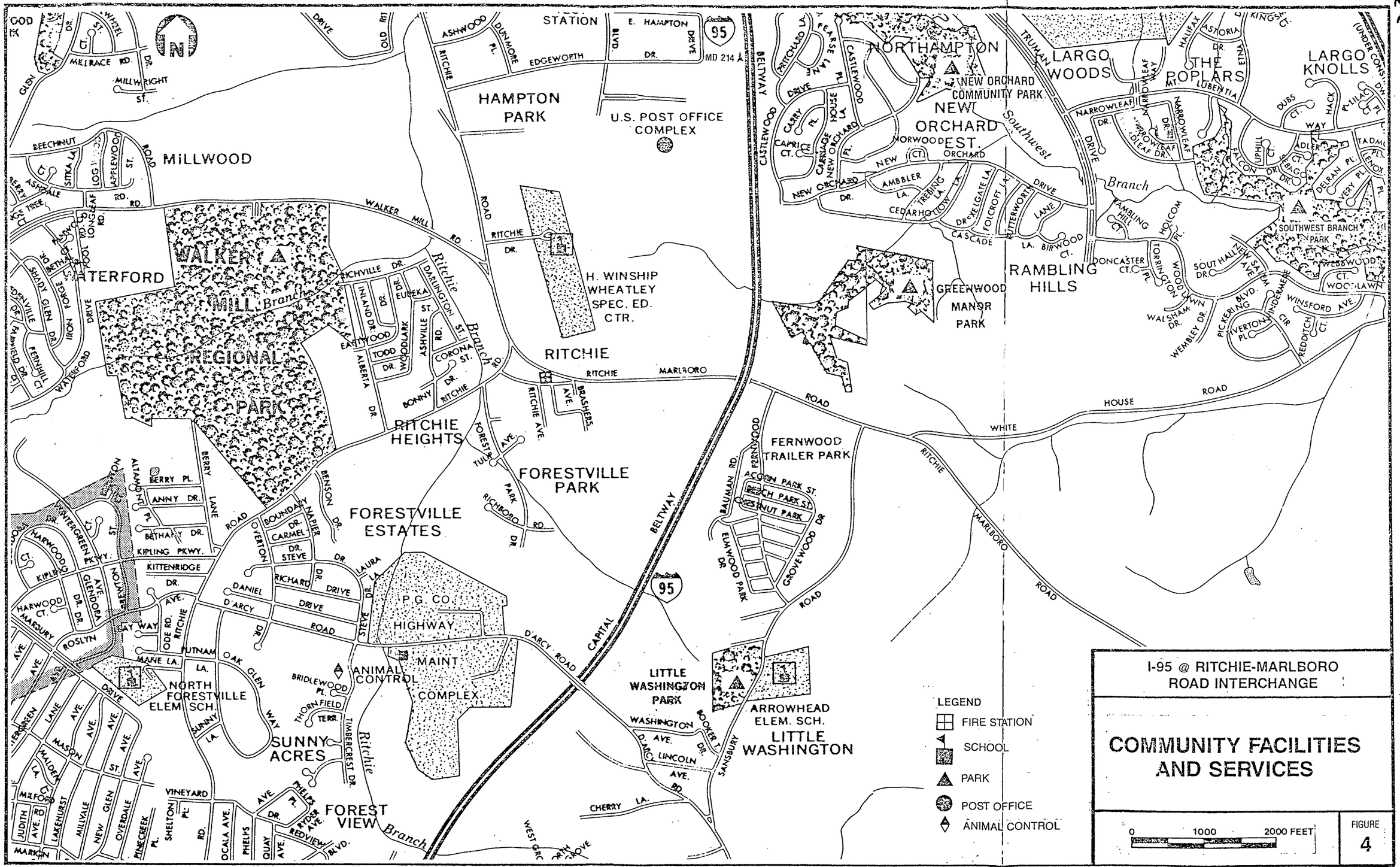
- STUDY AREA
- DISTRICT 13 (KENT)
- DISTRICT 15 (MELLWOOD)

I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

ELECTION DISTRICTS

NOT TO SCALE

FIGURE 3



I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

COMMUNITY FACILITIES AND SERVICES

FIGURE 4

Fire protection is provided by the Ritchie Volunteer Fire Company #37 located near the Ritchie-Marlboro Road/Brashers Avenue intersection. Other back-up units, in order of response times, are Forestville Company, District Heights Company, and Kentland Company Rescue Squad (Seat Pleasant Fire Company).

Police protection is provided by Prince George's County Police Department (District 3 and District 2 stations) and the Maryland State Police Barracks at Forestville to the south.

Hospitals which serve the study area are Prince George's General Hospital in Cheverly and Southern Maryland Hospital in Clinton. The nearest public library is located in District Heights. Animal control services are provided within the study area off D'Arcy Road.

The U.S. Post Office Southern Maryland Division is located in the northern portion of the project area in the Hampton Park Industrial Complex.

Public water and sewer services are provided in the project area.

2. Economic Environment

Since the 1960's, the Prince George's County Government has denoted a substantial portion of its resources to promoting a well-balanced economic development program. Over the past 15-20 years, private sector employment in the County has been dominated by wholesale and retail trade, contract construction, warehousing and other industries serving the local and Metropolitan Washington, D.C. populations. The emphasis on warehousing and retail activities within the County has caused many residents with other skills to work outside the County. Safeway and Giant Foods are both headquartered in the County and are its two largest private sector employers.

Economic activity in the study area consists of small commercial and light industrial uses along Ritchie-Marlboro Road west of I-95. The Hampton Industrial Park (which includes the large U.S. Post Office complex) and the Hampton Business Park lie within the study area. Ritchie Industrial Park and Hampton Mall are located in the northwest portion of the project area.

According to the 1980 U.S. Census, the predominant occupations of residents in Election District 13 were public administration (24 percent), retail trade (13.5 percent), educational services (9 percent), and health services (8.6 percent). In

Election District 15, predominant occupations include administrative/managerial (25 percent), retail trade (16 percent), and educational services (9 percent).

Of the working population in the subject election districts, a majority (46 percent) worked outside of the State in areas such as the District of Columbia. Nearly 36 percent commuted to work within Prince George's County and 8 percent commuted to jobs in other counties.

In 1979, the medium household income for Election District 13 was $21,074. Election District 15, it was $29,551. The county-wide medium income for 1979 was $24,597. A 1987 estimate by the Office of Planning indicates that the County's average medium household income had increased to $38,411.

3. Land Use

a. Existing (Figure 5)

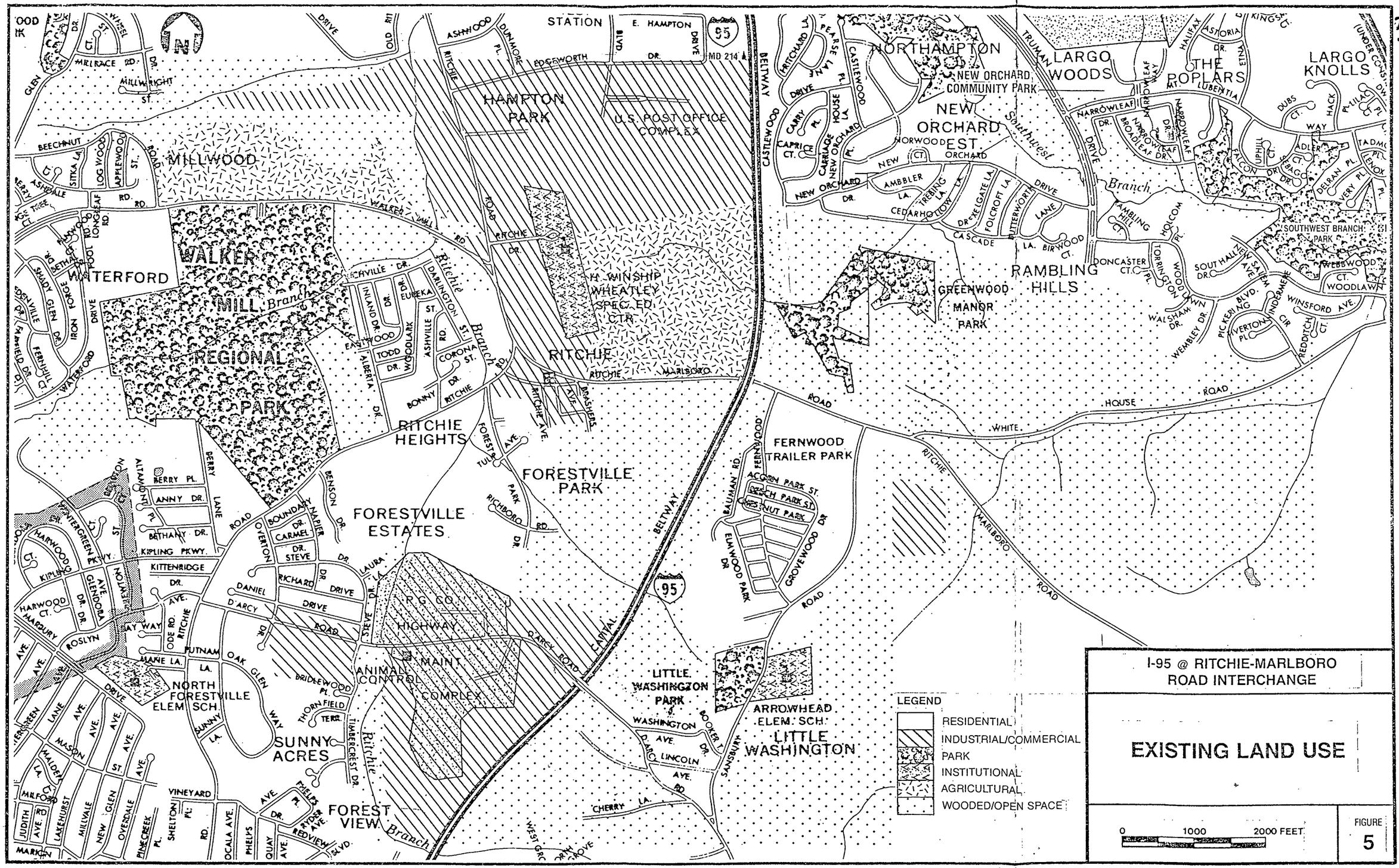
Land use in the Central portion of the study area is predominantly open space and wooded with sparsely populated residential uses.

The three Master Plans governing the project area: Largo Lottsford, Suitland District Heights and Vicinity and Westphalia, Mellwood, Upper Marlboro, Rosaryville, Naylor and Aquasco were adopted in 1977, 1985 and 1973, respectively.

To the far northwest portion of the proposed interchange area lies the expansive Hampton Office and Industrial Area. This area, approximately 500 acres in size (of which about one-third remains undeveloped) includes wholesale, warehouse, light manufacturing, distribution and technical services. Additional land use in this area includes educational and commercial uses particularly along Old Ritchie Road.

In the southwest portion of the project area toward Forestville Estates and District Heights are several medium density residential developments as well as isolated single family homes with substantial acreage.

To the far southern limits of this area is the D'Arcy Road Industrial Area. Approximately 60 acres of industrial and related development are sited on either side of D'Arcy Road adjoining the Capital Beltway. This area includes primary County facilities such as the Department of Public Works and Transportation yards, administrative offices and an animal shelter.



I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

EXISTING LAND USE

FIGURE 5

The northeastern portion of the project area is characterized by wooded land which includes Greenwood Manor Park and large tracts of open space. A mobile home park is located to the southeast portion of the project area and is surrounded by woods.

b. Future (Figure 6)

The most substantial industrial/business development in the project area will take place within the Suitland-District Heights area which is located west of the interchange. Land tracts west of I-95, including Central Avenue (MD 214)/Beltway quadrant, and Central Forestville south of D'Arcy Road are zoned and planned for industrial development. Construction of the proposed interchange would serve traffic generated by the planned employment areas located adjacent to the Beltway between Central Avenue (MD 214) and Pennsylvania Avenue (MD 4).

The Largo Lottsford Master Plan designates that portion of the project area which is located south of Greenwood Manor Park to Ritchie-Marlboro Road to retain its current characteristics as wooded/open space.

Land use in the Westphalia area will remain primarily rural residential in nature as recommended by the General Plan. However, according to the Adopted and Approved Master Plan for Subregion VI, consideration will be given to the location of a Village Activity Center south of White House Road to serve local residential development.

4. Historic and Archeological Resources

a. Historic Sites

There is only one standing structure in the project area which is historic. This resource, the Old Ritchie Store, located in the southwest quadrant of the study area near the intersection of Ritchie Road and Ritchie-Marlboro Road is Maryland Inventory Level and not eligible for inclusion in the National Register of Historic Places. The January 6, 1987 letter to this effect from the State Historic Preservation Officer (SHPO) is included in the Comments and Coordination Section.

b. Archeological Sites

A phase I archeological study was completed for the study area. Four sites were identified as potentially eligible for the National Register of Historic Places. These sites yielded prehistoric materials. The artifacts suggest that these sites represent possible encampment sites functioning as resource procurement camps rather than hunting stations. It is recommended that a phase II investigation be undertaken to determine limit of sites and evaluate potential eligibility for inclusion in the National Register.

5. Natural Environment

Affected environment includes all land within the project study area. Actual impacts are discussed in Section IV-E.

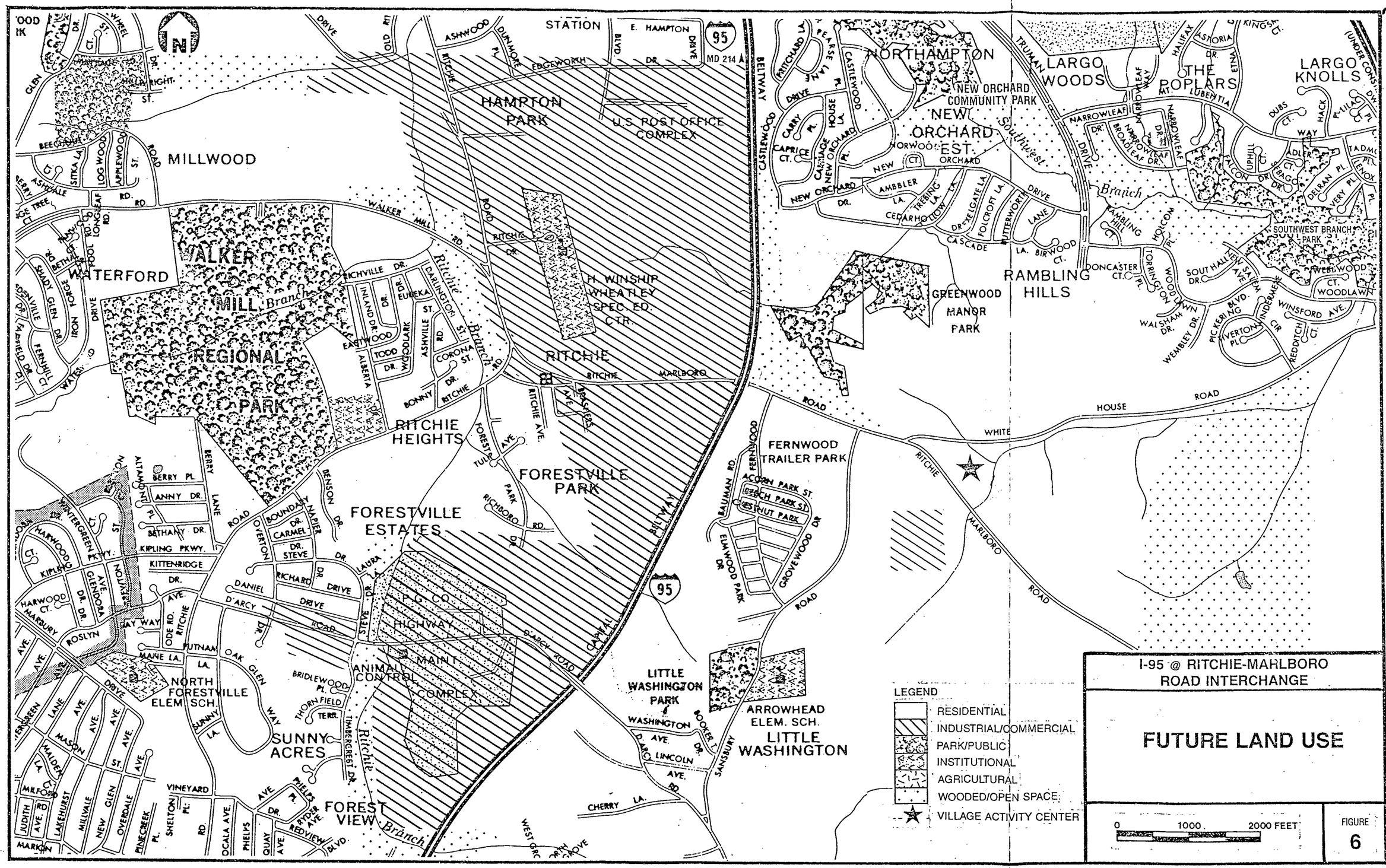
a. Topography, Geology and Soils

1. Topography

The project area is in the Atlantic Coastal Plain and consists of flat to moderately rolling hills. The southern part of the area contains wooded hillsides adjacent to several streams. The embankment for existing I-95 represents one of the major topographic features in the area. Several of the streams exist in deep cut gorges 5 to 10 feet deep. Agriculture and developed areas predominate the flat and gently rolling parts of the project study area.

2. Geology

Prince George's County is primarily in the Atlantic Coastal Plain physiographic province. The Atlantic Coastal Plain is underlain by unconsolidated deposits of gravel, sand, silt, and clay that range in age from the Cretaceous period in the northern part of the County to Recent on the floodplains. The project area is in the coastal plain and is classified in the Pamunkey Group in the Aquia and Brightseat Formations. The bedrock consists of the Aquia Formation and Brightseat Formation which are of the Tertiary period and Paleocene era. The Aquia Formation is dark green to gray-green, argillaceous, highly-glauconitic, well-sorted, fine to medium-



LEGEND

- RESIDENTIAL
- INDUSTRIAL/COMMERCIAL
- PARK/PUBLIC
- INSTITUTIONAL
- AGRICULTURAL
- WOODED/OPEN SPACE
- VILLAGE ACTIVITY CENTER

I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

FUTURE LAND USE

0 1000 2000 FEET

FIGURE 6

grained sand; locally indurated shell beds have a thickness of 0 to 100 feet. The Brightseat Formation is gray to greenish-gray, micaceous, argillaceous, sparsely glauconitic, fine- to coarsely-grained sand in locally indurated calcareous beds with phosphatic pebbles. The bed thickness is 0 to 20 feet; it is mapped as part of the Monmouth Formation. Part of the Monmouth Formation may be present in the study area but the area is predominately underlain by the Aquia Formation.

3. Soils

The majority of the project area is located in the Westphalia-Evesboro-Sassafras Soil Association. Soils of this area are generally deep, well-drained to excessively-drained, normally located on uplands that are mostly moderately to steeply sloped. There are thirteen different soil series found in the project area.

The Adelphia soils found in the project area are soils important to farming. These soils are moderately drained, also beneficial in use for timber production. Adelphia soils in the vicinity of the proposed interchange are specifically identified as Adelphia fine sandy loams. They are of varying slopes from 0 to 10 percent.

The Colemantown soil found in the project area is identified as a hydric soil. This soil is typically poorly drained and nearly level. Moisture problems limit uses of this soil type. Specifically, the soil identified within the study area is Colemantown loam, 0 to 2 percent slopes.

The Collington soils found in the project area have been identified as upland soils. They are typically deep, well-drained soils that are nearly level to rolling, but steep in some places. Collington soils in the vicinity of the proposed interchange are specifically Collington fine sandy loams with the exception of Collington-Urban land complex. These soils have varying slopes ranging from 2 to 30 percent.

The Donlonton soil found in the project area consists of moderately well-drained, nearly level to gently sloping soil on uplands. This soil is of limited extent and importance in the project area. Native vegetation is typically

mixed hardwoods that tolerate limited wetness. The Donlonton soil of the project area is Donlonton fine sandy loam having slopes of 0 to 2 percent.

The Galestown soils found in the project area have been identified as upland soils. They consist of very deep, very sandy, somewhat excessively to excessively well-drained soils. These level to steep soils are commonly near but well above stream and drainage ways. Farming commonly occurs on these soils; however, special fertility and management practices may be needed due to the excessive drainage. Two types of Galestown soils occur in the project area. They are Galestown gravelly loamy sand, 0 to 8 percent slopes, and Galestown-Evesboro loamy sands, 8 to 15 percent slopes.

A miscellaneous land type found in the project area commonly occurring on floodplains is Mixed alluvial land. This soil consists of deposits on floodplains that range from sand to clay. It is typically moderately wet to wet soil which is frequently flooded. Agricultural practices on this soil are generally limited to use for pasture or hay production.

The Monmouth soils found in the project area have been identified as deep, well-drained, upland soils. These soils are useful in farming and community development. Native vegetation found among these soils is typically mixed hardwoods, mainly oak. Two types of Monmouth soils occur in the project area. They are Monmouth clay loam, 10 to 30 percent slopes, severely eroded, and Monmouth fine sandy loam, 2 to 5 percent slopes, moderately eroded.

The Ochlockonee soil found in the project area has been identified as a deep, well-drained soil. Normally occurring on floodplains or on first bottoms of streams, this soil also occurs in upland depressions, at the foot of slopes, and around the head of some drainage areas. This soil generally supports good stands of mixed hardwoods interspersed over near level to moderately sloping land. The Ochlockonee soil found in the vicinity of the proposed interchange is specifically identified as Ochlockonee sandy loam, local alluvium, 2 to 5 percent slopes.

The Rumford soil found within the project area has been identified as a deep, well-drained soil. This upland soil can range from nearly level to

strongly sloping. Farming occurs on this soil; however, special fertility and management practices may be needed due to the deficient amounts of moisture and nutrients available to plants. The Rumford soil identified within the project area is Rumford loamy sand, 2 to 5 percent slopes, moderately eroded.

A miscellaneous land type found in the project area, mainly occurring on steep slopes along ravines, is Sandy land. This soil consists of sandy Coastal Plain sediments. It is of very little use, sometimes being left uncleared in trees and brush. Farming rarely occurs in this land type.

The Sassafras soils found in the project area have been identified as deep, well-drained, upland soils. They occur on nearly level to rolling or very steep lands of the Coastal Plain. These soils are very useful in farming and are equally useful to residential and industrial development. Native vegetation typically consists of mixed upland hardwoods, mainly oak. Sassafras soils identified in the project area are Sassafras gravelly sandy loams, slopes ranging from 10 to 30 percent and Sassafras sandy loams, slopes ranging from 2 to 10 percent, moderate erosion potential.

The Shrewsbury soils found in the project area have been identified as fairly-deep, poorly-drained soils. They occur on nearly level to gently sloping uplands of the Coastal Plain. These soils are good for farming only if properly drained. Due to this poor drainage characteristic, the Shrewsbury soil has attained a classification as hydric with the exception of the Shrewsbury-Urban land complex which has been altered to accommodate development. Other Shrewsbury soils located in the project area are Shrewsbury fine sandy loams which have slopes ranging from 0 to 5 percent.

The Westphalia soils found in the project area have been identified as deep, well-drained soils. They occur in the higher parts of the Coastal Plain uplands on topography ranging from nearly level to very steep. Vegetation native to these soils is mixed upland hardwoods, mainly oak. Westphalia soils are very important to farming. In the vicinity of the proposed interchange, Westphalia fine sandy loam soils have been found in abundance. Slopes of these soils range from 2 to 20 percent.

b. Water Resources

1. Surface Water

Within the project area, there are three small, intermittent tributaries of Southwest Branch. Southwest Branch is a tributary of the Patuxent River Area drainage sub-basin. Two of the streams originate on the west side of I-95, converge, and flow under the fill of I-95 via a culvert. On the east side of I-95, the third stream converges with the other two and then proceeds through the study area in a northeast direction. The three streams comprise the entire headwaters system of the tributary to Southwest Branch. This headwaters system lies almost wholly within the project study area.

Maryland regulations classify these streams as Class I Waters, which protects them for water contact recreation, aquatic and wildlife, and water supply systems. Class I designations do not permit in-stream work from March 1 through June 15, inclusive.

The quality of water in Maryland is regulated by COMAR 10.50.01, Maryland Receiving Water Quality Standards. The code cites six parameters to be used to establish water quality. These parameters include both chemical and bacteriological elements considered in water quality. The parameters are (1) fecal coliform density; (2) dissolved oxygen; (3) water temperature; (4) pH; (5) turbidity; and (6) toxic materials.

Coordination with the United States Geological Survey and Maryland Department of the Environment (Appendix) revealed that there are no available water quality data for the surface water in the project area. Some water quality data are available for this stream system, but are well downstream of the project area and are more than twenty years old. Contacts with other agencies have determined that more recent data are not available. Field views of the streams indicate that the water quality is seriously degraded. Pollutants are apparent in several of the tributaries. In addition, many of the areas around the streams and the wetlands that drain into the streams have been used as dump sites.

2. Groundwater

The primary aquifer underlying the project study area is the Aquia aquifer. The Aquia aquifer consists of sandy sediments of the Aquia Formation. These sediments are composed of predominantly fine to medium glauconite and quartz sand with minor amounts of shell and clay. The aquifer extends from mid-Maryland into northern Virginia. Thickness of the overlying Aquia Formation ranges from 0 to 250 feet. Reported well yields range from 4 to 350 gallons per minute.

Regionally, numerous wells penetrate this aquifer, including light industrial, small municipal and domestic uses. In the project area, most old wells were in the Quaternary Deposits, an unconfined aquifer of gravel deposits near the surface, or in the Magothy aquifer below the Aquia aquifer. This was due to large amounts of iron in the water of the Aquia aquifer. More recently, the area is served by the Washington Suburban Sanitary Commission. Most consumers obtain public water from this source.

Coordination with the United States Geological Survey and the Maryland Department of Natural Resources indicates that existing data on file on groundwater quality are thirty-five to forty years old.

3. Floodplains

Maps for determining floodplains encountered within the project area were obtained from the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP). These maps delineate the 100-year, or base, floodplains located within a community. These maps were used for complying with Executive Order 11988, Floodplain Management, and FHPM 6-7-3-2. These maps do not necessarily identify all areas subject to flooding, particularly from local drainage sources of a small size.

Federal Emergency Management Agency maps confirm that there are no 100-year floodplains within the project area. The streams in the project area can be expected to flood during storm events. Due to the relatively small size of the streams and their associated watershed, floodwaters would recede relatively quickly. Most of the surface water in the project area has adjacent

wetlands. Maintaining the integrity of these wetlands is important to mitigate the extent of stream flooding within the project area and downstream.

c. Ecology

1. Terrestrial Habitat

Within the study area, there are five distinct vegetative habitats. These habitats are (1) farmland/pasture, (2) man-dominated, (3) forested, (4) old field, and (5) scrub-shrub. Habitat within the right-of-way was surveyed, typified, and total and individual habitat acreage were calculated, as presented in Table 2. Figure 5 shows land uses in the project study area. All areas within the project study area will not be impacted. Actual impacts are discussed in Section IV-E.

TABLE 2
HABITAT ACREAGE WITHIN THE PROJECT STUDY AREA

Type of Habitat	Habitat Totals
Farmland/Pasture	36.89 acres
Man-dominated	46.20 acres
Forested	51.30 acres
Old Field	10.40 acres
Scrub-Shrub	10.64 acres
Total Land Area	150.92 acres

(a) Farmland/Pasture

The farmland/pasture vegetative land use is maintained at a constant state of succession by agricultural activities. This type of land is spread over approximately 25 percent of the study area (36.89 acres).

Within the cultivated fields there are many drainage ways and hedgerows. These features provide a diversity of habitat which is important to many species of wildlife.

There are seven Prime Farmsoils and seven Soils of Statewide Importance in the project study area. These soils are in nine different soil series and are described as follows:

- Rumford loamy sand
  - 2 to 5 percent slopes, RdB2, soil of statewide importance

  Rumford soil is a deep well-drained soil consisting of sand with some clay. Productivity is limited due to moisture and nutrient content. Productivity can be high using best management practices for control of moisture and fertility. Irrigation is necessary during prolonged dry periods. Rumford soil is best suited to tobacco and truck crops.

- Sassafras sandy loam
  - 2 to 5 percent slopes, ShB2, prime farmsoil

  Sassafras soil is deep, well-drained soil consisting of silty and clayey sand. Risk of erosion is moderate unless conservation measures are employed. The soil is well suited to general crops including corn, grains, truck crops and tobacco.

- Shrewsbury fine sandy loam
  - 0 to 2 percent slopes, SmA, soil of statewide importance
  - 2 to 5 percent slopes, SmB, soil of statewide importance

  Shrewsbury soil is fairly deep and poorly drained. It was developed in sandy and clayey material. This soil is good for farming if it is drained. Erosion can be a problem in the more steeply sloped areas. The best used include corn, hay and pasture grasses.

- Westphalia fine sandy loam
  - 2 to 6 percent slopes, WaB2, prime farmsoil
  - 6 to 12 percent slopes, WaC2, soil of statewide importance

  Westphalia soil is deep and well-drained. It developed from deposits of fine and very fine sand with small amounts of clay. Erosion can be severe

on steeper slopes. The soil is well suited to general crops but may need irrigation during long dry periods. Yields of corn and grains are very high and tobacco is of very high quality.

(b) Man-Dominated

This habitat type consists of approximately 46.20 acres within the project area. The habitat is typified by mowed aprons, residential lawns, parking lots, and other clear areas associated with the homes and business in the study area.

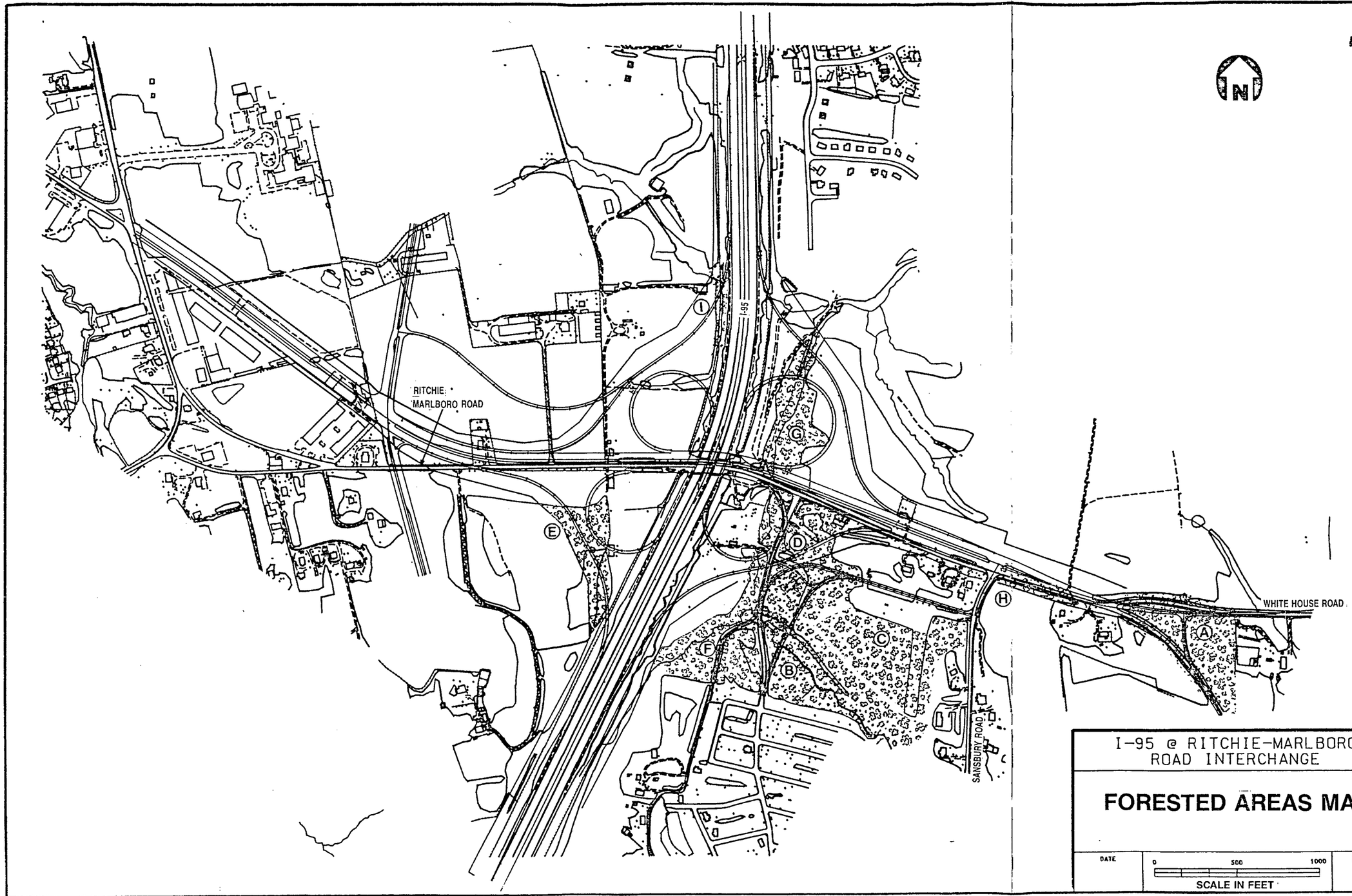
Plants found within this area are grasses and broadleaf herbaceous species capable of surviving a regular schedule of mowing. Exotic tree and shrub species, as well as remnant native trees, are utilized in this habitat for their aesthetic value.

The man-dominated habitat is generally found in the commercially and residentially developed areas, and on the state maintained aprons associated with roadways in the area. There are also pockets of man-dominated habitats associated with the farmland in the study area.

(c) Forested

The forested land within the study area is comprised of broad-leaved, deciduous species of trees. This habitat type occupies approximately 51.30 acres within the project area. Tree species typical of the general area are Acer rubrum (red maple), Liquidambar styraciflua (sweetgum), Quercus palustris (pin oak), Fagus grandifolia (American beech), Liriodendron tulipifera (yellow poplar), Platanus occidentalis (American sycamore) and several species of Quercus (oaks) and Carya (hickories). Forested areas are depicted on Figure 7.

Stand A is located east of the intersection of Ritchie-Marlboro Road and White House Road within the proposed right-of-way. The dominant tree species is yellow poplar (Liriodendron tulipifera), with frequent occurrences of red oak (Quercus rubra), white oak (Quercus alba), blackgum (Nyssa sylvatica), and pignut hickory (Carya glabra). The dominant trees in this stand



I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

FORESTED AREAS MAP

DATE

0 500 1000

SCALE IN FEET

FIGURE 7

are approximately 64 years old and the average basal area of the stand is 110 square feet per acre. In the understory, there are approximately 420 stems per acre greater than one inch and 1440 stems per acre less than one inch. The dominant understory species is paw-paw (Assimina triloba) with frequent occurrences of flowering dogwood (Cornus florida) and spicebush (Lindera benzoin).

Stand B is located east of Fernwood Drive and west of Sansbury Road. This stand extends south to the mobile home park and north to the base of a small ridge where there is a marked change in forest type. The dominant tree species is yellow poplar, with frequent occurrences of blackgum, sweetgum (Liquidambar styraciflua), American beech (Fagus grandifolia), red oak, Southern red oak (Quercus falcata), and white oak. The average basal area of the stand is 150 square feet per acre. In the understory, there are approximately 75 stems per acre greater than one inch and 160 stems per acre less than on inch. The dominant understory species are red maple (Acer rubrum), flowering dogwood, and ironwood (Carpinus caroliniana), with frequent occurrences of pignut hickory, American holly (Ilex opaca), and American beech.

Stand C is located on a small ridge adjacent to Stand B on the north side. The dominant tree species are Virginia pine (Pinus virginiana) and Southern red oak, with frequent occurrences of yellow poplar and white oak. The dominant trees in this stand are approximately 52 years old and the average basal area of the stand is 110 square feet per acre. In the understory, there are approximately 210 stems per acre greater than one inch and 30 stems per acre less than one inch. The dominant understory species is flowering dogwood, with frequent occurrences of red maple, American beech, ironwood, blackgum, Eastern red cedar (Juniperus virginiana), and sasfrass (Sasafrass albidum).

Stand D is located east of Fernwood Drive and west of Sansbury Road. It extends south from Ritchie-Marlboro Road to the ridge that forms the boundary of Stand C. The dominant tree species are yellow poplar and red maple, with frequent occurrences of sweetgum. The dominant trees in this

stand are approximately 60 years old and the average basal area of the stand is 90 square feet per acre. In the understory, there are approximately 100 stems per acre greater than one inch and 270 stems per acre less than one inch. The dominant understory species is spicebush, with frequent occurrences of blackgum, pignut hickory, red maple, sasfrass, and American beech.

Stand E is located west of I-95 and south of Ritchie-Marlboro Road within the proposed project area (southwest quadrant). The dominant tree species is yellow poplar, with frequent occurrences of red maple and sweetgum. The dominant trees in this stand are approximately 65 years old and the average basal area is 140 square feet per acre. In the understory, there are approximately 60 stems per acre greater than one inch and 170 stems per acre less than one inch. The dominant understory species is flowering dogwood, with frequent occurrences of pignut hickory, spicebush, red maple, blackgum, chokecherry (Prunus virginiana), and rhododendron (Rhododendron spp).

There are several smaller areas that contained trees exceeding the height and crown spread criteria for a particular species. Three yellow poplars and two blackgums were found in Stand F along Wetland 2 immediately east of I-95 (southeast quadrant). One red maple was found in Stand G along Wetlands 3 north of Ritchie Marlboro Road (northeast quadrant). Stand H is located along the southern edge of Ritchie Marlboro Road immediately east of Sansbury Road. Only the area within the proposed right-of-way was examined, although there are many large trees within the entire stand. Five yellow poplars, two red maples, and two sweetgums exceeding the height and crown spread criteria were found in this area. Stand I, a small forested area in the northwest quadrant, contained no large trees.

(d) Old Field

Old field habitat includes some agricultural areas that have been left fallow long enough that they have begun to revert to natural conditions. These areas may be returned to agricultural use in the future. At least two-thirds of the field must include herbaceous vegetation, grass, or grass-like vegetation to meet this classification. These areas are usually mowed once

a year or less. Approximately 10.40 acres of old field are found within the project area.

(e) Scrub - Shrub

Scrub-shrub habitat totalled approximately 10.64 acres within the project area. Vegetation within this classification consists of shrubs and small trees which generally have a diameter at breast height of five inches or less. This habitat is found in close proximity to the wetlands, and in areas that are difficult to maintain.

2. Aquatic Habitat

(a) Streams

Aquatic stream bottom habitat within the project area is limited. All of the streams in the study region are intermittent. The two small tributaries on the west side are seasonal in flow patterns and cannot provide adequate habitat for vertebrate organisms such as fish. The streams are believed to provide habitat for amphibian, reptilian, micro and macroinvertebrate organisms.

The tributary on the east side of Interstate 95 is more constant in flow patterns than those on the west side, but is still intermittent in nature, This stream is not large or reliable enough to provide proper habitat for fish. When field viewed on May 12, 1988, amphibian organisms were observed. Micro and macroinvertebrates are also expected to occur within the tributary.

(b) Wetlands

Wetlands were originally identified and delineated based on the methodology contained in the Corps of Engineers (COE) "Wetland Delineation Manual," on May 12, 13 and 16, 1988. Seven wetlands were identified and their boundaries were flagged. (See Figure 17.) Vegetation was defined based on indicators noted in the USFWS "1986 Wetland Plant List, Northeast Region." Hydric soils were identified using a hand auger and the "Munsell Soil Color Charts."

A field view with the Army Corps of Engineers was conducted on May 17, 1988, to obtain verification on wetland delineations and establish values for each wetland. Classification and values for wetlands are listed in Table 3. Field notes from the May 17, 1988, field view are in the Comments and Coordination Section.

Due to the subsequent adoption of the "Federal Manual for Identifying and Delineating Jurisdictional Wetlands" and also the expansion of the project area to be studied, the wetlands were re-examined on November 15, 16, and 28, 1989. Three additional wetlands were located in the expanded project area (Wetlands 8, 9, and 10). In addition, the boundary of Wetland No. 6 was expanded based on changes in the methodology. Boundaries of the other wetlands did not change substantially.

Wetlands within the project area have been identified by numbers 1 through 10, based on manmade features, for convenience. With the exception of Wetland 7, all wetlands are hydrologically connected and are part of a wetland system existing in the headwaters of a tributary to Southwest Branch. Wetland 7 is an isolated wetland. The locations of the wetlands, in relation to the project study area, are shown on Figure 17.

- Wetland #1 is a palustrine, forested, broad-leaved deciduous wetland. It is located south of Ritchie-Marlboro Road and east of Fernwood Drive, in the proposed location of the southeast directional ramp. Dominant vegetation species include Acre rubrum (red maple), Liquidambar styraciflua (sweetgum), and Lindera benzoin (spicebush). This wetland is a basin-shaped woodlot.

- Wetland #2 is a palustrine, forested/emergent, broad-leaved deciduous wetland. It is located south of Ritchie-Marlboro Road and between I-95 and Fernwood Drive, in the proposed location of the southeast loop ramp and the southeast directional ramp. Dominant vegetation species include Typha latifolia (cattail), Carex spp. (sedge), Liquidambar styraciflua, Salix

TABLE 3
WETLAND SUMMARY TABLE

Wetland Number	Location	Classification	Dominant Vegetation		Soil Series	Hydrologic Indicators	Area Within Right-of-way
			Common Name	Scientific Name			
1	SE of Interchange	PFO1A	red maple sweetgum spicebush	Acer rubrum Liquidambar styraciflua Lindera benzoin	Collington	Groundwater, Saturated Soil	1.50 acres
2	SE of Interchange	PFO1A/ PEM2B	cattail sedge sweetgum black willow pin oak slippery elm	Typha latifolia Carex spp. Liquidambar styraciflua Salix nigra Quercus palustris Ulmus rubra	Mixed Alluvial Land	Groundwater, Drainage patterns	1.93 acres
3	NE of Interchange	PFO1A	red maple sweetgum pin oak sycamore slippery elm jack-in-the pulpit	Acer rubrum Liquidambar styraciflua Quercus palustris Platanus occidentalis Ulmus rubra Arisaema triphyllum	Mixed Alluvial Land	Groundwater, Drainage patterns	2.95 acres

TABLE 3
WETLAND SUMMARY TABLE
(Continued)

Wetland Number	Location	Classification	Dominant Vegetation		Soil Series	Hydrologic Indicators	Area Within Right-of-way
			Common Name	Scientific Name			
4	NE of Interchange	$P^{EM}_{SS}1B$	cattail soft rush sedge red maple willow sweetgum	Typha latifolia Juncus effusus Carex spp. Acer rubrum Salix spp. Liquidambar styraciflua	Collington	Groundwater, Drainage patterns	0.06 acre
5	NW of Interchange	$P^{SS}_{FO}1B$	willow sweetgum red maple Japanese honeysuckle	Salix spp. Liquidambar styraciflua Acer rubrum Lonicera japonica	Shrewsbury, Mixed Alluvial Land	Groundwater, Drainage patterns	1.84 acres
6	SW of Interchange	PSS1A	sweetgum willow red maple	Liquidambar styraciflua Salix spp. Acer rubrum	Shrewsbury	Groundwater, Saturated soils	0.87 acre
7	NW of Interchange	PEM1A	soft rush cattail	Juncus effusus Typha latifolia	Donlonton	Standing water	0.13 acre

TABLE 3
WETLAND SUMMARY TABLE
(Continued)

Wetland Number	Location	Classification	Dominant Vegetation		Soil Series	Hydrologic Indicators	Area Within Right-of-way
			Common Name	Scientific Name			
8	SE of Interchange	PFO1A	red maple tulip tree sweetgum arrowwood Japanese honeysuckle sensitive fern	Acer rubrum Liriodendron tulipifera Liquidambar styraciflua Viburnum dentatum Lonicera japonica Onoclea sensibilis	Sassafras	Groundwater, Drainage patterns	1.50 acres
9	SE of Interchange	PEM1A	sedge soft rush	Carex spp. Juncus effusus	Mixed Alluvial Land	Groundwater, Some surface water	0.07 acre
10	SW of Interchange	PFO1A	red maple tulip tree sweetgum spicebush	Acer rubrum Liriodenron tulipifera Liquidambar stydraciflua Lindera benzoin	Shrewsbury	Standing water	0.25 acre

nigra (black willow), Quercus palustris (pin oak), and Ulmus rubra (slippery elm). This wetland is associated with a small stream.

- Wetland #3 is a palustrine, forested, broad-leaved deciduous wetland. This area includes a woodlot and a littoral zone of a stream. It is located north of Ritchie-Marlboro Road and east of I-95, in the proposed location of the northeast loop ramp and the northeast directional ramp. Dominant vegetation species include Acer rubrum, Liquidambar styraciflua, Quercus palustris, Platanus occidentalis (sycamore), Ulmus rubra and Arisaema triphyllum (jack-in-the-pulpit).

- Wetland #4 is a palustrine, emergent/scrub-shrub, broad-leaved deciduous wetland. It is located north of Ritchie-Marlboro Road and east of I-95, in the proposed location of the northeast loop ramp. Dominant vegetation species include Typha latifolia, Juncus effusus (soft rush), Carex spp., Acer rubrum, Salix spp. (willow), and Liquidambar styraciflua. Wetland #4 is located in a drainage area associated with I-95 and Ritchie-Marlboro Road.

- Wetland #5 is a palustrine, scrub-shrub, broad-leaved deciduous wetland. It is located north of Ritchie-Marlboro Road and west of I-95, in the proposed location of the northwest loop ramp and the northwest directional ramp. Dominant vegetation species include Salix spp., Liquidambar styraciflua, Acer rubrum, and Lonicera japonica (Japanese honeysuckle). Wetland #5 is associated with a small stream, several drainage areas, and a small woodlot and hedge row.

- Wetland #6 is a palustrine, scrub-shrub, broad-leaved deciduous wetland. This wetland includes a littoral zone of a small stream and a hedge row/drainage area. It is located south of Ritchie-Marlboro Road and west of I-95, in the proposed location of the southwest loop ramp. Dominant

vegetation species include Liquidambar styraciflua, Salix spp., and Acer rubrum.

- Wetland #7 is a palustrine, emergent, persistent wetland. It is located north of the existing Ritchie-Marlboro Road and west of I-95, in the location of the proposed Ritchie-Marlboro Road (relocated). Dominant vegetation species include Juncus effusus and Typha latifolia. This wetland has been established in an area that appears to have been disturbed by human activity including placement of fill.

- Wetland #8 is a palustrine, forested, broad-leaved deciduous wetland adjacent to a stream. It is located south of Ritchie-Marlboro Road and east of I-95, in the location of the proposed right-of-way for Relocated Fernwood Drive, adjacent to the southeast directional ramp. Dominant vegetation species include Acer rubrum, liriodendren tulipifera (tulip tree(, liquidambar styraciflua, Viburnum dentatum (arrowwood), Lonicera japonica and Onoclea sensibilis (sensitive fern).

- Wetland #9 is a palustrine emergent wetland, It is located south of Ritchie-Marlboro Road and east of I-95, in the location of the proposed right-of-way for Relocated Fernwood Drive, adjacent to the southeast directional ramp. Dominant vegetation species include Carex spp. and Juncus effusus. The area appears to be mowed during the growing season bur wetland vegetation is apparent.

- Wetland #10 is a palustrine, forested, broad-leaved deciduous wetland. It is located south of Ritchie-Marlboro Road and east of I-95, in the proposed location of the southwest loop ramp and the southwest directional ramp. Dominant vegetation species include Acer rubrum, Liriodendren tulipifera, Liquidambar styraciflua and Lindera benzoin. Wetland #10 has been severely degraded by the dumping of solid waste.

3. Wildlife

Vegetative habitats within the study area support a variety of wildlife. Although the area is in the process of becoming urbanized, there is a wide variety of habitat that can be utilized by wildlife. Wildlife utilize these habitats for feeding, cover, and travelways. It is expected that some small birds and mammals utilize the habitats within the study area on a constant basis while the larger and more mobile animals, such as the white-tailed deer, use the study area for feeding and travelways.

Some wildlife species that may utilize all of the habitat types available, including man-dominated areas, are: cottontail rabbit, opossum, raccoon, and striped skunk. Other species that are more rural and need a higher degree of cover are: red fox, grey fox, and white-tailed deer.

The old field, fence row, and shrub-scrub types of habitats would be expected to support populations of woodchucks, cottontail rabbit, meadow vole, and the meadow jumping mouse. These species also occur in areas that are primarily agricultural, but at reduced densities.

Within the study area, the forested habitat is mainly found in association with the streams and wetlands. This combination can provide a diversity of habitat attractive to many species of wildlife such as raccoon, muskrat, and woodduck. The upland forested habitat would be expected to support populations of grey squirrel, white-footed mouse, and the eastern chipmunk.

Many species of birds are expected to utilize the study area habitats for nesting, resting, and feeding. There is ample habitat for both ground-nesting and arboreal species of birds, but birds nesting within the study area may be restricted to species tolerant to traffic noise. The streams and wetlands of the area are expected to be utilized by many species of birds; wading birds and waterfowl are not expected to use the area extensively because of the small size of the streams.

4. Threatened, Endangered, or Rare Species - Flora and Fauna

Within the project area there is a variety of wildlife habitat. Written coordination regarding the presence of threatened, endangered, or rare species

is contained in the Comments and Coordination Section. Confirmation that no known federally listed threatened, endangered, or rare species exist within the project area has been received from the U.S. Fish and Wildlife Service (USFWS). Coordination with Maryland Department of Natural Resources indicates one historic record of the State-endangered plant Bidens discoidea. Although there is one historic record of the endangered plant, no individuals were discovered during the field work in the project area. No other threatened or endangered species are recorded in the project area.

6. Existing Air Quality

The I-95 Ritchie-Marlboro Road interchange project is within the National Capital Intrastate Air Quality Control Region. The region does not meet the primary standards for carbon monoxide (CO) and is subject to transportation control measures such as the Vehicle Emissions Inspections Programs.

A detailed microscale air quality analysis has been performed to determine the CO impact of the proposed project which is described in further detail in Section IV-F.

7. Existing Noise Conditions

Four (4) Noise Sensitive Areas (NSA's) were identified in the study area. Descriptions of the NSA's along with the ambient levels recorded are included in Table 4. The locations of the NSA's are shown on the alternates mapping, Figure 12.

TABLE 4
NOISE SENSITIVE AREAS

NSA	DESCRIPTION	AMBIENT LEVEL, Leq
1	Two-story Brick Duplex on Ritchie-Marlboro Road	71 dBA
2	Fernwood Mobile Home Park	67 dBA
3	One-story Single Family Residence, 1657 Ritchie-Marlboro Road	71 dBA
4	Greenwood Manor Park - Near Proposed Right-of-way	67 dBA

The noise levels in this analysis are expressed in terms of an Leq noise level, which is the energy-averaged noise level for a given time period. All ambient and predicted noise levels in this document are Leq exterior noise level unless otherwise noted.

In an acoustical analysis, measurement of ambient noise levels is intended to establish the basis for impact analysis. The ambient noise levels, as recorded, represent a generalized view of present noise levels. Variations with time of total traffic volume, truck traffic volumes, speed, etc. may cause fluctuations in ambient noise levels of several decibels. However, for the purposes of impact assessment, these fluctuations are usually not sufficient to significantly affect the assessment.

It was determined that for these NSA's, the most typical noise conditions occur during the non-rush hour period (9:00 a.m. - 4:00 p.m.). During this time, the highest noise levels are experienced for the greatest length of time.

To determine existing noise levels within the project area, an on-site noise monitoring program was conducted on January 17, 1990. Monitoring was performed between 9 a.m. and 3 p.m.

A total of four sites were monitored. Measurements were made for 15 minutes at each location utilizing a Metrosonics db-308 Sound Level Dosimeter/Analyzer, which automatically records and calculates noise exposure in a wide range of formats.

NEED FOR PROJECT

II. NEED FOR THE PROJECT

A. Purpose

The purpose of this study is to verify and document the need for an interchange between I-95 (Capital Beltway) and Ritchie-Marlboro Road in Prince George's County, Maryland. The proposed interchange would be located about 1.6 miles south of the I-95/MD 214 interchange and about 2.4 miles north of the I-95/MD 4 interchange.

I-95 serves as the eastern portion of the Capital Beltway and provides direct access to points north and south of the Washington, D.C. Metropolitan area. The facility also serves commuter traffic and local trips within the Washington, D.C. Metropolitan area. New interchange access to I-95 at Ritchie-Marlboro Road serves to balance the distribution of trips being made off and on I-95 at the adjacent I-95/MD 214 and I-95/MD 4 interchanges.

These existing interchanges will not provide adequate capacities to serve as the only access points for the developing employment areas located between MD 214 on the north, MD 4 on the south, Ritchie Road/Forestville Road on the west, and I-95 on the east. Existing and worsening congestion at the adjacent I-95/MD 214 and I-95/MD 4 interchanges and the connecting local roadway system would be alleviated by implementing the proposed I-95/Ritchie-Marlboro Road interchange. (See Section C, Existing and Projected Traffic Conditions, for more discussion.)

Both the I-95/MD 214 and I-95/MD 4 interchanges are experiencing accident rates significantly higher than the statewide averages for similar facilities. (See Section D, Existing and Projected Safety Conditions, for more discussion.)

Currently, traffic bound for the Ritchie-Marlboro Road area from I-95 exits at two points:

- At MD 214, traffic travels west to Ritchie Road and south to Ritchie-Marlboro Road.
- At MD 4, traffic travels west to Forestville Road, north to Ritchie Road, and north to Ritchie-Marlboro Road. (An alternate route from MD 4 is east on MD 4 to Westphalia, to D'Arcy Road, and either north and west, over I-95, to Ritchie Road, or north to Sansbury Road to Ritchie-Marlboro Road.)

Under a "No-Build" Alternate, the interchanges of I-95 at MD 214 and at MD 4 will have to accommodate the traffic volume growth brought about by the planned industrial

development. These interchanges are already experiencing operation problems and high accident rates with today's traffic and therefore will not adequately handle this planned growth.

B. Project History

Functional Classification

I-95

State: Principal Arterial

Federal: Interstate

Ritchie-Marlboro Road

State: Major Collector

Federal: Minor Arterial

Consolidated Transportation Program

The study of an interchange on I-95 at Ritchie-Marlboro Road first appeared in the 1987-1992 Consolidated Transportation Program, Interstate Development and Evaluation Program and has been included in all subsequent programs.

Highway Needs Inventory

The I-95/Ritchie-Marlboro Road interchange first appeared in the 1971-1990 Highway Needs Inventory (HNI). It was also identified in the 1973-1992 HNI. The interchange was not included in the 1975-1994 or 1976-1998 HNI; however, it was included in the 1977-1996 HNI. It has been included in all subsequent HNI's since 1979.

Master Plan History: Conformance with Local Plans and Projects

The 1982 Prince George's County General Plan, developed by the Maryland-National Capital Park and Planing Commission (M-NCP&PC), identifies a new interchange at I-95 and Ritchie-Marlboro Road. Ritchie-Marlboro Road was also identified for improvement to an arterial.

In M-NCP&PC's 1985 Suitland - District Heights and Vicinity Master Plan (Planning Areas 75A and 75B), this interchange is identified to serve traffic

generated by the planned employment areas adjoining I-95 between Central Avenue (MD 214) and Pennsylvania Avenue (MD 4). Ritchie-Marlboro Road is also identified to be upgraded to an arterial.

The interchange is identified in the November 1989 Preliminary Master Plan Amendment for Largo-Lottsford.

A-36, White House Road/Ritchie-Marlboro Road, is identified in M-NCP&PC's Largo-Lottsford Master Plan to be upgraded to a four to six-lane arterial from I-95 to MD 202.

Background

I-95 (Capital Beltway) is an eight-lane, divided highway with a 50'± median and 10-foot stabilized shoulders. The horizontal and vertical alignment meets American Association of State Highway Transportation Officials (AASHTO) design criteria for 70 m.p.h. Some of the rights-of-way for the proposed interchange has been dedicated by developers. Except for the addition of acceleration/deceleration lanes, and a weave lane between the loop ramps, I-95 would not change.

Ritchie-Marlboro Road is a two-lane roadway with varying width stabilized shoulders.

White House Road is currently a two-lane, east/west roadway from Ritchie-Marlboro Road east to MD 202 (Largo Road). According to the Prince George's County Master Plan, White House Road will become the through road east of Sansbury Road.

Fernwood Drive is an existing two-lane roadway intersecting Ritchie-Marlboro Road approximately 500' east of the I-95 bridge. This road is the northern access point to the Fernwood Mobile Home Park.

Significant changes have occurred in the project area and in the entire Washington metropolitan area in recent years. Intense development has occurred in the MD 214 corridor (north of the I-95/Ritchie-Marlboro grade separation).

Several Prince George's County roadway projects in the project area are scheduled for construction within the next 5 years. These include the construction of Ritchie Road from approximately 0.7 mile south of western project terminus to approximately 0.5 mile north of the western project terminus. This project would

upgrade Ritchie Road from a 2-lane facility to a 5-lane street section or 6-lane divided highway. Another project is the reconstruction of Walker Mill Road. This project would begin at Ritchie Road and continue westerly for approximately 3 miles. This project would upgrade Walker Mill Road from a 2-lane facility to a 6-lane divided highway.

C. Existing and Projected Traffic Conditions

	Ritchie Marlboro Road	I-95
1987		
Average Daily Traffic	10,200	137,000
Design Hour Volume	11%	8%
Directional Distribution	59%	55%
Truck Percentage - ADT	9%	11%
Truck Percentage - DHV	6%	4%

See Figure 8

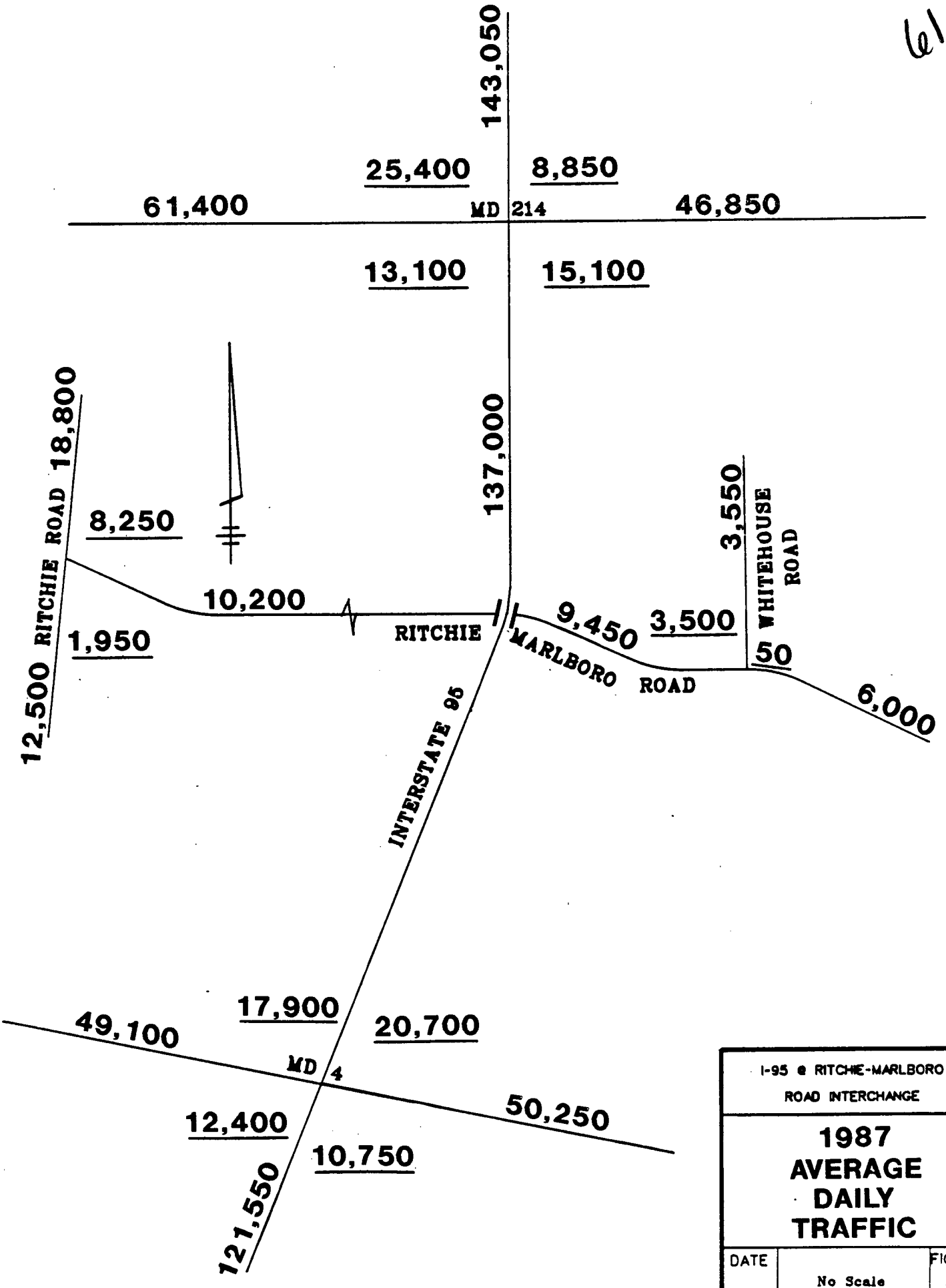
2015 No-Build		
Average Daily Traffic	21,000	170,000
Design Hour Volume	9%	8%
Directional Distribution	59%	60%
Truck Percentage - ADT	9%	11%
Truck Percentage - AHV	6%	4%

See Figure 9

2015 Build		
Average Daily Traffic	47,900	170,000
Design Hour Volume	8%	8%
Directional Distribution	62%	56%
Truck Percentage - ADT	9%	11%
Truck Percentage - DHV	6%	4%

See Figure 10

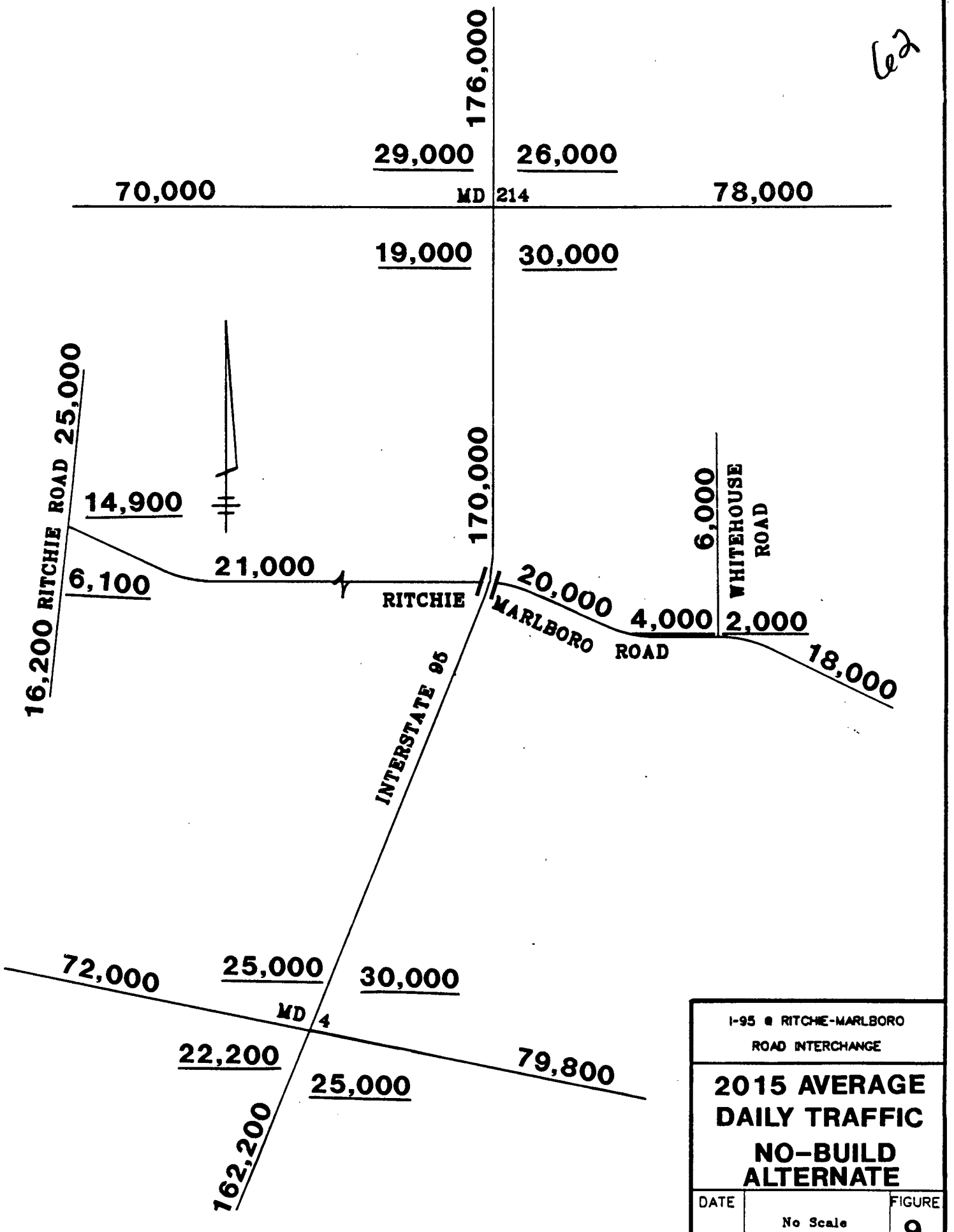
The existing and forecasted Average Daily Traffic (ADT) volumes for the proposed interchange are shown on Figure 11. All volumes are ADT with both directions combined.



I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

1987 AVERAGE DAILY TRAFFIC

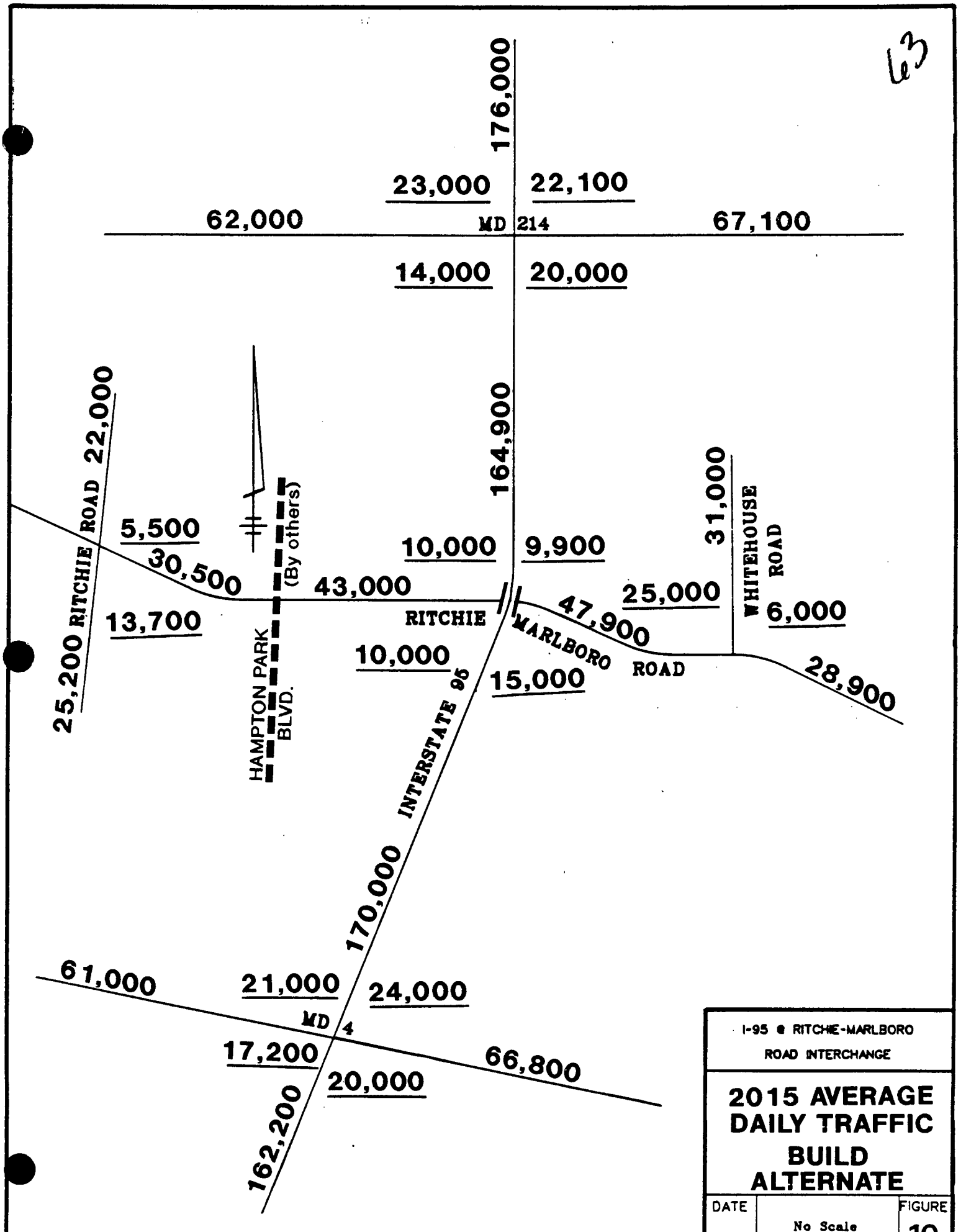
DATE		FIGURE
	No Scale	8



I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

2015 AVERAGE DAILY TRAFFIC NO-BUILD ALTERNATE

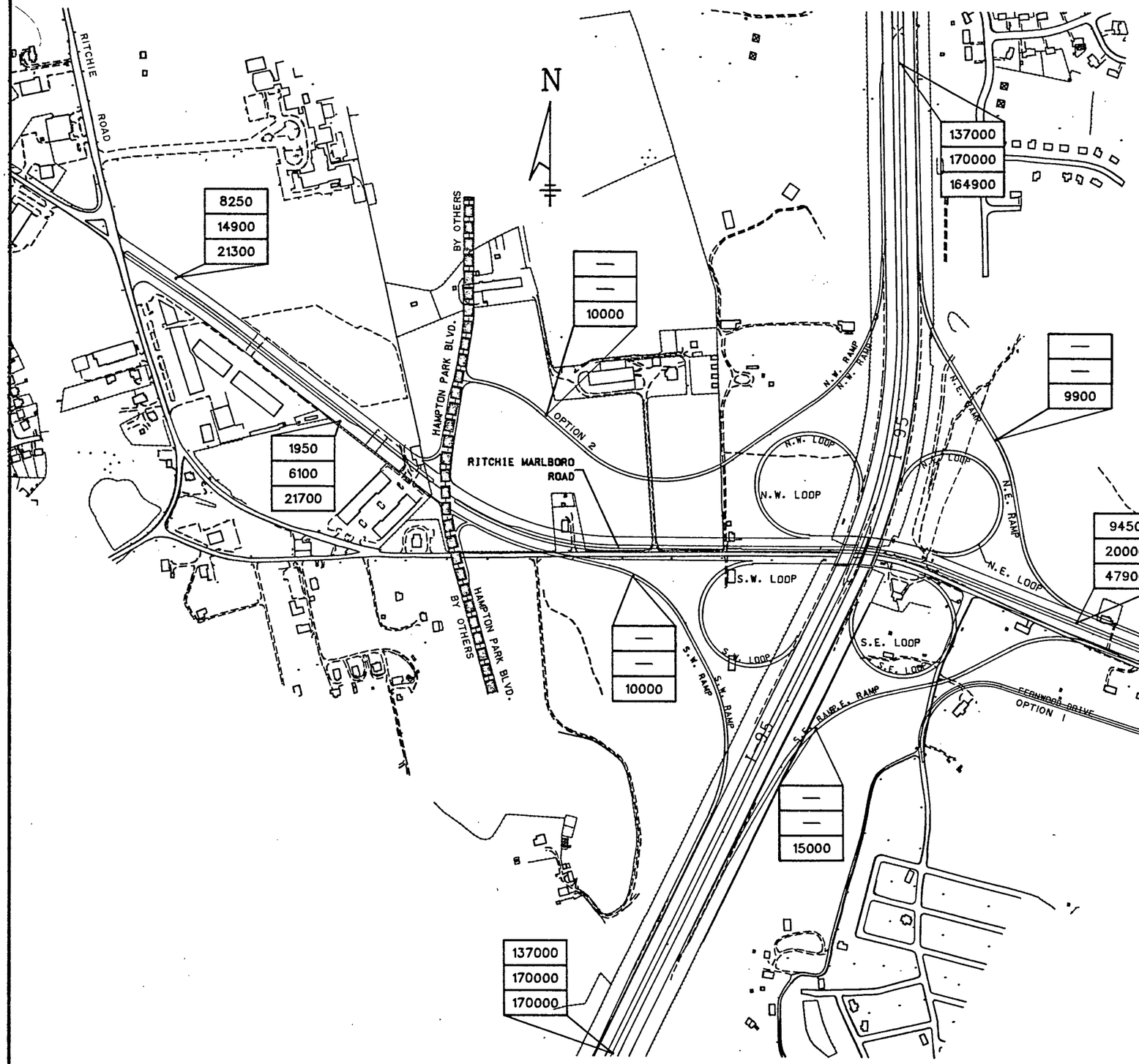
DATE		FIGURE
	No Scale	9



I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

2015 AVERAGE DAILY TRAFFIC BUILD ALTERNATE

DATE		FIGURE
	No Scale	10



LEGEND

9450	1987 ADT
12000	2015 ADT (NO BUILD)
15500	2015 ADT (BUILD)

I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

TRAFFIC VOLUMES

AVERAGE DAILY TRAFFIC

DATE		FIGURE
	0 500 1000 SCALE IN FEET	11

An interchange at I-95/Ritchie-Marlboro Road will ease traffic congestion on MD 214 and MD 4 by redirecting a portion of traffic to this new interchange. Figures 12 and 13 illustrate the a.m. and p.m. peak hours for the 2015 No-Build and Build scenarios. The I-95/Ritchie-Marlboro Road interchange would decrease the traffic volumes by an average of 20 percent at the MD 214 and MD 4 interchanges.

This decrease in traffic volumes translates into an improved level of service for MD 214 and MD 4. The levels of service for these two roadways were generally increased by one letter and the V/C ratios (the ratio of demand flow rate to capacity for a traffic facility) were decreased by an average of 20%. (Table 5 summarizes these findings.)

TABLE 5
MD 214 AND MD 4 TRAFFIC ANALYSIS

SEGMENT	TIME	CONDITION	V/C	LOS
MD 214 EB @ I-95				
	2015 No-Build	a.m. Peak	0.76	D
	2015 Build	a.m. Peak	0.59	C
	2015 No-Build	p.m. Peak	1.21	F
	2015 Build	p.m. Peak	1.04	F
MD 214 WB @ I-95				
	2015 No-Build	a.m. Peak	0.91	E
	2015 Build	a.m. Peak	0.73	D
	2015 No-Build	p.m. Peak	0.62	C
	2015 Build	p.m. Peak	0.46	C
MD 4 EB @ I-95				
	2015 No-Build	a.m. Peak	0.67	C
	2015 Build	a.m. Peak	0.59	C
	2015 No-Build	p.m. Peak	1.18	F
	2015 Build	p.m. Peak	0.99	E
MD 4 WB @ I-95				
	2015 No-Build	a.m. Peak	1.11	F
	2015 Build	a.m. Peak	0.97	E
	2015 No-Build	p.m. Peak	0.63	C
	2015 Build	p.m. Peak	0.52	C

Similarly, the ramps to and from MD 214 and MD 4 had an improved level of service of one letter for the build condition. Also, the ramp volumes were decreased by approximately 20% for the build condition. (Table 6 summarizes these findings.)

The volumes for I-95 traffic were not decreased much for the build condition. This is because the predominant movement on the Capital Beltway is the through movement. Consequently the volumes and levels of service for I-95 realized only a slight improvement for the build alternate.

Level of Service describes traffic operating conditions, and varies primarily with traffic volumes and number of lanes. It is a measure of such factors as speed, traffic interruptions or restrictions, and freedom to maneuver. Six levels of service, designated A through F, from best to worst have been established to identify traffic operations (Highway Capacity Manual, 1985). Level of Service A represents a condition of relatively free flow (low volumes and higher speeds). Levels B and C describe conditions involving stable flow but increasing restrictions on operating speeds and maneuvering. Level of Service D approaches unstable flow (tolerable delays in the case of urban streets) while Level of Service E volumes are at or near capacity of the highway. Level of Service F represents conditions below capacity in which there are recurring operational breakdowns with forced flow.

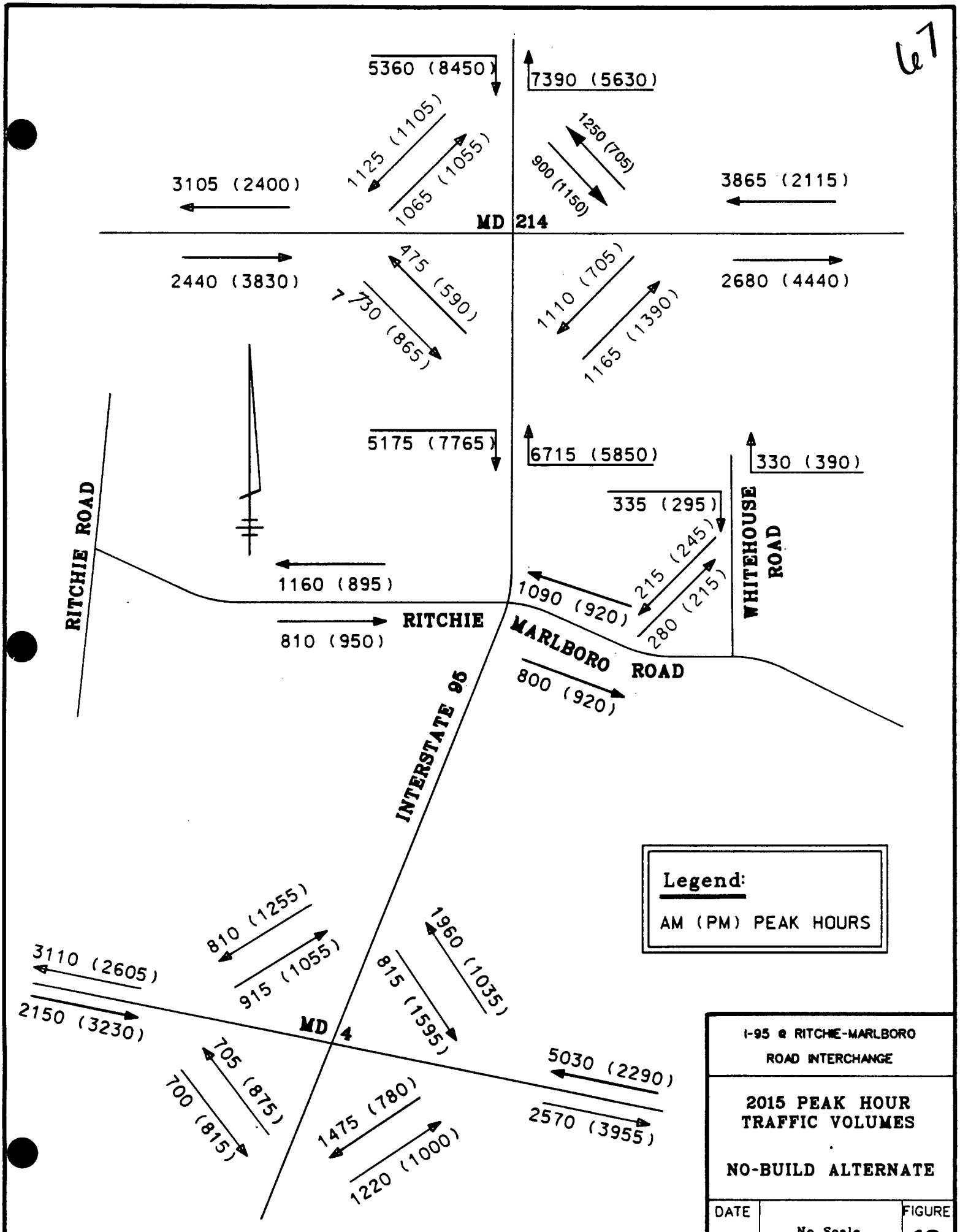
Correspondingly, construction of an interchange at I-95/Ritchie-Marlboro Road will result in a graduated decrease in traffic volumes along the local roadway network described earlier from a maximum of 20 percent at MD 214 (MD 4) to zero percent at a point approximately midway between MD 214 (MD 4) and Ritchie-Marlboro Road.

D. Accident Statistics

Accident data compiled for this study cover the period 1986 through mid-August 1989. 1989 data are not for a complete year. These data were not used in calculating the accident rates.

I-95 Proposed Interchange Area

I-95 from 0.5 mile north to 0.5 mile south of the Ritchie-Marlboro Road underpass experienced a total of 109 accidents during the study period of 1986 through approximately mid-August 1989 which resulted in a rate of 56 accidents per

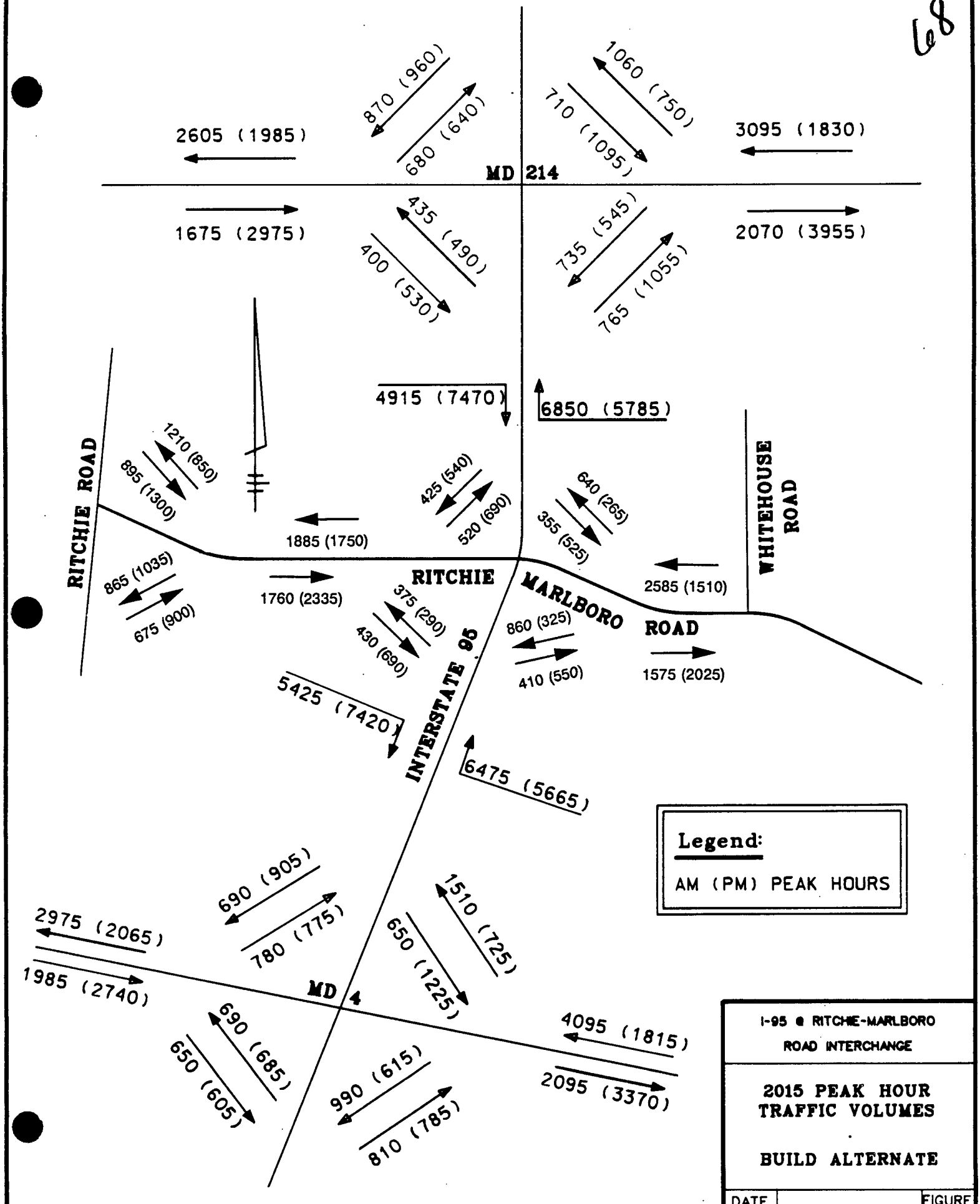


I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

2015 PEAK HOUR TRAFFIC VOLUMES

NO-BUILD ALTERNATE

DATE		FIGURE
	No Scale	12



I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

2015 PEAK HOUR TRAFFIC VOLUMES

BUILD ALTERNATE

DATE		FIGURE
	No Scale	13

TABLE 6
RAMP ANALYSIS
AT MD 214 AND MD 4

SEGMENT	TIME	CONDITION	LOS
I-95/MD 214 Interchange			
NWON	2015 No-Build	a.m. Peak	D
	2015 Build	a.m. Peak	D
	2015 No-Build	p.m. Peak	D
	2015 Build	p.m. Peak	C
SWOF	2015 No-Build	a.m. Peak	C
	2015 Build	a.m. Peak	B
	2015 No-Build	p.m. Peak	F
	2015 Build	p.m. Peak	D
SEON	2015 No-Build	a.m. Peak	D
	2015 Build	a.m. Peak	C
	2015 No-Build	p.m. Peak	F
	2015 Build	p.m. Peak	F
NEOF	2015 No-Build	a.m. Peak	F
	2015 Build	a.m. Peak	D
	2015 No-Build	p.m. Peak	C
	2015 Build	p.m. Peak	C
I-95/MD 4 Interchange			
NWON	2015 No-Build	a.m. Peak	C
	2015 Build	a.m. Peak	D
	2015 No-Build	p.m. Peak	D
	2015 Build	p.m. Peak	C
SWOF	2015 No-Build	a.m. Peak	C
	2015 Build	a.m. Peak	C
	2015 No-Build	p.m. Peak	D
	2015 Build	p.m. Peak	C
SEON	2015 No-Build	a.m. Peak	F
	2015 Build	a.m. Peak	C
	2015 No-Build	p.m. Peak	F
	2015 Build	p.m. Peak	E
NEOF	2015 No-Build	a.m. Peak	F
	2015 Build	a.m. Peak	F
	2015 No-Build	p.m. Peak	C
	2015 Build	p.m. Peak	C

one hundred million vehicle miles of travel (acc/100mvm). This rate is lower than the statewide average of 75 acc/100mvm for similarly designed highways now under state maintenance. These accidents resulted in an accident cost of approximately $400,000/100mvm.

Of the total accidents, 49% occurred during nighttime hours. There were no high accident locations within this section.

Ritchie-Marlboro Road

Ritchie-Marlboro Road from Old Marlboro Pike to Ritchie Road experienced a total of 120 accidents during the study period and resulted in an accident rate of 218 acc/100mvm. This rate is just slightly higher than the statewide average rate of 202 acc/100 mvm for similarly designed highways now under state maintenance. These accidents resulted in an accident cost of approximately $3 million/100 mvm.

Please note that the countywide average accident rates have not been developed. We have compared this section to the statewide average rate for this type of design highway.

Opposite direction and left-turn collisions significantly exceeded their respective statewide average rates. Angle collisions were high, but not at a significant level. Of the total accidents, 38% occurred on wet surfaces.

White House Road

White House Road from MD 202 to Ritchie-Marlboro Road experienced a total of 43 accidents during the study period. These accidents resulted in a rate of 456 acc/100mvm. This is significantly higher than the statewide average rate of 159 acc/100mvm for similarly designed highways now under state maintenance. The cost resulting from these accidents is approximately $5.4 million/100mvm.

Countywide average accident rates have not been developed. We have compared this section to the statewide average rate for this type of design highway.

Angle, fixed object, opposite direction, sideswipe, pedestrian and parked vehicle collisions significantly exceeded their respective statewide average rates. Left turn collisions were high but not at a significant level.

I-95 Through the MD 214 Interchange

I-95 from 0.5 mile north to 0.5 mile south of the MD 214 interchange experienced a total of 370 accidents during the study period which resulted in a rate of 204 acc/100mvm. This rate is significantly higher than the statewide average rate of 75 acc/100mvm for similarly designed highways now under state maintenance. These accidents resulted in an accident cost of approximately $1.8 million/100mvm.

There were three fatal accidents within this section. The first fatal accident was a sideswipe collision which occurred on northbound I-95 in 1986. The second was a rear end collision which occurred on southbound I-95 in 1988. The third fatality occurred in 1989 resulting from a southbound vehicle crossing the median on I-95 and hitting a northbound vehicle head-on.

The collision types which significantly exceeded the statewide average rates are read end, fixed object, opposite direction, sideswipe, left-turn and parked vehicle collisions. Also, 55% of the total accidents in this segment occurred during nighttime hours.

MD 214 Through the I-95 Interchange

MD 214 from 0.5 mile east to 0.5 mile west of the I-95 interchange experienced a total of 315 accidents during the study period which resulted in a rate of 455 acc/100mvm. This is significantly higher than the statewide average rate of 375 acc/100mvm for similarly designed highways now under state maintenance. These accidents resulted in an accident cost of approximately $4.9 million/100mvm.

There were three fatal accidents within the section. Of the two fatal accidents which occurred in 1987, one was rear end collision near Brightseat Road and the other was a fixed object collision near the I-95 overpass. The third fatal accident was a rear end collision which occurred in 1988 in the Hampton Park Boulevard area.

Rear end, sideswipe, and left turn collisions significantly exceeded their respective statewide average rates. Pedestrian accidents were high, but not at a significant level. Of the total accidents, 46% occurred during nighttime hours.

There were three sections within the study limits of the I-95/MD 214 interchange which qualified as High Accident Sections. These are listed below:

MD 214/Brightseat Road Area	-	1986	-	63 accidents
MD 213/I-95 Interchange Area	-	1987	-	59 accidents
I-95/MD 214 Interchange Area	-	1986	-	78 accidents
	-	1987	-	71 accidents
	-	1988	-	70 accidents.

MD 214 and Brightseat Road qualified as a High Accident Intersection in 1986 with 49 accidents, and again in 1987 with 35 accidents.

The I-95/MD 214 interchange had four ramps which met the criteria to be considered as High Accident Interchange Ramps. These are listed below:

W/B MD 214 to N/B I-95	-	1987	-	3 accidents
N/B I-95 to E/B MD 214	-	1987	-	3 accidents
S/B I-95 to W/B MD 214	-	1987	-	3 accidents
W/B MD 214 to S/B I-95	-	1988	-	3 accidents.

I-95 Through the MD 4 Interchange

I-95 from 0.5 mile north to 0.5 mile south of the MD 4 interchange experienced a total of 206 accidents during the study period which resulted in a rate of 114 acc/100mvm. This rate is significantly higher than the statewide average rate of 75 acc/100mvm for similarly designed highways now under state maintenance. These accidents resulted in an accident cost of approximately $1.1 million/100mvm.

There were two fatal accidents within this section. The first occurred in 1987 involving a rear end collision on northbound I-95. The second fatal accident was in 1988 involving a vehicle hitting a pedestrian on southbound I-95. Both fatal accidents occurred at the MD 4 interchange.

Rear end, sideswipe, pedestrian and parked vehicle collisions significantly exceeded their respective statewide average rates. Fixed object collisions were high, but not significantly so.

MD 4 Through the I-95 Interchange

MD 4 from 0.5 mile north to 0.5 mile south of the I-95 interchange experienced a total of 190 accidents during the study period which resulted in a rate of 310 acc/100mvm. This is significantly higher than the statewide average rate of

240 acc/100mvm for similarly designed highways now under state maintenance. These accidents resulted in an accident cost of approximately $2.7 million/100mvm.

There was one fatal accident within this section. This was a fixed object collision which occurred in 1988 near the I-95 interchange.

Rear end and sideswipe collisions significantly exceeded their respective statewide average rates. Angle and pedestrian accidents were high, but not at a significant level.

Two ramps at this interchange met the criteria of a High Accident Interchange Ramp during the study period. These are listed below:

N/B I-95 to W/B MD 4	-	1986-1988	-	5 accidents
S/B I-95 to W/B MD 4	-	1986	-	4 accidents
	-	1987	-	3 accidents.

In addition, there were five locations that met criteria for high accident locations. These are listed below:

High Accident Sections

MD 4 - west of I-95	-	1986	-	28 accidents
MD 4 - east of I-95	-	1986	-	33 accidents
I-95 - MD 4 area	-	1987	-	41 accidents

High Accident Intersections

MD 4 at MD 714/Westphalia	-	1986	-	24 accidents
	-	1987	-	28 accidents
MD 4 at N. Forestville Rd.	-	1986	-	30 accidents
	-	1987	-	18 accidents.

Ritchie Road

Ritchie Road from Marlboro Pike to MD 214 experienced a total of 314 accidents during the study period which resulted in a rate of 431 acc/100mvm. This is significantly higher than the statewide average rate of 319 acc/100mvm for

similarly designed highways now under state maintenance. These accidents resulted in an accident cost of approximately $4.8 million/100mvm.

Countywide average accident rates have not been developed. We have compared this section to the statewide average rate for this type of design highway.

There were three fatal accidents within this section. Two fatal accidents occurred in 1987. One was an opposite direction collision at Ritchie Road and Sunny Lane. The other fatal accident involved a pedestrian being struck at the intersection of Marlboro Pike and Ritchie Road. The third fatal accident occurred in 1988 in the vicinity of Vineyard Road. The accident involved a vehicle striking a fixed object.

Angle, rear end, fixed object and opposite direction collisions significantly exceeded their respective statewide average rates. Left turn and parked vehicle collisions were high but not at a significant level. Of the total accidents, 45% occurred on wet surfaces.

Table 7 highlights the above data and illustrates the fact that I-95, MD 214, and MD 4 are experiencing accident rates significantly higher than the statewide average for similarly designed facilities. (Numbers represent accidents per 100 million vehicle miles.)

TABLE 7
ACCIDENT ANALYSIS

Roadway	Accident Rate	Statewide Average
I-95 thru MD 214 Interchange	204	75
MD 214 thru I-95 Interchange	455	375
I-95 thru MD 4 Interchange	114	75
MD 4 thru I-95 Interchange	310	240

I-95, under the No-Build Alternate, in the vicinity of Ritchie-Marlboro Road, is currently experiencing an accident rate lower than the statewide average accident rate. Ritchie-Marlboro Road is currently experiencing an accident rate that is slightly higher than the statewide average. This area is planned for intense development in the near future. This development includes commercial, industrial, and residential proposals. The increased traffic volumes generated by this development will worsen existing accident problems at the adjacent I-95 interchanges under the No-Build Alternate.

The Build Alternate proposes an I-95 interchange in the area of Ritchie-Marlboro Road. This interchange would provide a third access to the developing area, and would alleviate some of the traffic congestion already experienced at the MD 214 and MD 4 interchanges.

The Build Alternate proposes the reconstruction of Ritchie-Marlboro Road to a six-lane, divided highway with no control of access outside the limits of the interchange. Ritchie-Marlboro Road can then be expected to experience an accident rate of approximately 145 acc/100mvm of travel.

ALTERNATES CONSIDERED

III. ALTERNATES CONSIDERED

A. Alternates Dropped from Consideration

The following alternates were presented at the Alternates Public Meeting but were dropped from consideration because they did not provide adequate traffic operation (Level of Service D) in the design year (2015).

1. Alternate 2

Alternate 2 consisted of the construction of a spread diamond type interchange, utilizing the existing dual structures to carry I-95 over Ritchie-Marlboro Road. Ramps would be located to permit the ultimate expansion to a full cloverleaf interchange. Ritchie-Marlboro Road would be widened to four lanes (two through lanes in each direction) (see Figure 14). This alternate would not adequately handle the projected traffic volumes for 2015. The 4-lane restriction along Ritchie-Marlboro Road would operate at Level of Service F along that roadway.

2. Alternate 3

Alternate 3 consisted of the construction of a spread diamond type interchange, with a new structure carrying I-95 over Ritchie-Marlboro Road. Ramps would be located to permit the ultimate expansion to a full cloverleaf interchange. Ritchie-Marlboro Road would be reconstructed to a six-lane dual curbed highway (see Figure 15). This alternate would not adequately handle the projected traffic volumes for 2015. The east and west side ramp intersections with Ritchie-Marlboro Road would operate at Level of Service E.

3. Alternate 3-A

Alternate 3-A was the same as Alternate 3 except that the existing bridges carrying I-95 over Ritchie-Marlboro Road would be extended. The south abutments and all piers would be salvaged. Sight distance constraints at the existing bridge piers could result in a lower posted speed for the reconstructed Ritchie-Marlboro Road than for Alternate 3 (see Figure 15).

This alternate would not adequately handle the projected traffic volumes for 2015. The east and west side ramp intersections with Ritchie-Marlboro Road would operate at Level of Service E.

4. Alternate 4

Alternate 4 consisted of the construction of a partial cloverleaf interchange with a new structure carrying I-95 over Ritchie-Marlboro Road. Diamond and loop ramps would be built on the northeast and southeast quadrants. Diamond ramps would be built on the west side and be located to permit the ultimate expansion to a full cloverleaf interchange. Ritchie-Marlboro Road would be constructed as a six-lane, dual curbed highway (see Figure 16). This alternate would not adequately handle the projected traffic volumes for 2015. The west side ramp intersection with Ritchie-Marlboro Road will operate at Level of Service E.

5. Alternate 4-A

Alternate 4-A was the same as Alternate 4 except that the existing bridges carrying I-95 over Ritchie-Marlboro Road would be extended. The south abutments and all piers would be salvaged. Sight distance constraints at the existing bridge piers could result in a lower posted speed for the reconstructed Ritchie-Marlboro Road than for Alternate 4 (see Figure 16). This alternate would not adequately handle the projected traffic volumes for 2015. The west side ramp intersection with Ritchie-Marlboro Road will operate at Level of Service E.

6. Alternate 5-A

Alternate 5-A was the same as Alternate 5 except that the existing bridges carrying I-95 over Ritchie-Marlboro Road would be extended. The south abutments and all piers would be salvaged. Sight distance constraints at the existing bridge piers could result in a lower posted speed for the reconstructed Ritchie-Marlboro Road than for Alternate 5 (see Figure 17). This is considered an engineering option

LEGEND	
D	DISPLACEMENTS
W*	WETLAND AREA NUMBER
	WETLAND
N/A X	NOISE AND AIR RECEPTOR & NUMBER
	PROPOSED ROADWAY
	EXISTING ROADWAY
	PROPOSED RIGHT OF WAY LINE
	EXISTING RIGHT OF WAY LINE
	PARKLAND

RITCHIE DR.
H. WINSHIP WHEATLEY SPEC. ED. CTR.
WALKER MILL
BY OTHERS
HAMPTON PARK BLVD.
OPTION 2
Proposed ROW Line
Existing ROW Line
RITCHIE MARLBORD ROAD
RITCHIE ROAD
RITCHIE HEIGHTS
FORESTVILLE PARK
RITCHIE MD.
BY OTHERS HAMPTON PARK BLVD.
S.W. RAMP
S.E. RAMP
N.W. RAMP
N.E. RAMP
I-95
GREENWOOD MANOR PARK
FERNWOOD DRIVE OPTION 1
BAUMAN RD.
ACORN PARK ST.
BEACH PARK
FERNWOOD TRAILER PARK
SANSBURY RD.
WHITE HOUSE RD.
RITCHIE MARLBORO ROAD
N/A 1
N/A 2
N/A 3
N/A 4
W1 W2 W3 W4 W5 W6 W7 W8 W10

N

I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

SPREAD DIAMOND WITH 4-LANE RITCHIE MARLBORO ROAD (ALTERNATE 2)

DATE	0 500 1000 SCALE IN FEET	FIGURE 14

LEGEND	
D	DISPLACEMENTS
W*	WETLAND AREA NUMBER
	WETLAND
N/A *	NOISE AND AIR RECEPTOR & NUMBER
	PROPOSED ROADWAY
	EXISTING ROADWAY
	PROPOSED RIGHT OF WAY LINE
	EXISTING RIGHT OF WAY LINE
	PARKLAND

RITCHIE-DR.
H. WINSHIP WHEATLEY SPEC. ED. CTR.
WALKER MILL
BY OTHERS
HAMPTON PARK BLVD.
OPTION 2
Proposed ROW Line
Existing ROW Line
RITCHIE MARLBORO ROAD
RITCHIE ROAD
RITCHIE HEIGHTS
RITCHIE AVE.
FORESTVILLE PARK
S.W. RAMP
S.E. RAMP
N.W. RAMP
N.E. RAMP
I-95
GREENWOOD MANOR PARK
FERNWOOD OPTION 1
FERNWOOD DRIVE
BAUMAN RD.
ACORN PARK ST.
BEACH PARK
FERNWOOD TRAILER PARK
SANSBURY RD.
WHITE HOUSE RD.
W1 W2 W3 W4 W5 W6 W7 W8 W9 W10
N/A 1 N/A 2 N/A 3 N/A 4

N

I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

SPREAD DIAMOND WITH 6-LANE DIVIDED RITCHIE MARLBORO RD.

(ALTERNATES 3 & 3A)

DATE

0 500 1000
SCALE IN FEET

FIGURE 15

LEGEND	
D	DISPLACEMENTS
W*	WETLAND AREA NUMBER
	WETLAND
N/A	NOISE AND AIR RECEPTOR & NUMBER
	PROPOSED ROADWAY
	EXISTING ROADWAY
	PROPOSED RIGHT OF WAY LINE
	EXISTING RIGHT OF WAY LINE
	PARKLAND

RITCHIE-DR.
H. WINSHIP WHEATLEY SPEC. ED. CTR.
WALKER MILL
BY OTHERS
HAMPTON PARK BLVD.
OPTION 2
Proposed ROW Line
Existing ROW Line
RITCHIE MARLBORO ROAD
RITCHIE ROAD
RITCHIE HEIGHTS
FORESTVILLE PARK
Existing ROW Line
Proposed ROW Line
S.W. RAMP
S.E. LOOP
S.E. RAMP
N.E. LOOP
N.E. RAMP
N.W. RAMP
I-95
GREENWOOD MANOR PARK
FERNWOOD DRIVE OPTION 1
SANSBURY RD.
WHITE HOUSE RD.
BAUMAN RD.
ACORN PARK ST.
BEACH PARK
FERNWOOD TRAILER PARK
N

I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

PARTIAL CLOVERLEAF W/6-LANE DIVIDED RITCHIE MARLBORO RD.

(ALTERNATES 4 & 4A)

DATE

0 500 1000
SCALE IN FEET

FIGURE 16

LEGEND	
D	DISPLACEMENT
W•	WETLAND AREA NUMBER
	WETLAND
N/A X	NOISE AND AIR RECEPTOR & NUMBER
	PROPOSED ROADWAY
	EXISTING ROADWAY
	PROPOSED RIGHT OF WAY LINE
	EXISTING RIGHT OF WAY LINE
	PARKLAND

RITCHIE-DR.
H. WINSHIP WHEATLEY SPEC. ED. CTR.
WALKER MILL
BY OTHERS
HAMPTON PARK BLVD.
Proposed ROW Line
Existing ROW Line
OPTION 2
RITCHIE MARLBORO ROAD
N.W. LOOP
N.W. RAMP
I-95
GREENWOOD MANOR PARK
N.E. RAMP
N.E. LOOP
RITCHIE ROAD
S.W. LOOP
S.E. LOOP
S.W. RAMP
S.E. RAMP
RITCHIE HEIGHTS
RITCHIE AVE.
FORESTVILLE PARK
BAUMAN RD.
FERNWOOD DRIVE OPTION 1
SANSBURY
WHITE HOUSE RD.
ACORN PARK ST.
BEACH PARK
FERNWOOD TRAILER PARK
W1 W2 W3 W4 W5 W6 W7 W8 W9 W10
N/A 1 N/A 2 N/A 3 N/A 4

N

I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

FULL CLOVERLEAF WITH 6-LANE DIVIDED RITCHIE-MARLBORO RD.

(ALTERNATES 5 & 5A)

DATE	SCALE IN FEET	FIGURE
	0 500 1000	17

and will not be studied in this phase. The final design phase may address this option.

B. Alternates Retained for Detailed Study

1. Alternate 1 (No-Build Alternate)

Under the No-Build Alternate, the I-95 (Capital Beltway)/Ritchie-Marlboro Road grade-separation would remain the same. Minor improvements, such as resurfacing and shoulder improvements, would occur over a period of time as part of normal highway maintenance and safety operations. These procedures would not measurably improve the ability of the existing roadway network to accommodate the predicted increase in traffic volume up to the design year 2015. The No-Build Alternate is not considered to be a reasonable solution to the regional transportation problems. Alternate 1 will continue as a base line comparison to the detailed Build Alternate.

2. Alternate 5 (Preferred Alternate)

The Perferred Alternate is a full cloverleaf interchange with I-95 and Ritchie-Marlboro Road. New bridges would be constructed to carry I-95 over Ritchie-Marlboro Road. (See Figure 17.) Alternate 5 will operate at Level of Service D in 2015, providing an adequate level of operation. Ritchie-Marlboro Road must be reconstructed as a six-lane divided highway in order to provide adequate traffic operations (Level of Service D) in the design year (2015). Analysis showed that a four-lane divided Ritchie-Marlboro Road failed to meet Level of Service D in 2015. The ramps operate at Level of Service D or better with the assumption that a fifth lane in each direction will be added to I-95 in the future. The volumes of traffic on I-95 dictate the level of service at the merge points.

Control of access along the reconstructed Ritchie-Marlboro Road would be acquired between the proposed Hampton Park Boulevard connections on the north and south, eastward to the Sansbury Road intersection on the south and a point opposite the reconstructed Ritchie-Marlboro Road/White House Road intersection on the north.

Under the Preferred Alternate, Ritchie-Marlboro Road will be constructed on a new alignment from Ritchie Road to east of the Ritchie-Marlboro Road/Ritchie Road Spur triangle. Ritchie-Marlboro Road will be reconstructed as a six-lane, divided, closed highway (see Figure 17). The relocation will align opposite proposed improvements for Walker Mill Road by Prince George's County Department of Public Works and Transportation.

From the point where relocated Ritchie-Marlboro Road intersects Ritchie-Marlboro Road to the east of Sansbury Road, the horizontal alignment will roughly follow the alignment of the existing roadway. East of Sansbury Road, the alignment of Ritchie-Marlboro Road will shift slightly to the north and connect to White House Road. White House Road will then be the through road. Ritchie-Marlboro Road will intersect with White House Road in the same area as the Ritchie-Marlboro Road/White House Road triangle.

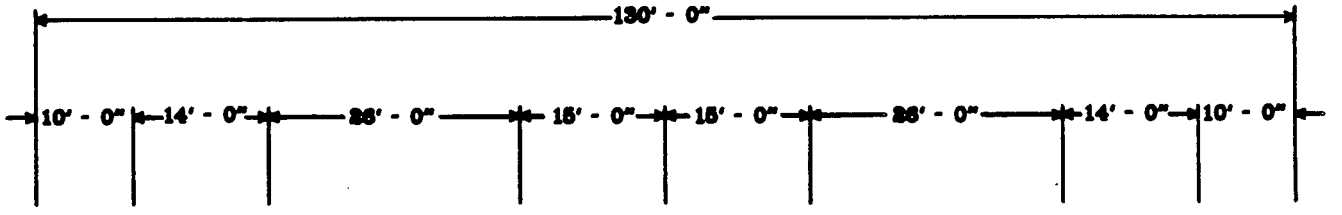
Ritchie-Marlboro Road will meet American Association of State Highway and Transportation Officials (AASHTO) design criteria for 50 m.p.h. for both horizontal and vertical curves.

The entrances and exits from Ritchie-Marlboro Road to the directional ramps are designed to meet AASHTO design criteria for 40 m.p.h. for both horizontal and vertical curves. The entrances and exits from I-95 to the directional ramps are designed to meet AASHTO design criteria for 50 m.p.h. The loop ramps are designed to meet AASHTO design criteria for 30 m.p.h. (see Figure 18 for ramp typical sections).

A major concern for the construction of the new interchange is the maintenance of traffic on I-95. Existing traffic volumes dictate that four lanes of traffic in each direction be maintained at all times during construction. The existing bifurcation between northbound and southbound roadways further complicates the maintenance of traffic problems. The staging and maintenance of traffic costs associated with the bridge construction have substantially increased the construction cost. Figure 20 shows the proposed bridge typical section for I-95 over Ritchie-Marlboro Road.

NOTE:

DIMENSIONS SHOWN ARE FOR THE
PURPOSE OF DETERMINING COST
ESTIMATES & ENVIRONMENTAL IMPACTS
AND ARE SUBJECT TO CHANGE
DURING THE FINAL DESIGN PHASE.

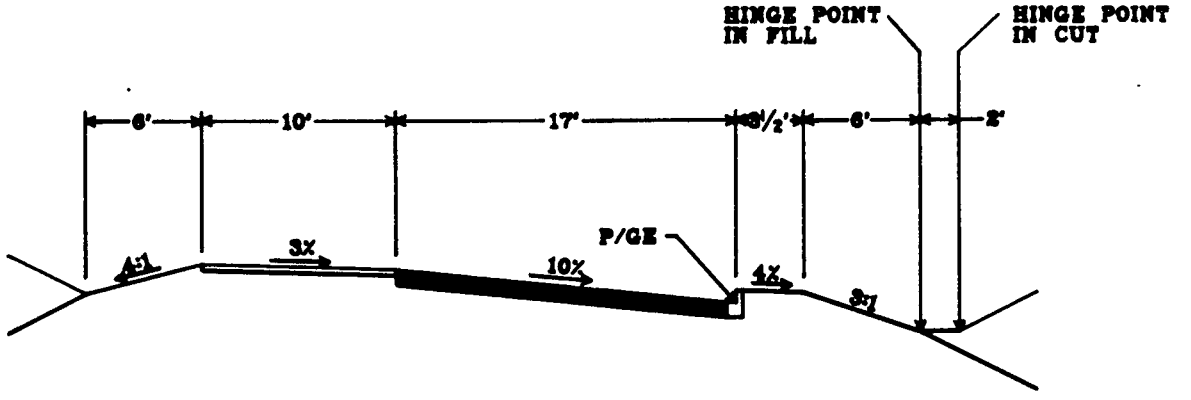


6-LANE DIVIDED
RITCHIE-MARLBORO ROAD

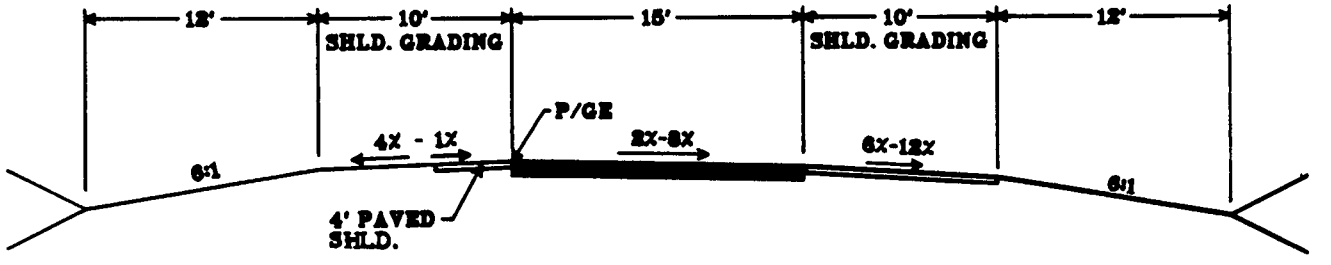
I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE		
RITCHIE-MARLBORO ROAD TYPICAL SECTION		
DATE	No Scale	FIGURE 18

NOTE:

DIMENSIONS SHOWN ARE FOR THE
PURPOSE OF DETERMINING COST
ESTIMATES & ENVIRONMENTAL IMPACTS
AND ARE SUBJECT TO CHANGE
DURING THE FINAL DESIGN PHASE.



INNER LOOP



DIRECTIONAL RAMP

I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

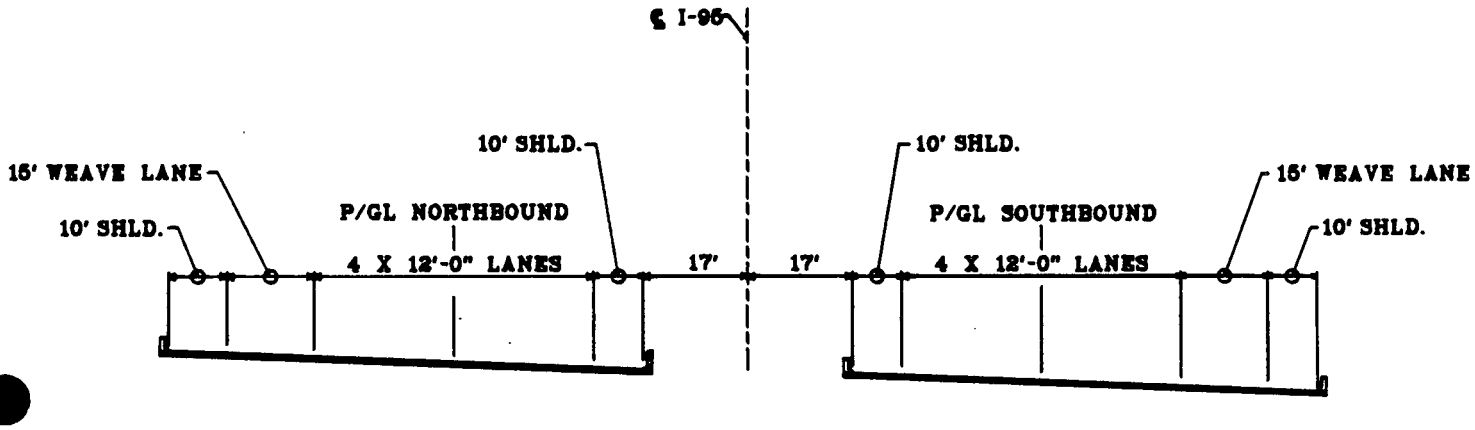
INNER LOOPS & DIRECTIONAL RAMPS TYPICAL SECTIONS

DATE		FIGURE
	No Scale	19

87

NOTE:

DIMENSIONS SHOWN ARE FOR THE PURPOSE OF DETERMINING COST ESTIMATES AND ARE SUBJECT TO CHANGE DURING THE FINAL DESIGN PHASE.



I-95 BRIDGE - TYPICAL

I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE		
I-95 BRIDGE TYPICAL SECTION		
DATE	No Scale	FIGURE 20

C. Associated Improvements

1. Hampton Park Boulevard Options

Hampton Park Boulevard is a planned north/south developer-built public county road identified in the county district master plans, that will intersect Ritchie-Marlboro Road approximately halfway between Ritchie Road and I-95. Our studies will define where the developers will be permitted to intersect with Ritchie-Marlboro Road so as not to interfere with the operation of the proposed interchange.

Traffic studies were conducted for the intersection with the conclusion that a four-way at-grade intersection with Ritchie-Marlboro Road and Hampton Park Boulevard will not function at an acceptable level of service, because of its proximity to the planned cloverleaf interchange at I-95, resulting in insufficient weaving distances. Other options were then investigated.

In the first option, Hampton Park Boulevard would be split into two intersections with Ritchie-Marlboro Road. Hampton Park Boulevard south would intersect Ritchie-Marlboro Road in approximately the same location as the second option (1000'$\pm$ west of ramp gore point). Hampton Park Boulevard north would intersect Ritchie-Marlboro Road between Hampton Park Boulevard south and Ritchie Road. In addition, the northwest quadrant directional ramp from southbound I-95 would be constructed as a jughandle type ramp opposite Hampton Park Boulevard south (see Figure 21) because insufficient weaving distance would result with the conventional ramp tie-in configuration with westbound Ritchie-Marlboro Road.

In the second option, Hampton Park Boulevard (north and south legs) would intersect with the reconstructed Ritchie-Marlboro Road in a conventional four-leg intersection. This would be located 1,000'$\pm$ west of the gore point between eastbound Ritchie-Marlboro Road and the southwest quadrant directional ramp. Again, because of the resulting insufficient weaving distance, we do not propose the conventional ramp tie-in configuration between the northwest quadrant directional ramp and westbound Ritchie-Marlboro Road. Instead, the ramp would be aligned to intersect with the north leg of Hampton Park Boulevard. Should construction of the interchange precede that of the Hampton Park Boulevard/Ritchie-Marlboro Road intersection, enough of the link of Hampton Park Boulevard between Ritchie-

Marlboro Road and the ramp terminus would be constructed as part of the interchange to permit adequate operation of the ramp movements at Ritchie-Marlboro Road. (See Figure 22.)

2. Relocated Fernwood Drive Options

The southwest loop ramp will be constructed in the vicinity of existing Fernwood Road. Several options were considered to provide access from Fernwood Road to Ritchie-Marlboro Road. Both options would serve several purposes. They would serve as the quickest access to the northwest corner of the trailer park (primary concern to fire officials). Also, they would provide access to the properties currently accessing Ritchie-Marlboro Road between I-95 and Sansbury Road.

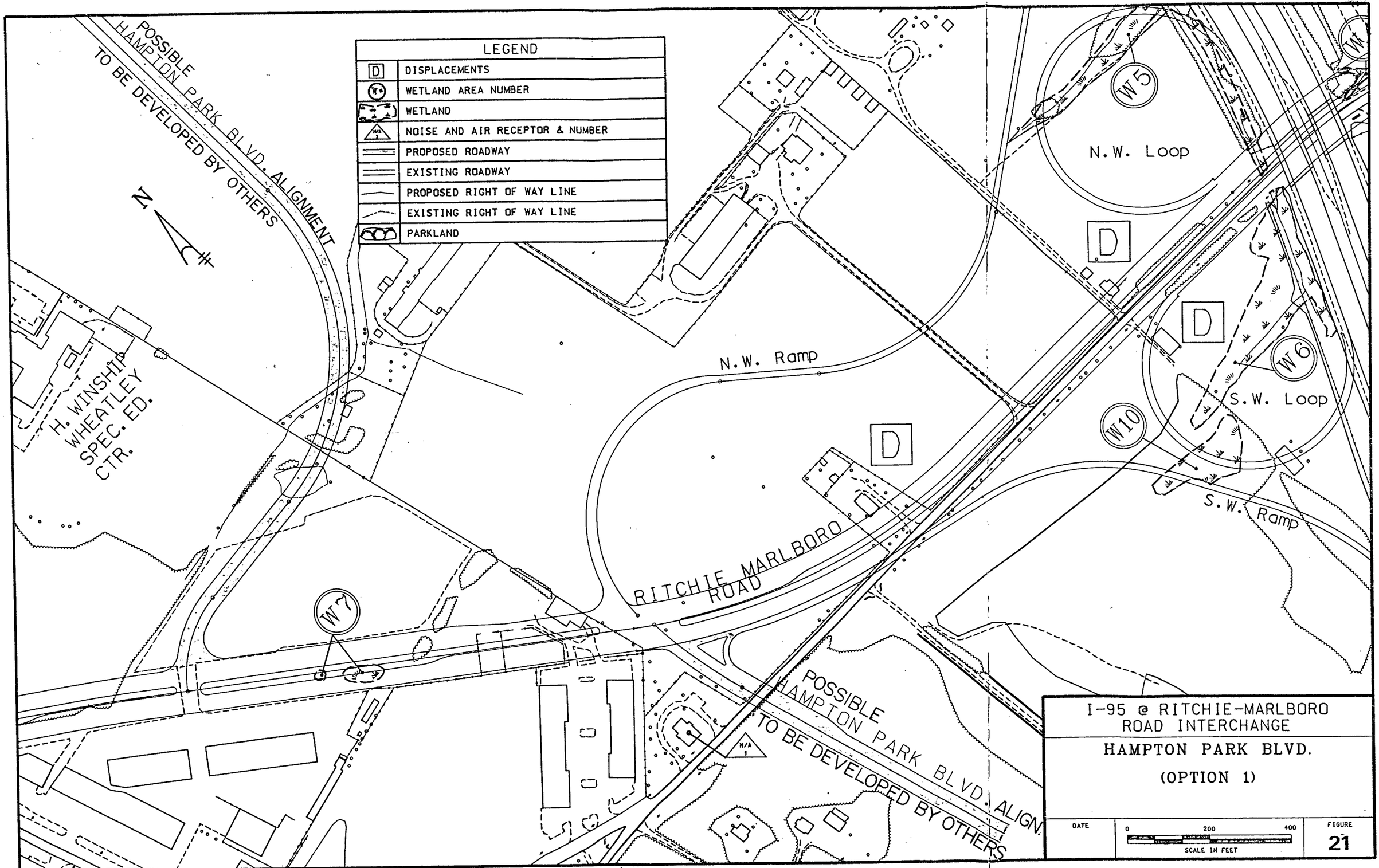
Figures 23 and 24 illustrate both Fernwood Drive options. The main difference is that displacing one residence could be avoided with Option 2. The advantages to Option 1 include less right-of-way requirements, a decrease in impacts to wetlands (wetlands area No. 8), a less total relocation distance. Also, Baumann Drive would have to be relocated under Option 2.

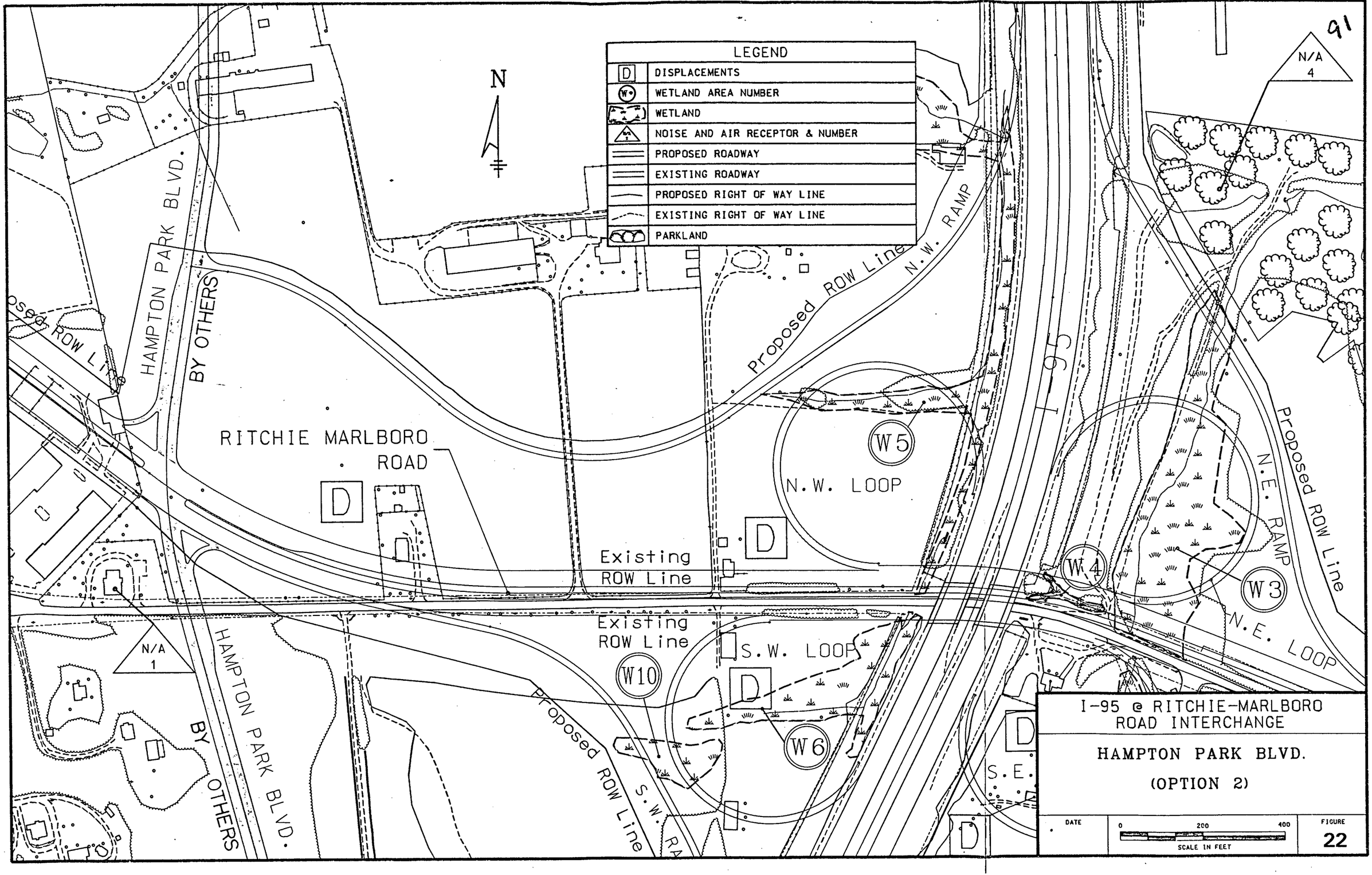
3. Fire House Access

With the construction of the interchange and Hampton Park Boulevard, Old Ritchie-Marlboro Road will be closed and a cul-de-sac will be constructed. In a letter dated December 14, 1989 and at a subsequent meeting (see January 2, 1990 memorandum) between SHA officials and Prince George's County Fire Department officials, the following issues and concerns were raised:

a. Access to the new Ritchie-Marlboro Road

Existing Ritchie-Marlboro Road would end in a cul-de-sac, from which a fire access road would connect to the proposed Ritchie-Marlboro Road/Hampton Park Boulevard intersection. Remote controlled gates at each end of the road would restrict use of it to fire vehicles only. The intersection traffic signals would be remote controlled to all turn red when the fire road was used. This solution is consistent with existing experience.


LEGEND
D DISPLACEMENTS
WETLAND AREA NUMBER
WETLAND
NOISE AND AIR RECEPTOR & NUMBER
PROPOSED ROADWAY
EXISTING ROADWAY
PROPOSED RIGHT OF WAY LINE
EXISTING RIGHT OF WAY LINE
PARKLAND
POSSIBLE HAMPTON PARK BLVD. ALIGNMENT TO BE DEVELOPED BY OTHERS
N
H. WINSHIP WHEATLEY SPEC. ED. CTR.
N.W. Ramp
N.W. Loop
S.W. Loop
S.W. Ramp
RITCHIE MARLBORO ROAD
W5
W6
W7
W10
D
N/A 1
POSSIBLE HAMPTON PARK BLVD. ALIGN. TO BE DEVELOPED BY OTHERS
I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE
HAMPTON PARK BLVD.
(OPTION 1)
DATE
0 200 400
SCALE IN FEET
FIGURE 21



I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

HAMPTON PARK BLVD.

(OPTION 2)

DATE	SCALE IN FEET	FIGURE
.	0 200 400	22

LEGEND	
D	DISPLACEMENT
W#	WETLAND AREA NUMBER
	WETLAND
N/A 1	NOISE AND AIR RECEPTOR & NUMBER
	PROPOSED ROADWAY
	EXISTING ROADWAY
	PROPOSED RIGHT OF WAY LINE
	EXISTING RIGHT OF WAY LINE
	PARKLAND

N

W5 N.W. LOOP

D

W4

W3 N.E. RAMP

Proposed ROW Line

N.E. LOOP

D

S.W. LOOP

D

W6

W10

D

S.E. LOOP

D

Proposed ROW Line

W1

S.E. RAMP

W2

D

PROPOSED FERNWOOD DRIVE

Proposed ROW Line

Proposed ROW Line

Existing

Proposed ROW Line

I-95

W9

N/A 2

W8

N/A 3

I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

RELOCATED FERNWOOD DRIVE

(OPTION 1)

DATE	0 200 400 SCALE IN FEET	FIGURE 23

LEGEND	
D	DISPLACEMENT
W•	WETLAND AREA NUMBER
	WETLAND
N/A 1	NOISE AND AIR RECEPTOR & NUMBER
	PROPOSED ROADWAY
	EXISTING ROADWAY
	PROPOSED RIGHT OF WAY LINE
	EXISTING RIGHT OF WAY LINE
	PARKLAND

N

N.W. LOOP

N.E. RAMP

N.E. LOOP

Proposed ROW Line

S.W. LOOP

S.E. LOOP

S.E. RAMP

Proposed ROW Line

Proposed ROW Line

PROPOSED FERNWOOD DRIVE

Proposed ROW Line

Existing

Proposed ROW Line

I-95

W1 W2 W3 W4 W5 W6 W7 W8 W9

D

N/A 2

N/A 3

I-95 @ RITCHIE-MARLBORO ROAD INTERCHANGE

RELOCATED FERNWOOD DRIVE (OPTION 2)

DATE

0 200 400

SCALE IN FEET

FIGURE 24

b. Access to the Fernwood Trailer Park

As previously discussed, Fernwood Drive is to be relocated to begin at Sansbury Road. This would increase the response distance by approximately one-half mile and the response time by approximately one minute. This increase was acceptable to the fire officials.

c. Access to the H. Winship Wheatley Special Education Building

The access would remain the same under the proposed improvement.

d. Possibility of a hydrant or standpipe located on I-95 in the vicinity of the project.

SHA is responsible for any hydrants which have to be moved or replaced as a result of the interchange improvements but not for additional hydrants. Appropriate agencies will be notified of the additional needs of the Fire Department.

e. Possibility of median breaks along proposed Ritchie-Marlboro Road

This is to respond to vehicular accidents while restricting operation of any one roadway of the dual highway. This matter will be taken into consideration during the final design stage.

On May 10, 1990 (see Correspondence Section) the Fire Department indicated that its concerns have been addressed. Coordination is continuing with the Fire Department and will continue when the project goes through the final design process. All reasonable measures will be incorporated into the project to provide acceptable emergency service.

ENVIRONMENTAL IMPACTS

IV. ENVIRONMENTAL IMPACTS

A. Social

1. Relocations

An analysis of the relocations required by the proposed alternate has been made and is based on preliminary relocation and right-of-way studies. The preliminary right-of-way and relocation reports are available for review at the State Highway Administration, 707 N. Calvert Street, Baltimore, MD 21203.

Alternate 1 (No-Build) would not result in any residential or business displacements or acquisition of strip right-of-way from the properties within the project area.

Alternate 5, the full cloverleaf interchange, has a total of seven (7) residential displacements and one structure, a barn which is structurally deficient. Of the seven improved properties being affected, five are owner occupied, one of which includes a minority owner occupant and one tenant. Two other properties are occupied by tenants including one property with three improvements with three different tenants. All individuals and families would be relocated in accordance with the provisions of the "Uniform Relocation Assistance and Land Acquisition Policies Act of 1970 and Amendments of 1987." A summary of the State's relocation assistance program is located in Section VII, Appendix, at the end of the document.

No business would need to be relocated.

All the required relocations are expected to be completed in a timely, orderly, and humane manner and without any undue hardship to the affected individuals. A reasonable lead time of 18 months would be required to accomplish the relocations. According to a survey of the Greater Washington and Baltimore real estate listings, sufficient housing is available in the area to relocate the displacees.

Title VI Statement

It is the policy of the Maryland State Highway Administration to ensure compliance with the provisions of Title VI of the Civil Rights Act of 1964, and related civil rights laws and regulations which prohibit discrimination on the grounds of race, color, sex, national origin, age, religion, physical or mental handicap in all State Highway Administration program projects funded in whole or in part by the Federal Highway Administration. The State Highway Administration

will not discriminate in highway planning, highway design, highway construction, the acquisition of right-of-way, or the provision of relocation advisory assistance. This policy has been incorporated into all levels of the highway planning process in order that proper consideration may be given to the social, economic, and environmental effects of all highway projects. Alleged discriminatory actions should be addressed to the Equal Opportunity Section of the Maryland State Highway Administration for investigation.

2. Access to Services and Facilities

The No-Build Alternate would not address or alleviate the existing or projected traffic congestion or safety problems in the project area. Due to the expanding commercial/industrial and increasing residential development, projected traffic volumes are expected to exceed capacity for the entire project area by the design year 2015.

As traffic volumes increase, particularly truck traffic servicing the several industrial parks within or near the project area, access to area services and facilities would become increasingly congested and dangerous. Travel time and cost including delays would continue to increase.

Alternate 5 would provide direct access to Ritchie-Marlboro Road and I-95 by the construction of a full cloverleaf interchange. This would alleviate heavy traffic volumes at MD 214 and MD 4 off I-95 destined for the numerous industrial areas located off Ritchie-Marlboro Road. The Build Alternate would also provide more direct access to I-95 from several residential areas within or near the project area (Fernwood Trailer Park, Little Washington, Forestville Estates and Ritchie Heights).

Access for residents of Fernwood Trailer Park, a 330 unit mobile home park, would be changed from the existing access at Ritchie-Marlboro Road and Fernwood Road to access at Sansbury Road by a service road which would tie into Fernwood Road. (See Figure 12.) Although travel would be longer, access onto Ritchie-Marlboro Road at Sansbury Road would be safer for the residents of the Trailer Park.

Emergency vehicle response would be greatly enhanced for back-up units which would have a more direct access into the study area via the proposed interchange. Though emergency vehicle response time to the Fernwood Trailer Park

would be increased by approximately one minute, it would not exceed the criteria for a safe response time.

Access from the Ritchie Volunteer Firehouse would be provided by a gate control access which could be opened or released electronically before approach. In addition, appropriate signalization would be provided at the point of entry onto the newly relocated Ritchie-Marlboro Road to accommodate emergency vehicle access.

There would be no right-of-way required from any of the parks within or near the project area, particularly the Greenwood Manor Community Park.

B. Economic Impacts

Alternate 1 (No-Build) does not accommodate the projected traffic volumes associated with the existing and planned industrial development designated for this area. The No-Build Alternate would not alleviate traffic congestion at MD 214/I-95 and MD 4/I-95 interchanges which currently serve the primary roadways into the project area.

The proposed interchange and access point(s) to proposed Hampton Park Boulevard would relieve traffic conflicts and congestion by providing improved access to the existing and planned industrial and commercial services throughout the project area. The proposed improvement would greatly facilitate the transportation of goods and services by providing direct access, necessary road capacity, and improved safety.

Local commuters destined to various areas of employment located north and south of the project area, such as Washington, D.C. and Baltimore, would benefit by improved travel time and a reduction in delays.

C. Land Use Impacts

The proposed improvements are consistent with Prince George's County three local Master Plans governing this area. According to these Plans, a full cloverleaf interchange at I-95/Ritchie-Marlboro Road is indicated to accommodate future land use plans for the project area and the surrounding region. The Suitland District Heights and Vicinity Master Plan of 1986 has indicated this interchange improvement as an "early need" to respond to present or imminent circumstances.

Existing and planned development is being accessed from I-95 via its interchanges at MD 214 and MD 4 and the existing county roadway network. The addition of an interchange at I-95 and Ritchie-Marlboro Road will relieve congestion problems at the existing I-95 interchanges at MD 214 and MD 4.

D. Historical and Archeological

There are no historic sites located with the project area that are on or eligible for the National Register of Historic Places.

The Phase I archeological survey has been completed. The preliminary results indicate that five archeological sites were identified. Four of the sites are recommended for Phase II studies. These sites are potentially significant for what can be learned by data recovery. They have minimal value for preservation in place. The Phase II surveys will be completed during the final design of the project.

E. Secondary Impacts

The construction of the proposed interchange is consistent with the land use plans and will not cause or encourage land uses that are not compatible with those plans. Any private development that does occur will have to go through the county permit approval process and will be subject to extensive reviews. The developers will be responsible for identifying all environmental impacts and for preparing mitigation strategies and the acquisition of all required permits.

F. Natural Environment

1. Effects on Topography, Geology, and Soils

   a. <u>Topography</u>

   The topography of the land would be altered slightly due to the need to bring the exit and entrance ramps up to the same grade as I-95. The expansion of Ritchie-Marlboro Road would not affect the topography of the existing environment.

   The placement of the ramps would create some areas of increased elevation. There would be a need for fill to create a transition from the level of Ritchie-Marlboro Road to the increased elevation of I-95. This would create a new physical and visual overview of the existing landscape. The new

landscape would not block the view of any scenic or important physical features, or create undesirable drainage patterns. Aesthetic and physical environmental effects due to the alteration of topography would have negligible impacts to the surrounding area.

b. Geology

No impacts to the underlying geological structures would occur. No major cutting into the existing ground would be required to place the new ramps or widen Ritchie-Marlboro Road. Fill would be required for bringing the exit and entrance ramps up to the elevation of I-95. No deep cuts would be needed for any of the construction, foregoing the need to alter the underlying geologic structure.

c. Soils

Soil from the surrounding area would be used to create fill for increasing the grade of the exit and entrance ramps. A concern of short-term soil impacts is the possibility of erosion during construction. Many of the soil series found in the project area are listed as susceptible to erosion. The removal of vegetation from the construction area would expose soils and increase the probability of runoff. Removal of vegetation also would reduce the beneficial effects of the vegetation's ability to intercept sediment loaded runoff.

Final design for the proposed project would include standard erosion and sediment control procedures as specified by the Maryland Standard and Specifications for Soil Erosion and Sediment Control. These specifications require the adherence to an erosion and sediment control plan during construction. This would help to minimize any short-term impacts during the construction phase.

Long-term impacts to the soils in the project area would be negligible. Introduction and establishment of grasses and herbaceous vegetation would stabilize the soils after construction is completed. There would be some removal, addition, and relocation of the various soil types.

d. Prime Farmland and Soils of Statewide Importance

Prime farmland soils and soils of statewide importance for Prince George's County were identified within the study area and include all soils of statewide importance and prime farmlands soils that are not already in, or committed to, urban use. According to the U.S. Department of Agriculture and the Soil Conservation Survey approximately 43 acres of prime farmland soil would be impacted by the proposed improvement. The amount of farmland that is not converted for construction is planned for industrial and residential development. (See Section V, a Page 21.)

2. Effects on Water Resources

a. Surface Water

Direct impacts to the intermittent streams in the project area would be minimal. There would be no relocation or channelization of any of the streams. The small tributaries would flow through the fill of Ritchie-Marlboro Road and the new ramps for I-95 through new culverts and extension of existing culverts. Stream bottom habitat would be lost, but there would be no reduction of hydrologic function or water quality. The location of the intermittent streams are shown on the alternates mapping.

Construction activities would cause short-term impacts to the streams in the project area. During construction, any erodible materials that may be exposed along the waters would result in an increase in sedimentation and turbidity. The removal of vegetation from the banks would expose additional soils to runoff, and reduce the protective vegetative strip which aids in intercepting runoff. The actual amount of sedimentation occurring in the surface water would be dependent on many variables, including time of year of construction, amount of time the ground is exposed, rainfall intensity during the time the ground is uncovered, and distance of construction from the creeks and streams. Although a potential exists for temporary sediment loading of the surface waters, proper erosion control measures can mitigate this impact successfully.

Final design for the proposed improvements would include "Standard Erosion and Sediment Control Procedures" as specified by the Maryland State Highway Administration, as well as the Department of the Environmental's standards and specifications.

The final design for the proposed improvements would include plans for the state-of-the-art grading, erosion and sediment control in accordance with state and federal laws and regulations. These plans would be reviewed and approved by the Maryland Department of the Environment.

Additionally, in January 1986, the Waterway Permits Division of the Water Resources Administration (WRA) published "Maryland's Guidelines to Waterway Construction" to complement the "Standards and Specifications for Soil Erosion and Sediment Control Manual." These guidelines detail frequently encountered techniques used in the waterway construction process and provide a practical application of many of the standard sediment-control practices. These guidelines would be followed in developing the sequence of construction activities for this project. Outlined in the guidelines are sediment-control devices, temporary stream-diversion techniques, slope protection techniques, channel rehabilitation, and general guidelines for culverts and bridge installation.

Full and rigorous implementation and enforcement of erosion and sediment-control measures would be conducted. Plans for grading also would be included in the final design. All plans would be developed in accordance with state and federal laws and regulations and would require review and approval by the Water Resources Administration and Maryland Department of Environment.

A Waterway Construction Permit may be required during the final design phase for each of the affected tributaries. In addition, no in-stream work may be permitted from March 1 through June 15, inclusive, for Class I waters.

The proposed project would not involve the use of hazardous materials, with the exception of fuel oils and lubricants. Accidental spills of these products could cause a substantial impact to the surface waters of the study

area. However, the probability of spills is low, and the contractor would be required to maintain clean up equipment on site in case of a spill.

The predominant continuing impact on the area's streams would be the discharge of runoff from the roadway. The increase in impervious surface resulting from the additional roadway surface would produce an increase in the amount of runoff carrying vehicle-generated pollutants. Stormwater runoff would be managed under MDE's Stormwater Management Regulations and would be in compliance with COMAR 05.08.05.05. Stormwater management procedures under these regulations can reduce pollutant loads and control runoff.

The rapid movement of water over bridges and roadway surfaces carries quantities of grease, oil drippings, deicers, and exhaust emissions into the surface waters. Although the increase in impervious surface would cause an increase in runoff pollutants, these impurities would be dispersed and diluted upon entrance into the waters. The relative increase in runoff from impervious surface would be minimal compared to total stream flow contribution of the affected watersheds. Any impact from runoff pollutants due to the proposed project would not be expected to be of such a magnitude to affect the biological or chemical character of the water of area streams. Dispersion and dilution do not eliminate pollution; however, many petroleum pollutants, such as grease and oil drippings, are eventually broken down into less harmful products through bacterial action. Indirect impacts would include removal of much of the tree and shrub vegetation adjacent to the streams. The resulting increased exposure to the sun may have an impact on stream water temperature.

b. Groundwater

Potential groundwater impacts would be limited to a reduction in surface area available for groundwater recharge. The creation of additional impervious strata reduces surface water infiltration to the ground water supply. The increase in impervious surface is not expected to substantially impact the area's groundwater recharge potential.

Continuing contamination due to vehicle-generated pollutants and chemicals used in highway maintenance activities also would be negligible. The increase in overall paved surface would not substantially increase the concentration of runoff impurities entering the groundwater when compared with the total contribution of pollutants to the aquifer and the large total size of the aquifer. Vegetation ditches and area along the road also would help absorb some of the pollutants and prevent them from reaching the groundwater.

c. Floodplains

Impacts to floodplains are evaluated in accordance with Executive Order 11988, and Federal Highway Program Manual 6-7-3-2. National Flood Insurance Program maps were used to define and determine the 100-year floodplains of the drainage system in the project area. Within the study area, none of the tributaries exhibit 100-year floodplains as defined by mapping received from the National Flood Insurance Program. The proposed project would have no impacts to any delineated 100-year floodplain. The streams in the project area have adjacent wetlands in most areas. Maintaining the integrity of these wetlands is important to mitigate the extent of flooding in the project area and downstream.

3. Ecology

a. Terrestrial Habitat

The primary impact to the terrestrial environment would be the replacement of farmland, forested, old field, and shrub-scrub habitat types with man-dominated habitat.

The overall acreage of habitat within the project area consists of 150.92 acres of forestlands, old field, farmland and scrub shrub. In a worst-case situation, approximately 96.3 acres of the existing 150.92 acres would be initially impacted for construction purposes and then replaced by 20.9 acres of impervious road surface, and 75.4 acres of the vegetative type of man-

dominated habitat. Since 11.8 acres of this habitat are already man-dominated, the total impacted habitat area would be 84.5 acres.

Impacts to all forested areas larger than one acre were calculated. Table 8 summarizes the impacts, due to construction of the proposed project, on forest lands and large trees. Coordination will be initiated with the State Forester through the Maryland Forest, Park and Wildlife Service.

Recent legislation requires that the cutting or clearing of trees be minimized on State construction projects. All impacted upland forest land areas of one acre or greater must be replaced on an acre-for-acre basis. If replacement is not totally possible, the State Highway Administration will contribute $500 an acre for each acre that is not replaced.

All efforts will be made to minimize the amount of cutting and clearing of forested areas. Only the removal of forested vegetation required for normal construction activities will occur.

Given the number of habitats in the region that exist outside the project corridor, it is unlikely that vegetative diversity will be measurably diminished. Ground cover, shrub, and tree species common to managed rights-of-way can be expected to replace vegetation lost through construction of the project.

b. Aquatic Habitat

i. Streams

Aquatic organisms within the project area would receive impacts due to the placement of an interchange at Ritchie-Marlboro Road and I-95. There would be a loss of stream bottom habitat due to new culverts and increased length of existing culverts, but no loss of hydrologic function or stream length. The existing aquatic organisms would be able to utilize the streams in a normal manner. Because of this, any long-term impacts to aquatic habitat in the study area would be minimal.

Short-term impacts could cause the most damage to the streams within the study area. Soils in the project area are, for the most part,

TABLE 8
FOREST LAND IMPACTS

STAND #	STAND AREA (acres)	AREA IMPACTS DUE TO CONSTRUCTION (acres)	NUMBER OF LARGE TREES IMPACTED
A	7.4	5.3	40
B	9.2	0.9	7
C	7.5	0.5	0
D	7.2	5.5	34
E	4.7	4.7	9
F	7.6	3.9	0
G	4.1	4.1	1
H	1.3	1.3	17
I	2.3	2.3	0
TOTALS	51.3	28.5	108

highly susceptible to erosion. When construction begins, the vegetation stabilizing the soils would be removed. Short-term impacts would be reduced by adhering to the DNR state-of-the-art sediment and erosion control methods such as mulching, seeding and sod. Also included would be structural controls such as silts fences.

Some macroinvertebrates within the streams may be destroyed by the construction for the placement of new culverts. These streams are intermittent in nature and the inhabiting organisms are adapted to the semi-permanent flow regime of the area's streams. Because of this, the organisms utilizing these streams would quickly reinhabit the tributaries after construction. Fisheries Division of DNR's Tidewater Administration (See Section V) suspect the presence of White Perch to be spawning in Southwest Branch in the Spring. Impacts to these species would be further reduced by adhering to the Class I (COMAR) water restriction--no instream construction from February 15 through June 15 inclusive. Following these regulations and practicing proper construction techniques would enhance the reestablishment of area streams to original value for the aquatic organisms in the area.

ii. Wetlands

Pursuant to Executive Order 11990, Protection of Wetlands, wetland areas potentially affected by the project have been identified in the project corridor. A field investigation was conducted on May 17, 1988 and a representative from the Army Corps of Engineers attended. Based, in part, on this meeting, it was determined that Alternate 5 would impact approximately 11 acres of palustrine wetlands, respectively, in 10 separate locations. These impacts are based on the acreage of each wetland which would fall within the proposed right-of-way for each alternate considered (see Table 3, Page I-21 to I-23). For location and description of the wetland areas refer to Section I-2b and the minutes of the wetland field review in the Comments and Coordination Section of this document.

No wetland impacts are associated with the No-Build Alternate.

Wetlands Affected by Alternate 5

Since these wetland areas are located within the immediate vicinity of the proposed interchange area where I-95 passes over Ritchie-Marlboro Road, it would be impossible to avoid impacting these wetlands areas. Extending the ramps or cloverleaf interchange to avoid or mitigate impacts to the wetlands would result in greater residential and noise impacts, substantial cost increases and poor geometric design.

The maximum acreage of wetlands impacted by the proposed project is approximately 11.1 acres. In each case, the maximum represents the total wetland area within the project area. Impacts are detailed below.

Wetland W-1

W-1 is located is the southeast quadrant of the interchange area east of Fernwood Drive. Approximately 1.50 acres of W-1 would be impacted by the construction of the interchange ramps in the southeast quadrant. Shifting the alignment of the ramps further south would result in additional impacts (displacements) to approximately four residences, and one business. This would also result in a deficient length of the acceleration lane west of Sansbury Road.

In addition, shifting the alignment north would require reduction in the southeast quadrant loop ramp radius to such a degree it would be below minimal standards and be unsafe. Bridging the wetlands would increase project cost by $940,000 and would still incur impacts due to the construction process.

Wetland W-2

W-2 is also located in the wooded southeast quadrant of the interchange area. The southeast loop ramp and the southeast

directional ramp would affect approximately 1.93 acres of this wetland.

The radius of the loop ramp is already at the minimum allowed for a 30 mph design speed (250 ft.) and the directional ramp is restricted because of its close proximity to Sansbury Road as discussed under W-1.

The impacts could be minimized by constructing a bridge over the wetlands for the southeast directional ramp. This would increase project costs by $700,000.

Wetland W-3

W-3 is located in the northeast quadrant of the interchange area. Approximately 2.95 acres would be impacted by the northeast loop ramp and northeast directional ramp.

Increasing the loop ramp radii would extend the ramps beyond the wetland area. This would move the ramp into Greenwood Manor Park resulting in a 4(f) issue. The park is used for recreational activities such as biking and hiking. This extension would also result in impacts to the existing residential subdivision in this quadrant.

Bridges and retaining walls could modify the impacts to the wetlands; however, the bridge would increase project costs by $1,460,000. The retaining wall would increase project costs by $730,000.

Wetland W-4

W-4 is located along a drainage ditch in the northeast quadrant where Ritchie-Marlboro Road crosses under I-95. Wetland W-4 would experience an impact of 0.06 acre by the widening of the adjacent section of Ritchie-Marlboro Road.

Shifting the alignment to widen Ritchie-Marlboro Road to the southside would result in four additional residential displacements and increase impacts to the wetlands located in the southeast quadrant. However, if Ritchie-Marlboro Road were shifted to the south and if

a retaining wall were constructed, W-4 could be avoided. The retaining wall would increase the project cost by $300,000.

Wetland W-5

W-5 is located in the northwest quadrant of the interchange and is associated with a stream, several drainage ditches, a woodlot and small hedge row. W-5 would experience an impact of 1.84 acres by the placement of the northwest loop ramp and directional ramp.

The northwest directional ramp could be shifted slightly to the west to miss the northern reach of the wetland as shown. This would result in a right-of-way cost increase of $2,200.000.

Additionally, retaining walls could be built for the northwest loop ramp to lessen the impacts to the wetlands. This would increase project costs by approximately $530,000.

Wetland W-6

W-6 is located in the southwest quadrant and would be impacted by the construction of the southwest loop ramp. A total of 0.87 acre of W-6 would be impacted.

A retaining wall could be built parallel to southbound I-95 which would lessen the impacts to the wetlands. This would increase the project costs by approximately $590,000.

Wetland W-7

W-7 is located north of Old Ritchie-Marlboro Road in the northwest portion of the project area. Although this wetland appears to have been disturbed by fill, 0.13 acre would be impacted by Ritchie-Marlboro Road Relocated.

Shifting the alignment to the north would result in the displacement of several recently constructed industrial structures. Also, the alignment for this segment of Ritchie-Marlboro Road has been set by Prince George's County and the right-of-way has been dedicated.

Several other developments are in the engineering phase based on this dedicated right-of-way. Therefore, any shift in the alignment for Ritchie-Marlboro Road would have a significant impact on these properties.

Wetlands W-8 and W-9

W-8 and W-9 are located in the southeast quadrant and would be impacted by the relocation of Fernwood Drive.

Relocated Fernwood Drive, Option 1, would have a minimal or no impact on W-8 and W-9. Fernwood Drive, Option 2, would have no impact on W-9. It would, however, affect approximately 0.4 acre of W-8. A bridge could be constructed over the wetlands. This would increase project costs by approximately $730,000.

Wetland W-10

W-10 is located in the southwest quadrant of the interchange in the area of the southwest loop ramp and the southwest directional ramp. Approximately 0.25 acre of wetland would be impacted by the Build Alternate.

The loop ramp is already designed for the minimum criteria (250' radius). This is because of the close proximity of proposed Hampton Park Boulevard. Therefore, neither the loop ramp nor the directional ramp can be moved to avoid the wetlands.

One possible avoidance consideration would be to construct portions of the southwest loop ramp and southwest directional ramp on a bridge. This would increase project costs by approximately $1,100,000.

Wetland Mitigation

The wetland mitigation will be consolidated on a 1:1 basis within the immediate area of the same watershed, if possible. The wetland mitigation will be composed of replacement or enhancement and will

be developed in detail design. Coordination will be initiated and maintained with the appropriate agencies during the development of the mitigation.

c. Wildlife

The most substantial impact on wildlife within the study area would be the removal and alteration of vegetation habitat. The removal of the forested, shrub-scrub, old field and cultivated types of habitat, and replacement with man-dominated habitat would have the greatest continuing effect to the area's wildlife. This alteration of habitat would tend to favor species of animals that are tolerant of the man-dominated type of habitat. Species that can tolerate these types of conditions include cottontail rabbit, woodchuck, opossum, and many species of birds.

The initial impact due to construction may have the greatest effect to the wildlife within the study area. When habitat is destroyed or altered, its wildlife populations are affected and individuals may emigrate to an adjoining area. Smaller, less mobile species of animals may be directly impacted by construction, while larger mammals and birds will move to more secluded areas. Although the area is becoming urbanized, there are large amounts of similar habitat types in the area adjacent to the study area, which would most likely be able to sustain the slight increase in density caused by the emigration of wildlife from the construction area.

The vegetated areas adjacent to streams in the project area act as travelways for the larger, more mobile species of mammals. These areas act as natural, protected corridors for movement between larger areas of wildlife habitat. Removing or breaking the continuity of these travelways inhibits the natural mobility necessary for these species for food gathering, finding shelter and breeding purposes. Stabilization of habitat after construction would allow some species of wildlife to utilize the area normally, with only the increase in paved surface area creating a loss of suitable habitat for wildlife use. Operation of the roadway may increase road kills in the area. Animals most susceptible to mortality are opossums, raccoons, rabbits, gray squirrels,

whitetailed deer, skunks, and perching birds, all of which are highly mobile. Road kills normally have little effect upon the population level of the species.

a. Threatened, Endangered, or Rare Species

There are no known Federal threatened, endangered, or rare species presently inhabiting the study area. Although there is one historic record of the State endangered Bidens discoidea, no individuals were discovered during field work in the project area.

G. Air Quality Impacts

1. Analysis Objectives, Methodology, and Results

The objective of the air quality analysis is to compare the carbon monoxide (CO) concentrations estimated to result from traffic configurations and volumes of each alternate with the State and National Ambient Air Quality Standards (S/NAAQS). The NAAQS and SAAQS are identical for CO: 35 PPM (parts per million) for the maximum 1-hour period and 9 PPM for the maximum consecutive 8-hour period.

A microscale CO pollution diffusion analysis was conducted using the third generation California Line Source Dispersion Model, CALINE 3. This microscale analysis consisted of projections of 1-hour and 8-hour CO concentrations at sensitive receptor sites under worst-case meteorological conditions for the No-Build, (Alternate 1) and Build Alternate 5 (worst-case) for the design year (2015) and the estimated year of completion (1995).

a. Analysis Inputs

A summary of analysis inputs is given below. More detailed information concerning these inputs is contained in the I-95/Ritchie-Marlboro Road Air Quality Analysis which is available for review at the Maryland State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.

Background CO Concentrations

In order to calculate the total concentration of CO which occurs at a particular receptor site during worst-case meteorological conditions, the background CO concentrations are considered in addition to the levels directly attributable to the facility under consideration. The background concentrations were derived from the application of rollback methodology to on-site monitoring conducted by the Air Management Administration at their Suitland monitoring station; and the resulting area-wide emissions from both mobile and stationary sources were assumed to be the following:

	CO, PPM	
	1-Hour	8-Hour
1995	9.9	3.0
2015	10.0	3.1

Traffic Data, Emission Factors, and Speeds

The appropriate traffic data were utilized as supplied by the Traffic Forecasting Section (January 1988 and 1989) of the Maryland State Highway Administration.

The composite emission factors used in the analysis were derived from the Environmental Protection Agency (EPA) Compilation of Air Pollutant Emission Factors: Highway Mobile Sources and were calculated using the EPA MOBILE 3 computer program. An ambient air temperature of 20°F was assumed in calculating the emission factors for the 1-hour and 35°F was used for the 8-hour analysis in order to approximate worst-case results for each analysis case. Credit for a vehicle inspection maintenance (I/M) emission control program was included in the emission factor calculations.

Average vehicle operating speeds used in calculating emission factors were based on the capacity of each roadway link considered, the applicable speed limit, and external influences on speed through the link from immediately adjacent links. Average operating speeds ranged from 25 mph to 55 mph depending upon the roadways and alternate under consideration.

Meteorological Data

Worst-case meteorological conditions of 1 meter/second for wind speed and atmospheric stability Class F were assumed for the 1-hour analysis and a combination of 1 meter/second and 2 meters/second for wind speed and Class D and Class F stability classes were used for the 8-hour calculations, as appropriate.

The wind directions utilized as part of the analysis were rotated to maximize CO concentrations at each receptor location. Wind directions varied for each receptor and were selected through a systematic scan of CO concentrations associated with different wind angles.

b. Sensitive Receptors

Site selection of sensitive receptors was made on the basis of proximity to the roadway, type of adjacent land use, and changes in traffic patterns on the roadway network. Four (4) receptor sites were chosen for this analysis consisting of three (3) residences and a park (see Table 9). The receptor site locations were verified during study area visits by the analysis team. The receptor sites are shown on Figure 18.

c. Results of Microscale Analysis

The results of the calculations of CO concentrations at each of the sensitive receptor sites for the No-Build and Build Alternates are shown on Table 10. The values shown consist of predicted CO concentration attributable to traffic on various roadway links plus projected background levels. A comparison of the values in Table 10 with the S/NAAQS shows that no violations would occur for the No-Build or Build Alternates in 1995 or 2015 for the 1-hour or 8-hour concentrations of CO.

The projected CO concentrations vary between alternates depending on receptor locations as a function of the roadway locations and traffic patterns associated with each alternate. The maximum 1-hour concentrations associated with the Build Alternate is 65 percent of the 1-hour S/NAAQS while the maximum 8-hour concentration is 64 percent of the 8-hour S/NAAQS. The maximum 1-hour concentration for the No-Build Alternate

is 69 percent of the 1-hour S/NAAQS, and the maximum 8-hour concentration for the No-Build Alternate is 64 percent of the 8-hour S/NAAQS.

TABLE 9
AIR QUALITY RECEPTOR SITES

Site No.	Description/Location
1	Residence, 2 story brick multi-family Ritchie-Marlboro Road
2	Residence, Fernwood Trailer Park Elmwood Park Street
3	Residence, 1 story brick Ritchie-Marlboro Road
4	Greenwood Manor Park

TABLE 10
CO CONCENTRATIONS* AT EACH AIR QUALITY RECEPTOR SITE, PPM

	1995				2015			
	1-Hour		8-Hour		1-Hour		8-Hour	
Receptors	No-Build	Build	No-Build	Build	No-Build	Build	No-Build	Build
1	11.7	11.8	3.4	3.6	13.5	17.1	3.9	4.6
2	13.4	13.1	3.8	3.8	18.4	18.1	4.6	4.6
3	11.9	11.5	3.5	3.5	13.9	14.1	4.2	4.3
4	15.7	15.3	4.4	4.5	24.1	22.9	5.8	5.8

The S/NAAQS for CO: 1-hour - 35 ppm
8-hour - 9 ppm

*Background Levels:		1995	2015
	1-hour	9.9	10.0
	8-hour	3.0	3.1

The Maryland Air Management Administration was consulted to determine the adequacy of the Specifications in terms of satisfying the requirements of the Regulations Governing the Control of Air Pollution in the State of Maryland. The Maryland Air Management Administration found that the specifications are consistent with the requirements of these regulations. Therefore, during the construction period, all appropriate measures (Code of Maryland Regulations 26.11.06.03) will be taken to minimize the impact on the air quality of the area.

2. Conformity with Regional Air Quality Planning

The project is in a nonattainment which has transportation control measures in the State Implementation Plan (SIP). The project conforms with the SIP since it originates from a conforming transportation improvement program.

3. Agency Coordination

Copies of the technical Air Quality Analysis are being circulated to the U.S. Environmental Protection Agency and the Maryland Air Management Administration for review and comment.

H. Noise Impacts

1. Abatement Criteria and Land Use Relationship

This noise analysis was completed in accordance with the FHWA Noise Abatement Criteria and 23 CFR, Part 772. (See Table 11.) The factors that were considered in identifying noise impacts were:

- o Identification of existing land use
- o Existing noise levels
- o Prediction of future design year noise levels; and
- o Potential traffic increases.

The noise impacts of the project were based upon the relationship of the projected noise levels to the FHWA noise abatement criteria and to the ambient noise levels. Noise impacts occur when the FHWA noise abatement criteria (Table 11) are approached or exceeded or when the predicted traffic noise levels substantially exceed the existing noise levels. The Maryland State Highway

TABLE 11
NOISE ABATEMENT CRITERIA

Activity Category	$L_{eq}(h)$	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	---------	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Reference: 23 CFR, Part 772.

Administration uses a 10 dBA increase to define a substantial increase. Noise abatement will be evaluated when a noise impact is identified. The project falls under activity category B (67 Leq).

The factors that were considered when determining whether mitigation is reasonable and feasible are:

- o Whether a feasible method is available to reduce the noise
- o Whether the noise mitigation is cost-effective for those receptors that are impacted - approximately $40,000 per impacted residence
- o Whether noise mitigation is acceptable to at least 75 percent of the affected property owners.

An effective barrier should, in general, extend in both directions to four times the distance between receiver and roadway (source). In addition, an effective barrier should provide a 7-10 dBA reduction in the noise level as a preliminary design goal. However, any impacted noise receptor which will receive a 5 decibel reduction is considered when determining the cost effectiveness of a barrier.

Cost effectiveness is determined by dividing the total number of impacted sensitive sites in a specified noise sensitive area, that will receive at least a 5 dBA reduction of noise levels, into the total cost of the noise mitigation. For the purpose of comparison, a total cost of $27 per square foot is assumed to estimate total barrier cost. This cost figure is based upon current costs experienced by the Maryland State Highway Administration and includes the cost of panels, footing, drainage, landscaping, and overhead. The State Highway Administration has established approximately $40,000 per residence protected as being the maximum cost for a barrier to be considered reasonable.

Consideration is based upon the size of the impacted area (number of structures, spatial distribution, etc.), the predominant activities occurring within the area, the visual impact of the control measure, practicality of construction, feasibility, and reasonableness.

2. Impact Analysis

The anticipated noise impacts of the proposed improvements modeled under the Build Alternate were based upon the relationship of the predicted noise levels

to Federal Highway Administration criteria. Abatement is considered if the predicted noise levels approach or exceed the noise abatement criteria of 67 dBA as maintained by the Federal Highway Administration.

Three of the four sites were predicted to exceed FHWA's noise abatement criteria. These locations were considered for noise abatement.

3. Abatement Analysis

NSA 1

This two-story brick duplex residence is located near the existing split of Ritchie-Marlboro Road and Ritchie Road Spur. The predicted Build noise level is 66 dBA, which is 5 dBA below the ambient noise level and 5 dBA below the predicted No-Build noise level. The relocation of Ritchie-Marlboro Road further from the residence for the Build Alternate is the reason for lower Build noise levels. Noise abatement will not be considered at this site.

NSA 2

This site, the Fernwood Mobile Home Park, is located in the southeast quadrant of the proposed interchange. The closest homes along Park Drive are approximately 600 feet from I-95. Noise levels at this site for the Build Alternate would be 67 dBA. This level is the same as the No-Build Alternate noise level and the ambient noise level.

Approximately seven homes would have noise levels equal to the noise abatement criteria. Because of the distance from the roadway and the topography of the intermittent land, a noise wall cannot be built to obtain more than a 2 dBA insertion loss. A wall 1,690 feet in length and 18 feet in height would achieve only a 2 dBA insertion loss. Based on the $27 per square foot multiplier used for noise walls, the total cost of this structure is $821,300, or $117,000 for each of the seven impacted residences with none being "protected." Noise mitigation is not considered reasonable or feasible at this site.

NSA 3

Four single family residences on Ritchie-Marlboro Road just west of Sansbury Road comprise this noise sensitive area. With Build noise levels of 70 dBA, this area qualifies for noise abatement evaluation. The Build noise level is 1 dBA below the ambient noise level and 4 dBA above the No-Build noise level.

Noise levels for this area could be abated 5 dBA with the construction of a noise wall along Ritchie-Marlboro Road. The required wall would be 625 feet in length and 18 feet in height. The cost of the wall would be $303,800 and has an associated cost-per-residence of $75,900. However, this cost per residence substantially exceeds $40,000 per residence and is not considered reasonable.

NSA 4

Greenwood Manor Park is located in the northeast quadrant of the proposed interchange and is designated Noise Sensitive Area 4. Build noise levels at the right-of-way of the northeast directional ramp near the merge with I-95 would be 73 dBA. Noise levels at points 150 feet beyond the right-of-way would be approximately 70 dBA. No-Build noise levels for the site are 1 dBA below the build noise levels and the ambient noise level was 6 below the Build noise level (67 dBA).

To avoid noise impact on the parklands a noise wall approximately 820 feet in length and 18 feet in height would be required. This wall would reduce noise levels within the parkland a minimum of 5 dBA. The total cost of the wall would be $399,000 or $57,000 per residence protected for the equivalence of seven residences based on one residence per 125 linear feet of frontage of noise wall. This wall is not considered reasonable or feasible.

Other Mitigation Measures

In addition to noise walls, other abatement measures were considered. These include:

TABLE 12
NOISE ABATEMENT SUMMARY

Receptor Site	Location/Description	Noise Level (dBA)				Length; Average Ht. Range Ht. (Ft.)	Total Cost	Number Protected	Cost Per Residence
		Ambient	No Build	Build	Abated; IL				
1	2-Story Brick Duplex on Ritchie-Marlboro Road	71[1]	71[1]	66	--	---	---	---	---
2	Fernwood Mobile Home Park	67	67[1]	67[1]	--[2]	1690; 18 18	$821,300	---	---
3	2-Story Single Family Residence at 1657 Ritchie-Marlboro Road	71	66	70[1]	65	625; 18 18	$303,800	4	$75,900
4	Greenwood Manor Park - Near Proposed Right-of-way	67	72[1]	73[1]	--[2]	820; 18 18	$399,000	7	$57,000

[1]Exceeds FHWA Noise Abatement Criteria

[2]Unable to meet minimum Insertion Loss Criteria of 5 dBA

Traffic Management Measures

Traffic management measures which could be used include traffic control devices and signing for prohibition of certain vehicles (heavy trucks), time use restrictions for certain types of vehicles, modified speed limits and exclusive lane designations.

It is not possible to prohibit heavy trucks from this type of facility, as it is part of the interstate system.

Alterations of Horizontal and Vertical Alignment

This is not feasible as I-95 is an existing facility.

Acquisition of Real Property or Property Rights to Establish Buffer Zones

Existing residential development immediately adjacent to existing I-95 makes it infeasible to acquire significant amounts of property for buffer areas.

Earth Berms

After analysis of the four noise-sensitive areas (NSA's) that were considered eligible for noise abatement, it has been determined that berms are not feasible in any of these areas. The reasons for this conclusion are summarized below.

At Noise Sensitive Area 1, there is no room between the roadway and right-of-way to place a berm and additionally a berm would infringe upon the sight distance at the intersection of Ritchie-Marlboro Road and Hampton Park Boulevard.

For Noise Sensitive Area 2, the roadway is elevated approximately 20 feet above the right-of-way elevation and a berm of any feasible height is not obtainable in the available right-of-way.

For Noise Sensitive Area 3, the limited right-of-way does not allow enough spacing for a feasible berm system.

At Noise Sensitive Area 4, the existing steep slopes of the parkland and the limited right-of-way from the northeast directional ramp do not allow for the construction of a berm of any substantial height.

Summary

Noise barriers have been analyzed for this project. Based on the information available, it appears that barriers/berms are not reasonable or feasible for this project.

4. Construction Impacts

An increase in project area noise levels would occur during the construction of the proposed improvements. Construction noise differs significantly from that generated by normal traffic due to its unusual spectral and temporal nature. The actual level of impact during this period will be a function of the number and types of equipment being used, as well as the overall construction procedure.

Generally, construction activities would occur during normal working hours on weekdays. Therefore, noise impacts experienced by local residents as a result of construction activities should not occur during sleep or outdoor recreation periods.

A number of measures can be utilized in order to minimize noise resulting from such activities. Such measures include, but are not limited to, the following:

- o Equip any internal combustion engine used for any purpose on or related to the job with a properly operating muffler;
- o Conduct truck loading, unloading and hauling so that noise is kept to a minimum;
- o Route construction equipment and vehicles in areas that will cause the least disturbance to nearby receptors where possible; and
- o When appropriate, place continuously operated diesel-powdered equipment, such as compressors or generators, in areas as far from or shielded from noise sensitive locations.

COMMENTS AND COORDINATION

COMMUNITY AND AGENCY COORDINATION

Community and agency participation is an integral and essential part of the alternatives development and evaluation process. Since 1987, these project activities have been supervised by the Maryland State Highway Administration (SHA).

The first stage of the project was to gather data, define feasible alternatives and options and conduct preliminary scoping with federal, state and local agencies. In addition, the public was notified and a Alternates Public meeting for this project was held in Prince George's County on May 5, 1988. The majority of comments received at this meeting primarily addressed emergency vehicles response time to the Fernwood Trailer Park. These comments were expressed by the local Fire Department as well as residents of the Trailer Park. Additional comments included concerns about sprinkler or standpipe connections and adequate water supply for beltway.

Local citizens also wanted Walker Mill Road widened before the construction of the proposed interchange.

In Stage II of the project, alternatives were defined for the environmental assessment. Comments from the public were reviewed and considered in this process.

On January 17, 1990, Maryland State Highway Administration held a Quarterly Interagency Meeting to present environmental considerations regarding this project. The agencies were concerned about the potential for secondary impacts as a result of the proposed interchange and wanted to focus on the inpacts of the phased construction of the interchange. Coordination with the Prince George's County Government Fire Department has been ongoing. Further contact with local, state and federal agencies was performed throughout the project as well. Coordination letters appear at the end of this Section.

Agencies contacted for scoping or information include:

U.S. Fish and Wildlife Service

U.S Department of Agriculture and Soil Conservation Service

U.S. Army Corps of Engineers
State of Maryland Department of the Environment
Maryland Department of Natural Resources
The Maryland National Capital Park and Planning Commission
Maryland Historical Trust
Chesapeake Bay Critical Areas Commission
Prince George's County Government Fire Department Headquarters
Prince George's County Government

Maryland Historical Trust

January 6, 1987

Ms. Cynthia Simpson, Chief
Environmental Management
Maryland Dept. of Transportation
State Highway Administration
P O Box 717
707 N. Calvert Street
Baltimore, Maryland 21203-0717

RE: I-95/Ritchie Marlboro Road
Prince George's County, Maryland

Dear Ms. Simpson:

Thank you for your letter of December 11, 1986 concerning the above-referenced project. Our office concurs with your opinion that the Old Ritchie Store (PG75A3) is not eligible for the National Register.

Sincerely,

George J. Andreve

George J. Andreve
Project Review Administrator

GJA/AHL/mmc
cc: Ms. Rita Suffness
Mrs. Sara Walton
Mr. W. Dickerson Charlton

129

Maryland Department of Natural Resources

Maryland Geological Survey
2300 St. Paul Street
Baltimore, Maryland 21218
Telephone: (301) 554-5500

William Donald Schaefer
Governor

Torrey C. Brown, M.D.
Secretary

Kenneth N. Weaver
Director

Emery T. Cleaves
Deputy Director

Division of Archeology
(301) 554-5530

1 May 1987

Mr. Louis H. Ege, Jr.
Deputy Director
Division of Project Development
State Highway Administration
P.O. Box 717/707 North Calvert Street
Baltimore, Maryland 21203-0717

RE: Contract No. P 874-101-372N
Interstate Route 95/Ritchie
Marlboro Road, Prince Georges County
PDMS No. 162072

Dear Mr. Ege:

I have reviewed the above-referenced project with regard to archeological resources. Within the circumscribed area there is a potential for the presence of prehistoric sites. The prediction is based on environmental factors. Several small streams, part of the Southwest Branch drainage, cross the project area. Three streams have their origins in or near the project. These hydrologic features and associated well-drained terrain offered an environmental setting desired by prehistoric populations for settlement and the procurement of native foods. An Archaic and Woodland period prehistoric site has been recorded near a tributary of Southwest Branch and just northeast of the project area.

Based on the environmental character of the area, suitability for Amerindian settlement, and the nearby presence of a site, there is a moderate potential for the presence of prehistoric sites within the project.

If I can be of further assistance, please do not hesitate to contact me.

Sincerely,

Ted M. Payne
Highway Project Director

TMP:lw

cc: Cynthia D. Simpson
Joseph Hopkins, IIDNR TTY for Deaf: 301-974-3683

THE PRINCE GEORGE'S COUNTY GOVERNMENT

Fire Department Headquarters

Office of the Fire Chief

ALL AMERICA COMMUNITY 1986-1987

September 11, 1989

Cynthia D. Simpson
Assistant Division Chief
Project Planning Division
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21203-0717

Dear Ms. Simpson:

The Prince George's County Fire Department appreciates the opportunity to communicate our concerns regarding the public safety of the community. The proposed interchange of I-95 and Ritchie-Marlboro Road is a much needed project to alleviate the civilian/industrial traffic congestion on both Route 4 and Route 214.

There are several major concerns we are proposing to you for consideration. The following items are of great importance to maintain the highest degree of public safety protection to the community.

1. Access for emergency vehicle response to the proposed Walker Mill Road Extended east of the Ritchie Fire Station is essential to maintain an adequate level of fire and rescue services to the community. Without this access, it would be mandatory for prime responding companies to travel north on Ritchie Road and then contend with the major intersection at Walker Mill Road. This will increase travel distance by a mile, and increase response time by a minimum of 2 minutes.

2. Maintain uninterrupted passage east bound on Ritchie-Marlboro Road during construction. This is the primary access to an elementary school, a 330 unit mobile home park, and numerous other residences and businesses. Current response time to the school and park is 3 to 5 minutes. If the road is obstructed, our response time would be doubled to 7 to 10 minutes.

9201 Basil Court, Fourth Floor East
Landover, Maryland 20785
VOICE-(301) 925-5200 FAX-(301) 925-5212 TDD-(301) 925-5167
The "first" county in the nation to require sprinklers in all residences.

3. Great study should be given to maintain the northern (Fernwood Drive) access to Fernwood Trailer Park. Quick access is of the utmost importance to a mobile home fire. Due to the very lightweight construction of a trailer, fire spread is extremely rapid. Current response time to Fernwood is approximately 3 minutes. If Fernwood Drive is closed at Ritchie-Marlboro Road, emergency vehicles would have to use the southern access off Sansbury Road, literally driving around the park to enter. This would more than double our response time.

3. An emergency vehicle access to Walker Mill Road Extended, east of the Ritchie Fire Station, is highly recommended. This is a major response route to maintain adequate protection for the community. Without this access, it would be mandatory for the responding fire company to travel north on Ritchie Road to Walker Mill Road (a major intersection). This would add an additional mile to travel, increasing our response time by approximately 2 minutes.

4. We request that consideration be given to installing a dry standpipe on the overpass as part of the project. It is realized that installation would be based on available funds. Even though there is no requirement for this system, we feel that it would greatly enhance our ability to provide a rapid and continuous water supply for incidents on the Beltway in this area.

With the addition of the proposed interchange at the Ritchie-Marlboro Road location, access to the Beltway will be greatly enhanced. We estimate that the first arriving emergency units will be able to reach incidents approximately 3 to 5 minutes faster.

We look forward to completion of this project. Our assistance with this or any other project within Prince George's County is always available.

Sincerely,

M. H. (Jim) Estepp
Fire Chief
Chief of Department

MHE/kel
CENDIV6

THE PRINCE GEORGE'S COUNTY GOVERNMENT

Fire Department Headquarters

Office of the Fire Chief

ALL AMERICA COMMUNITY 1986-1987

132

December 14, 1989

Mr. Louis H. Ege, Jr.
Deputy Director
Maryland Department of Transportation
State Highway Administration
Office of Planning and
Preliminary Engineering
707 North Calvert Street
Baltimore, Maryland 21203-0717

Dear Mr. Ege:

Thank you for allowing us the opportunity to review the new emergency access to the communities surrounding the proposed interchange of I-95 and Ritchie-Marlboro Road.

After a thorough review of the plans, we find option 4 most appropriate for emergency response vehicles. This will allow Prince George's County Fire Station 37 (Ritchie Station) adequate access time for emergency and fire suppression vehicles.

There are several major concerns that we are proposing to you for consideration. The following items are of great importance to maintain the highest degree of fire protection to the community.

1. Assure that the new Ritchie-Marlboro Road extends directly to Walker Mill Road.

2. Maintain direct access from Old Ritchie-Marlboro Road to Hampton Park Boulevard for Ritchie Fire Station to eliminate delayed access. In addition, provide a traffic control device at the intersection of Old Ritchie-Marlboro Road and Hampton Park Boulevard.

3. Maintain road access to all existing structures near H. Winship Wheatley Special Education Building.

9201 Basil Court, Fourth Floor East
Landover, Maryland 20785
VOICE-(301) 925-5200 FAX-(301) 925-5212 TDD-(301) 925-5167
The "first" county in the nation to require sprinklers in all residences.

4. We request that consideration be given to installing a dry standpipe on the overpass as part of the project. It is realized that installation would be based on available funds. We feel that it would greatly enhance our ability to provide a rapid and continuous water supply for incidents on the Route I-95 in this area.

5. Assure that adequate fire hydrant coverage to all existing structures will not be diminished by the new construction. The fire hydrants must be within 500 feet of all parts of buildings and within 200 feet of fire department connections.

6. Maintain adequate emergency vehicle access roads and shoulders while the new road is under construction.

If you have any additional questions, please do not hesitate to contact my office.

Sincerely,

Steven T. Edwards
Lieutenant Colonel
Acting Fire Chief

STE/dph

cc: Cynthia D. Simpson
Assistant Division Chief
Project Planning Division

THE PRINCE GEORGE'S COUNTY GOVERNMENT

PROJECT

AUG 28 2 25 PM '89

August 24, 1989

Louis H. Ege, Jr.
Deputy Director
Office of Planning and
Preliminary Engineering
Maryland Department of Transportation
707 N. Calvert Street
Baltimore, Maryland 21203-0717

Dear Mr. Ege:

The Prince George's County Police Department appreciates the opportunity to participate in the study of the I95/Ritchie-Marlboro Road interchange.

As with any major highway construction project, significant traffic delays would be expected. However, with advance information as to where and when these delays will occur, planning the movement of emergency vehicles around the problem area can be accomplished. With this prior planning emergency response time should not be seriously protracted.

We look forward to continued communication and coordination with all agencies involved in this project.

If I can be of any assistance please feel free to call me or contact Sergeant David L. Dennison, O.I.C. of the Traffic Safety Unit at 731-4422.

Sincerely,

DAVID B. MITCHELL
Lieutenant Colonel
Chief, Bureau of Patrol

135

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Division of Ecological Services
1825 Virginia Street
Annapolis, Maryland 21401

April 6, 1987

PROJECT DEVELOPMENT DIVISION
APR 9 9 29 AM '87

Ms. Cynthia D. Simpson
Chief, Environmental Management
Maryland Department of Transportation
P. O. Box 717
707 North Calvert Street
Baltimore, Maryland 21203-0717

Dear Ms. Simpson:

This responds to your letters of March 19, 1987, requesting information on the presence of Federally listed endangered or threatened species within the impact areas of the following projects:

PDMS No. 112043 U. S. Rt 48/219 interchange, Garrett County
PDMS No. 161088 Interstate 95/Ritchie interchange, Prince Georges County

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species are known to exist in the project impact areas. Therefore, no Biological Assessment or further Section 7 Consultation is required with the Fish and Wildlife Service (FWS). Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

The following "Candidate" species (those placed under review in the Federal Register to determine suitability for listing) may be present in the project impact areas of PDMS 112043 in Garrett County:

green salamander (Aneides aeneus)
hellbender (Cryptobranchus alleganiensis)
water shrew (Sorex palustrus punctulatus)
jacobs ladder (Polemonium van Bruntiae)

Candidate species are not legally protected under the Endangered Species Act and biological assessment and consultation requirements pursuant to that legislation do not apply to them. They are included here for the purpose of notifying you of possible future proposals and listings in

advance, for consideration in your NEPA review process, and to encourage efforts to avoid adverse impacts to them. Additional information on these candidate species may be obtained by contacting Mr. Ed Thompson of the Maryland Natural Heritage Program, Route 2, Box 434, Finzel, Maryland 21532.

This response relates only to endangered species under our jurisdiction. It does not address other FWS concerns under the Fish and Wildlife Coordination Act or other legislation.

Thank you for your interest in endangered species. If you have any questions or need further assistance, please contact Judy Jacobs of our Endangered Species staff at (301) 269-6324.

Sincerely yours,

Glenn Kinser
Supervisor
Annapolis Field Office

137

State of Maryland

DEPARTMENT OF THE ENVIRONMENT

2500 Broening Highway, Baltimore, Maryland 21224
Area Code 301 • 631-

William Donald Schaefer
Governor

Martin W. Walsh, Jr.
Secretary

November 16, 1989

RECEIVED
NOV 22 1989

Mr. William Zemaitis
Environmental Scientist
Gannett Fleming Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Dear Mr. Zemaitis:

In reference to your request to Dr. Robert Magnien for water quality data in the Southwest Branch of the Western Branch of the Patuxent River, I have enclosed a computer printout of specific water quality data for your information. I hope that you find this information useful.

Only one station has been sampled in that stream (SWB0002), and as you can see, the data is more than 20 years old. This station is located downstream of your project area at the Southwest Branch crossing of White House Road. You may wish to contact the Prince George's County Environmental Health Director (301 794-6800) or the National Capital Park and Planning Commission (301 699-2527) to see if they have more recent data for that area.

If you need additional information, please feel free to call me at (301) 631-3575.

Sincerely,

J. Shermer Garrison
Chesapeake Bay and Special Projects
Program

Enclosure

Maryland Department of Natural Resources

Maryland Geological Survey
2300 St. Paul Street
Baltimore, Maryland 21218
Telephone: (301) 554-5554

RECEIVED 138
NOV 8 1989

November 6, 1989

Mr. William R. Zemaitis
Garnett Flemings Transportation Engineers, Inc.
P.O. Box 1963
Harrisburg, PA 17105

Re: File 25578.170

Dear Mr. Zemaitis:

The only ground-water quality information in our files for the Dd quadrangle of Prince George's County is attached. Two samples are reported, Dd 6 and Dd 17. Dd 6 is a water table well, but the analysis is from 1949.

Best regards,

Harry J. Hansen
Program Chief
Hydrogeology and Hydrology Program

HJH:da
Encl: Q-W information

139

Department of Natural Resources
MARYLAND FOREST, PARK & WILDLIFE SERVICE
Tawes Office Building
Annapolis, Maryland 21401

TORREY C. BROWN, M.D.
SECRETARY

DONALD E. MacLAUGHLAN
DIRECTOR

April 21, 1987

Ms. Cynthia D. Simpson, Chief
Environmental Management
MD Department of Transportation
P.O. Box 717
707 North Calvert Street
Balltimore, Maryland 21203-0717

RE: Contract No. P 874-101-372
Interstate Route 95/Ritchie
Marlboro Road PDMS No. 171088
Prince George's County

Dear Ms. Simpson:

Your request for information we may have concerning threatened or endangered species has been reviewed by Glenn D. Therres.

There are no federally listed threatened or endangered species in the proposed project location in Prince George's County.

Sincerely,

James Burtis, Jr.
Assistant Director

JB:emp

cc: Therres
Taylor
Boone

Maryland Department of Natural Resources

Tidewater Administration
Tawes State Office Building
580 Taylor Avenue
Annapolis, Maryland 21401

William Donald Schaefer
Governor

Torrey C. Brown, M.D.
Secretary

14D

March 26, 1987

Louis H. Ege, Jr.
Project Development Division
Maryland Department of Transportation
P.O. Box 717/707
North Calvert Street
Baltimore, Maryland 21203-0717

MAR 1 9 55 AM '87
PROJECT DEVELOPMENT DIVISION

Dear Mr. Ege;

In reference to your letter dated March 19, 1987 requesting fish species information from Southwest Branch, Patuxent River drainage, I am inclosing Table 1. This table lists fish species collected by electrofishing during 1978 in three tributaries to the Patuxent River in the general vicinity of Southwest Branch (in file data, Md. Fisheries Division). It could be expected that most of these same species would be found inhabiting Southwest Branch.

In 1982 our anadromous fish project documented white perch (Morone americana) in Western Branch at river mile 7.4 (junction of Cabin Branch and Back Branch with Western Branch). No sampling was conducted upstream of this site, however, I would expect White perch to be spawning in Southwest Branch during the spring months.

I would recommend additional electrofishing, specifically in Southwest Branch, during the spring months (March thru May) to document resident and migratory species inhabiting the stream.

Sincerely,

Ray C Dintaman, Jr

Ray C. Dintaman
Environmental Review

Telephone: (301) 974-3061
DNR TTY for Deaf: 301-974-3683

TABLE 1

Species collected by electrofishing from Patuxent River Tributaries (Millstream Branch, Horsepen Branch, and Northeast Branch of Western Branch) during 1978.

Lamprey Family (Petromyzontidae)
- American Brook Lamprey (Lampetra lamottei)
- Least Brook Lamprey (Okkelbergra aepyptera)
- Sea Lamprey (Petromyzon marinus)

Freshwater Eel Family (Anguillidae)
- American Eel (Anguilla rostrata)

Mud minnow Family (Umbridae)
- Eastern Mudminnow (Umbra pygmaea)

Pike Family (Esocidae)
- Redfin Pickerel (Esox americanus)
- Chain Pickerel (Esox niger)

Minnow Family (Cyprinidae)
- Rosyside Dace (Clinostomus funduloides)
- Cutlip Minnow (Exoglossum maxillingva)
- Golden Shiner (Notemigonus crysoleucas)
- Satinfin Shiner (Notropis anolostanus)
- Common Shiner (Notropis cornutis x N. rubellus)
- Swallowtail Shiner (Notropis procne)
- Spotfin Shiner (Notropis spilopterus)
- Blacknose Dace (Rhinichthy atratulus)
- Longnose Dace (Rhinichthys cataractae)
- Creek Chub (Semotilus atromaculatus)
- Fallfish (Semotilus corporalis)

Sucker Family (Catostomidae)
- White Sucker (Catostomus commersoni)
- Tadpole Madtorn (Noturus gyrinus)
- Margined Madtom (Noturus insignis)

Pirate Perch Family (Aphredideridac)
- Pirate Perch (Aphredoderus sayanus)

Sunfish Family (Centrarchidae)
- Bluespotted Sunfish (Enneacanthus glorisus)
- Pumpkinseed (Lepomis macrochirus)
- Bluegill (Lepomis macrochirus)
- White Crappie (Pomoxis annularis)
- Black Crappie (Pomxis nigromaculatus)

Perch Family (Percidae)
- Tessellated Darter (Etheostoma olmstedi)
- Shield Darter (Percina peltata)

142

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

6600 Kenilworth Avenue • Riverdale, Maryland 20737-0707

July 26, 1989

Ms. Cynthia Simpson
c/o State Highway Administration
707 N. Calvert Street
Room 503
Baltimore, Maryland 21203

Attention: Ms. Sharon Preller

Dear Ms. Preller:

Enclosed please find a copy of the record plat for Greenwood Manor Community Park. The park boundary has been outlined.

In addition, in answer to your questions, please take note of the following:

No federal funds were used by the Department of Parks and Recreation to acquire the above mentioned property. The parkland was acquired through mandatory dedication, as approved by the Planning Board.

Proposed uses for the park include passive recreational use and hiker-biker trails. Currently, the park is being used for recreational activities.

If I can be of any further assistance, please call me at 699-2522.

Sincerely,

Jacqueline Brown
Planning Technician

JAB:jbk

cc: Project File
Reading File

United States Department of Agriculture

Soil Conservation Service

COUNTY ADMINISTRATION BUILDING, ROOM 1020
14741 GOVERNOR ODEN BOWIE DRIVE
UPPER MARLBORO, MD 20772

143

January 30, 1990

Ms. Cynthia D. Simpson
Assistant Division Chief
Project Planning Division
Maryland Department of Transportation
State Highway Administration
707 North Calvert Street
Baltimore, MD 21203-0717

RE: Contract No. P 874-101-372
I-95 (Capital Beltway)
Interchange at Ritchie-Marlboro Road
PDMS No. 161088

Dear Ms. Simpson:

Enclosed is the completed Farmland Conversion Impact Rating (Form Ad-1006) for the project referenced above.

If you need additional assistance, please let me know.

Sincerely,

Larry S. Holmes
District Conservationist

Enclosure

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*

Name Of Project: I-95 (Capital Beltway) at Ritchie-Marlboro Road	Date Of Land Evaluation Request: December 28, 1989
Proposed Land Use: See Attachment	Federal Agency Involved: Federal Highway Administration
	County And State: Prince Georges County, MD

PART II *(To be completed by SCS)*

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply – do not complete additional parts of this form).* Yes ☒ No ☐		Date Request Received By SCS: 1-2-90	
Major Crop(s): Corn, Soybeans, Tobacco, Small Grains	Farmable Land In Govt. Jurisdiction: Acres: 145621 % 46.7	Acres Irrigated: None	Average Farm Size: 96
Name Of Land Evaluation System Used: P.G. Co., Land Eval. System	Name Of Local Site Assessment System: FPPA	Amount Of Farmland As Defined In FPPA: Acres: 111.98 % 35.9	Date Land Evaluation Returned By SCS: 1-30-90

PART III *(To be completed by Federal Agency)* — Alternate 5 Alternative Site Rating

	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	74.16			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	74.16			
PART IV *(To be completed by SCS)* **Land Evaluation Information**				
A. Total Acres Prime And Unique Farmland	13.2			
B. Total Acres Statewide And Local Important Farmland	29.6			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	.038			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	94			
PART V *(To be completed by SCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*				

RT VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160				
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100				
Total Site Assessment *(From Part VI above or a local site assessment)*	160				
TOTAL POINTS *(Total of above 2 lines)*	260				

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)

Form AD-1006 (10-83)

May 24, 1988

WETLAND FIELD VIEW
I-95 AT RITCHIE MARLOBORO ROAD

DATE: May 17, 1988

ATTENDEES: Sharon Preller - Environmental Manager, MDSHA
Victor Janata - Project Manager, MDSHA
Ed Myers - Project Engineer, Hurst-Rosche
David Coyne - Project Engineer, MDSHA
Mary Dircks - Army Corps of Engineers
Stephen Goodyear - Gannett Fleming

The purpose of the wetlands field view was to gain Army Corps of Engineers approval of wetland boundaries, value and significance of the impact.

Gannett Fleming provided a handout to be used as a guide during the field view. The handout included: on-site vegetation, hydrology and soils, wetland classification, and specific comments related to each wetland.

Location and relative size of each wetland were reviewed on aerial photography on which the highway plans were drawn.

At each site, wetland boundaries and the criteria used to establish the boundaries were described. Project right-of-way and wetland impacts were explained.

The following summarizes the findings at each of seven wetlands within the project site.

Wetland #1

Located south of Ritchie Marlboro Road and east of Fernwood Road

Classification: PF01A

Wetland #1 was field viewed.

Concurrance was given by the Corps of Engineers on the delineation of Wetland #1.

The possibility of moving the ramps to avoid the wetland was discussed. The location of a trailer court in the area proved to be a hinderance to this.

It was determined that the impact will be significant and replacement wetlands will be required.

Wetland #1 was determined to be of high value due to its function as wildlife habitat.

Wetland #2

Located south of Ritchie Marlboro Road and west of Fernwood Road.

Classification: PFO1A, PEM2B

Wetland #2 was field viewed.

Concurrance was given by the Corps of Engineers on the delineation of Wetland #2.

It was determined that the impact will be significant and replacement wetlands will be required.

Wetland #2 was determined to be of high value due to its function as wildlife habitat and corridor.

Wetland #3

Located north of Ritchie Marlboro Road and east of I-95.

Classification: PFO1A

Wetland #3 was field viewed.

Concurrence was given by the Corp of Engineers on the delineation of Wetland #3.

It was determined that the impact will be significant and replacement wetlands will be required.

Wetland #3 was determined to be of high value due to its function as wildlife habitat and corridor.

Wetland #4

Located adjacent to Ritchie Marlboro Road east of I-95.

Classification: $P\frac{EM1}{SS}B$

Wetland #4 was field viewed.

Concurrance was given by the Corps of Engineers on the delineation of Wetland #4.

It was determined that the impact will be significant and replacement wetlands will be required.

A value was not assigned to Wetland #4.

Wetland #5

Located west of I-95, adjacent to highway toe of fill, north of Ritchie Marlboro Road.

Classification: PSS1A, PF01A

Wetland #5 was partially field viewed. Existing fences and freshly planted crops made access difficult. It was explained that Wetland #5 has clear cut topographic and vegetative boundaries, and its location and extent were reviewed on the mapping.

Concurrance was given by the Corps of Engineers on the delineation of Wetland #5.

It was determined that the impact will be significant and replacement wetlands will be required.

Wetland #5 was determined to be of high value due to its function as wildlife habitat.

Wetland #6

Located west of I-95, adjacent to highway toe of fill, south of Ritchie Marlboro Road.

Classification: PSS1A

Wetland #6 was field viewed.

Concurrance was given by the Corps of Engineers on the delineation of Wetland #6.

It was determined that the impact will be significant and replacement wetlands will be required.

Wetland #6 was determined to be of high value due to its function as wildlife habitat.

Wetland #7

Located north of Ritchie Marlboro Road at Ritchie Road.

Classification: PEM1A

Wetland #7 was not field viewed due to its size and nature. Location and boundaries were reviewed on mapping.

Concurrance was given by the Corps of Engineers on the delineation of Wetland #7.

It was determined that the impact will be significant and replacement wetlands will be required.

148

Wetland #7 was determined to be of low value.

Submitted by:

F. Stephen Goodyear

F. Stephen Goodyear
Environmental Scientist

FSG/rw
cc: Sharon Preller
25578.170 File

KIDDE CONSULTANTS, INC.

950 Woodland Street
Suite 100
Mechanicsburg, PA 17055
(717) 691-1340

March 23, 1990

Mr. Louis H. Ege, Jr.
Deputy Director
Office of Planning & Preliminary Engineering
Maryland State Highway Administration
707 North Calvert Street
Baltimore, MD 21203-0717

Attention: Ms. Cynthia D. Simpson

Subject: Contract No. P 847-101-372 BCS 86-12D
I-95/Ritchie Marlboro Road Interchange
Phase I Archaeological Survey
Management Summary
KCI Job No. 0187319U

Gentlemen:

This letter provides a management summary of the Phase I Archaeological Survey at the proposed I-95/Ritchie Marlboro Road Interchange in Prince Georges County. Included are a description of our research methods, field observations, preliminary artifact analysis, conclusions, and recommendations for additional work.

Research Methods & Field Observations

Background research was conducted at the Maryland Geological Survey, the Maryland Historical Trust, and the Maryland National Capital Park and Planning Commission. Fieldwork was begun on January 17, 1990 and concluded on February 15, 1990. All high probability areas were shovel tested or, where possible, subjected to systematic surface collection. High probability areas were defined as areas within 300 ft. of water, and as knolls and hilltops. Shovel tests measuring 50 x 50 cm were placed at 65 ft. intervals. All excavated soil was screened through 1/4 in. mesh hardware cloth. An additional sample was made of low probability areas using the same sampling intensity and the same techniques. Disturbed areas, and the areas believed to be too wet for human settlement, were documented.

Geoffrey M. Gyrisco, Ph.D., served as project manager and historic archaeologist. Richard A. Geidel, Ph.D. ABD, served as field director and prehistoric archaeologist. At least one, and often both, were on-site at all times during field work. In the

area of the interchange, five archaeological sites were identified plus one isolated find of a projectile point. The sites discovered are described below:

Site 1

This site was discovered during a systematic surface collection of an agricultural field in the southeastern portion of the project area. The field is located on the east facing slope of a knoll overlooking a small stream at elevation of 140-160 ft. The southeast directional ramp of the proposed I-95 interchange will pass through the agricultural field.

A preliminary examination of the field yielded prehistoric stone tools, chipping debitage, and pottery sherds. A systematic investigation of the field was conducted by marking off a grid of square collection units, measuring 65 ft. on the side. Each collection unit was examined by an individual member of the survey team. The examiner traversed the unit parallel to crop rows at 10 foot intervals. All prehistoric artifacts noted during the traversal of the unit were collected by unit.

Two test units, each measuring 50 cm x 1 M, were excavated in the agricultural field. One test unit was placed in the northeast portion of the field; the other was placed in the southwest portion. These locations were chosen on the basis of distribution of artifacts in the surface collection unit. Units were located in the areas with the greatest artifact density. each test unit was excavated by hand to the base of the plow zone. No additional artifacts were recovered from the plow zone. The upper surface of the subsoil was cleaned by trowel scraping, and was examined for indications of intact archaeological deposits or features. Excavation then continued into the subsoil. When no artifacts or evidence of intact features were encountered in the upper 10 cm of the subsoil in either test unit, excavation was terminated.

The surface reconnaissance of this field yielded 124 prehistoric artifacts. These include: 17 pottery sherds, 14 bifacial tools, and/or cores, 90 pieces of chipped stone debitage, one piece of a round stone tool or ornament, and two pieces of fire cracked rock.

Site 2

This site was discovered while shovel testing an abandoned agricultural field in the northeast portion of the project area. The field is located on a nearly level area along the north side of Ritchie Marlboro Road at an elevation of approximately 160 ft. The field is within the proposed I-95 interchange right-of-way.

The field was investigated initially via a series of 14 50 cm x 50 cm shovel tests. These were placed in two transects parallel to the road, and 65 ft. apart. Shovel tests were excavated at 65 ft. intervals along each transect. A prehistoric pottery sherd and a chipped stone flake were recovered from the plow zone in the second test unit from the west end of the southern transect, and a prehistoric pottery sherd and a piece of possibly fire cracked rock were recovered from the third unit from the west end of the northern transect. A chipped stone flake was also recovered from the top of the subsoil in the test unit in the southern transect. The test units were excavated following strata apparent in the soil profile. When excavation of the plow zone was completed, the upper surface of the subsoil was cleaned by trowel scraping. No evidence of intact archaeological deposits or features were encountered in either of the test units. Excavation continued in each test unit to a depth of at least 10 cm below the last encountered artifact.

Additional test units were excavated at 15 ft. intervals around each of the original test units yielding prehistoric artifacts. Excavation of additional test units was terminated when artifacts were recovered. Another unit was excavated 15 ft. further away from the original test unit. If no artifacts were recovered from the plow zone in one of these test units, the surface of the subsoil was cleaned and checked, and excavation continued to a depth of at least 10 cm below the upper surface of the subsoil. Testing in each direction was terminated when a test unit in that direction yielded no artifacts. Testing around the original test unit on the northern transect yielded no additional artifacts. Testing around the original test unit on the southern transect yielded prehistoric pottery sherds from several locations suggesting a site area of approximately 75 ft. north to south, and 15 ft. east to west. A tip of a bifacial tool also was recovered.

Artifacts recovered from the preliminary examination of the site on the southern testing transect include: 7 pottery sherds, 1 biface fragment of unknown type, and 2 pieces of chip stone debithege. An additional sherd and a piece of possibly fire cracked rock were recovered from an isolated shovel test on the northern transect.

Site 3

This site was discovered during the systematic surface collection of an agricultural field in the northwestern portion of the project area. The field is located on the north and east-facing slopes of a knoll, above a small unnamed stream, at an elevation of 140-160 ft. The field is in the proposed I-95 interchange right-of-way.

The examination of the field was conducted by marking off a grid of square collection units measuring 65 ft. on the side. Each collection unit was examined by an individual member of the survey team. The examiner traversed the unit parallel to crop rows at 10 ft. intervals. All prehistoric artifacts found during the traversals of the unit were collected by unit. A 50 cm x 1 m test unit was excavated in the southwest portion of the agricultural field. This location was chosen on the basis of distribution of prehistoric artifacts in the surface collection unit. The unit was located in the area with the greatest density of artifacts. The test unit was excavated by hand to the base of the plow zone. The upper surface of the subsoil was cleaned by trowel scraping and was examined for evidence of intact archaeological deposits or features. Excavation then continued into the subsoil. Excavation was terminated when no artifacts were encountered in the upper 15 cm of the subsoil.

A feature filled with rounded quartz pebbles and cobbles was encountered in the subsoil along the southern wall of the test unit. The configuration of the stones and the tar paper covering over them suggests they represent a portion of a drain field of the septic system for a small house in the southwestern corner of the agricultural field.

The surface collection of the field yielded 48 prehistoric artifacts. These include: 17 pottery sherds, 3 bifacial tools, 1 core, 2 possibly fire cracked rocks, and 25 pieces of chipped

stone debitage. The test unit excavated yielded three additional flakes from the plow zone. No artifacts or evidence of intact prehistoric deposits or features were encountered in the subsoil of the test unit. A single pottery sherd was recovered from a test unit in a pasture to the west of the agricultural fields, and a large quartz cobble spall (possibly fire cracked) was recovered from a test unit in an abandoned agricultural field on the same knoll on the south side of Ritchie Marlboro Road. These isolated artifacts may represent outliers of this site.

Site 4

This site was discovered during the systematic surface collection of the agricultural field on which Site 3 was discovered. The field methods were the same as those described for Site 3. The site is located on the north facing slope of a knoll above a small unnamed stream at an elevation of 145-150 ft. The site is within the proposed interchange right-of-way.

Surface collection yielded 27 kaolin pipe stem fragments, 2 kaolin pipe bowl fragments, 5 sherds of Westerwald ware, and 1 sherd of tin glazed earthenware with purple decoration. It also yielded an ornamental piece of flat brass, 8 sherds of several types of stoneware, 11 sherds of lead-glazed redware, 1 sherd of heavily patinated green bottle glass, and 1 wine glass stem.

A 50 cm x 1 M test unit was excavated on the north side of the knoll. The location was chosen as the area with the greatest density of artifacts. The test unit was excavated by hand to the base of the plow zone. The plow zone soil was sifted through 1/4" mesh hardware cloth. The upper surface of the subsoil was cleaned by trowel scraping; it was examined for evidence of intact archaeological features. The edge of an apparent pit was revealed along the east side of the unit. Excavation of the upper portion of the feature lying within the unit yielded four square nails. Excavation of the plow zone of the unit yielded 1 kaolin pipe bowl fragment, 1 piece of white and brown stoneware of the late 19th-20th century, 4 pieces of glass and miscellaneous pieces of plastic, brick, and coal.

Site 5

This site was discovered while shovel testing abandoned agricultural fields in the northeastern portion of the project area. The field is on a slight knoll on the west facing slope above an unnamed stream at an elevation of approximately 170 ft. The northeast directional ramps of the proposed I-95 interchange will pass through the field. During the excavation of a 50 cm x 50 cm test unit along the southeastern edge of the abandoned field, chipped stone debithege was encountered in the plow zone. When the location of the test unit was checked on a project map, it was noted that the location is just outside of the proposed I-95 interchange right-of-way.

Instead of placing the additional test units outside of the project area, it was decided to expand the original unit to 1 M x 50 cm to expose a larger section of subsoil for examination of intact features or deposits. The soil from the test unit was removed following the strata apparent in the soil profile. When excavation of the plow zone was completed, the upper surface of the subsoil was cleaned by trowel scraping. No evidence of intact archaeological deposits or undisturbed features were encountered. The top 10 cm of the subsoil were excavated; no artifacts were recovered from this layer. Artifacts recovered from the single 1 M x 50 cm test unit on this site include: 7 pieces of chipped stone debitage, 2 pieces of possible fire cracked rock, and a flattened quartz cobble. While this cobble has not been altered, the stone is unusual in this location and may have served as a hearthstone. A fragment of a kaolin pipe bowl was also recovered from the excavation. No additional artifacts were encountered in the 50 cm x 50 cm test unit inside the project area near the site location.

CONCLUSIONS

Site 1

The recovered pottery has crushed stone temper and cord-impressed decoration, characteristic of Potomac Creek ware. This pottery type was produced during the Middle to Late Woodland period. The collected bifacial stone tools include: 3 projectile points that could be identified by type; 2 points are Late Woodland period Potomac triangular types, and 1 is a Middle

Woodland period Rossville type. These points support the occupations suggested by the pottery. A fourth biface is a projectile point fragment that may be of an Archaic period Kanawha stemmed type representing an early occupation at the site.

Site 2

The recovered pottery is crushed quartz tempered and cord-impressed Potomac Creek ware; again suggesting occupation of the site during the Middle to Late Woodland period. A single biface was recovered from the site, a projectile point tip which could not be identified by type.

Site 3

The recovered pottery is Potomac Creek ware. Two of the bifacial tools recovered from the site are projectile points; 1 is a Late Woodland period Potomac triangular type. This supports a Middle to Late Woodland period occupation. The other is a basal fragment of what appears to be an Archaic period side-notched type. Again, this suggests the possibility of an earlier occupation at the site.

GENERAL CONCLUSIONS

Three of the four prehistoric sites recovered during the survey yielded artifacts indicate Middle to Late Woodland occupations. These sites yielded Potomac Creek pottery as well as diagnostic stone tools. The presence of pottery suggests that these sites represent possible encampments; possibly resource procurement camps rather than hunting stations. Two of the sites also yielded projectile points indicative of earlier Archaic period occupations. Given the limited artifact assemblage from each site that can be assigned to the earlier occupation, it is not possible to assess the nature of the occupation. The fourth prehistoric site was discovered just outside the project area. The site received only limited investigation; it did not yield any diagnostic artifacts that could be used to assess its function or the period of its occupation.

The historic site dated to the 18th or first half of the 19th centuries. The presence of tin glazed earthenware and Westerwald ware supports an 18th century date. The large number of kaolin pipe stems confirms a date no later than the mid 19th century. The tight clustering of material, the location on a knoll overlooking a small stream, as well as the feature make it unlikely that these artifacts were deposited as the result of the spreading of trash or manure on the fields.

There are no detailed 18th century maps of the area, but a map which does cover the area and which shows taverns, shows no tavern at this location. The 19th century atlases show no buildings at this location. Furthermore, there are almost no artifacts dating to the second half of the 19th century, although earlier and later periods are well represented in the assemblage from the plow zone. The high proportion of artifacts associated with the smoking of tobacco and the drinking of alcoholic beverages is unusual. It may be due, in part, to the destruction of iron artifacts during two centuries of plowing. It is concluded that the site may represent an outlying building or a special activity area on one of the major plantations in the vicinity. One of those plantations, White House, is located to the east of the project area.

Recommendations

Site 1

This site is located along the proposed southeast directional ramp for the I-95 interchange. The site extends outside of the proposed interchange right-of-way. It is recommended that additional archaeological investigation of the site be undertaken to determine precisely the limits of the site, and to evaluate its potential eligibility for inclusion in the National Register.

Sites 2 and 3

These sites lie completely within the proposed I-95 interchange right-of-way. It is recommended that additional archaeological investigation be undertaken at these sites in order to determine more precisely the horizontal boundaries of the sites and to determine the sites' eligibility for inclusion in the National Register.

Site 4

This site is located entirely within the proposed I-95 interchange right-of-way. It is recommended that additional background research be undertaken in an attempt to identify the owners, occupants, and functions of the site. Additional field investigation should be undertaken to explore and identify the feature discovered, and determine the presence of other features as well as the limits of the site. A larger assemblage of artifacts would enable the site to be more securely dated and provide a stronger basis for determining its function. This information is needed to evaluate the site's potential eligibility for inclusion in the National Register.

Site 5

This site appears to be located immediately outside of the proposed I-95 interchange right-of-way. No further investigation of this site is recommended as the project is currently designed. However, the site location should be noted. To protect the site from accidental damage, the boundary fence should be erected in this vicinity prior to earth moving during construction. Additional investigation should be undertaken to explore the site if the project designs are altered to include the site location within the interchange right-of-way.

The conclusions noted above, particularly the analysis of artifacts, are preliminary pending a full analysis of all the data collected and preparation of the project report. The sites are of particular importance as they appear to be undisturbed except for plowing and may be representative of types of sites which are being rapidly lost to open development in this part of Maryland.

The large number of diagnostic artifacts on the surface of the ground of these sites suggest that they have escaped notice of collectors. In order to protect these sites from vandalism, and to protect the private property owners from the disturbance of their property, I urged that in public documents the need for a Phase II Archaeological Survey be noted without the description of the sites and their location. Once the sites have been inves-

KIDDE CONSULTANTS, INC.

tigated and the properties converted to highway use, it will be appropriate to fully publicize the important archaeological resources discovered at this location.

If you have any questions, please do not hesitate to call me at (717) 691-3471. We look forward to your comments and those of the Maryland Historical Trust and to providing you with the draft project report.

Very truly yours,

Geoffrey M. Gyrisco

Geoffrey M. Gyrisco, Ph.D.
Archaeologist/Historian

il

159

THE PRINCE GEORGE'S COUNTY GOVERNMENT
Fire Department Headquarters

ALL AMERICA COMMUNITY 1986-1987

Office of the Fire Chief

May 10, 1990

Mr. Louis H. Ege, Jr.
Deputy Director
State Highway Administration
Office of Planning and Preliminary Engineering
707 North Calvert Street
Baltimore, Maryland 21203-0717

Dear Mr. Ege:

This is to confirm that the Department has reviewed the results of a meeting held in December concerning impact of Contract No. P874-101-372 on Fire Department operations. After careful review, I find that all concerns were addressed and that the State Highway Administration is taking positive steps to resolve those concerns.

As the project proceeds toward completion, I would request the Fire Department be involved in matters that affect its operations. If you have questions, please contact Major Richard T. Williams, Central Division Commander, at 772-9104.

Sincerely,

Steven T. Edwards
Fire Chief
Chief of Department

STE/mvb
DIV20049MVB

cc: J. E. Proels, Lt. Colonel, Field Operations Command
R. T. Williams, Major, Central Division Commander
S. W. Nichols, Captain, Battalion 1
J. J. Bernard, Volunteer Chief, Company 37

9201 Basil Court, Fourth Floor East
Landover, Maryland 20785
VOICE-(301) 925-5200 FAX-(301) 925-5212 TDD-(301) 925-5167
The "first" county in the nation to require sprinklers in all residences.

Maryland Department of Transportation
State Highway Administration

Richard H. Trainor
Secretary
Hal Kassoff
Administrator

January 2, 1990

MEMORANDUM

TO: Mr. Louis H. Ege, Jr.
Deputy Director
Office of Planning and
Preliminary Engineering

FROM: Victor F. Janata
Project Manager
Project Planning Division VFJ

SUBJECT: Contract No. P 874-101-372
I-95 (Capital Beltway)
at Ritchie-Marlboro Road
Interchange Study
PDMS No. 161088

A meeting was held on December 20, 1989 at the Largo Government Center in Largo, Maryland to review and discuss the proposed access and concerns of the Ritchie Fire Station #37 located in the study area. The following persons were in attendance:

Mr. John Proels	Lt. Col., Field Operations, Prince George's County Fire Department
Mr. Wally Nichols	Battalion Commander, Prince George's County Fire Department
Mr. John Bernard	Chief, Ritchie VFD
Mr. Richard Cunningham	Assistant Chief, Ritchie VFD
Mr. John Contestabile	Project Planning Division
Ms. Sharon Preller	" " "
Mr. Victor Janata	" " "
Mr. David Coyne	" " "
Mr. Edward Myers	Hurst-Rosche Engineers

Introductions were made and the fire officials were briefed on the study.

The following issues and concerns were raised by the fire officials previously by letter or at the meeting:

* **Access to the new Ritchie-Marlboro Road.**

  Existing Ritchie-Marlboro Road would end in a cul-de-sac, from which an access road would connect to the proposed Ritchie-Marlboro Road/Hampton Park Boulevard intersection. Remote controlled gates at each end of the access road would restrict use of this road to fire vehicles only. The intersection traffic signals would be remote controlled to all turn red when the fire road was used. This approach was discussed with the Office of Traffic and it was concluded that this is a workable solution that has been used elsewhere.

* **Schedule to construct.**

  The project is currently funded for the project planning phase only in the current Consolidated Transportation Program. We are unable to furnish a construction date until the funding for the construcion phase became available. We must first secure the funds for the final design and right-of-way phases. In a best case scenerio, the full interchange could be expected to be open to traffic in about seven to ten years.

* **Access to the Fernwood trailer park which would not significantly increase response time.**

  A proposed service road located off of Sansbury Drive which would parallel Ritchie-Marlboro Road would serve the trailer park; this would increase the response distance by approximately one-half mile, which the fire officials agreed was acceptable.

* **Continued access to the existing structures near the H. Winship Wheatley Special Education Building.**

  The access would remain the same, under the proposed improvement.

* **Possibility of a hydrant or standpipe located on I-95 (Capital Beltway) in the vicinity of the project.**

  We stated that we would inquire about the possibility of a hydrant or standpipe located on I-95 but we were unsure what SHA's policy is on that matter. We did state we would be responsible for any hydrants which had to be moved or replaced as a result of our improvements.

* Possibility of median breaks along proposed Ritchie-Marlboro Road to respond to vehicular accidents while restricting operation of only one roadway of the dual highway.

  We will work with our Highway Design Division to examine the possibility of median breaks along the proposed Ritchie-Marlboro Road.

The meeting lasted approximately one hour and the fire officials appeared satisfied with the steps we have taken to date to address their concerns. They stated they would contact us if they had any further questions or concerns.

VFJ:ds
cc: Attendees
Mr. Anthony M. Capizzi
Mr. Creston J. Mills, Jr.
Mr. Neil J. Pedersen

APPENDIX

Attachment for Environmental
Impact Documents
Revised: July 28, 1989
Relocation Assistance Division

"SUMMARY OF THE RELOCATION ASSISTANCE PROGRAM OF THE STATE HIGHWAY ADMINISTRATION OF MARYLAND"

All State Highway Administration projects must comply with the provisions of the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970" (Public Law 91-646 and Public Law 100-17) and amendments as published in the Annotated Code of Maryland entitled Real Property Article Subtitle 2, Relocation and Assistance Sections 12-201 to 12-212. The Maryland Department of Transportation, State Highway Administration, Relocation Assistance Division, administers the Transportation Relocation Assistance Program in the State of Maryland.

The provisions of the Federal and State Law require the State Highway Administration to provide payments and services to persons displaced by a public project. The payments that are provided include replacement housing payments and/or moving costs. The maximum limits of the replacement housing payments are $22,500 for owner-occupants and $5,250 for tenant-occupants. Certain payments may also be made for increased mortgage interest costs and/or incidental expenses, provided that the total of all housing benefits does not exceed the above mentioned limits. In order to receive these payments, the displaced person must occupy decent, safe and sanitary replacement housing. In addition to the replacement housing payments described above, there are also moving expense payments to persons, businesses, farms and non-profit organizations up to 50 miles. Actual moving expenses for residences include actual moving costs or a schedule moving expense payment, up to $1,050.

The moving cost payments to businesses are broken down into several categories, which include actual moving expense payments, fixed payments "in lieu of" actual moving expenses, limited to $20,000 and reestablishment expenses, limited to $10,000. The owner of a displaced business is entitled to receive a payment for actual reasonable moving and related expenses in moving his business, or personal property; actual direct losses of tangible personal property; and actual reasonable expenses for searching, limited to $1,000, for a replacement site.

The actual reasonable moving expenses may be paid for a move by a commercial mover or for a self-move. Payments for the actual reasonable expenses are limited to a 50 mile radius unless the agency determines a longer distance is necessary. The expenses claimed for actual cost commercial moves must be supported by firm bids and receipted bills. An inventory of the items to be moved must be prepared in all cases. In self-moves, the State will negotiate an amount for payment, usually lower than the lowest acceptable bid obtained. The allowable expenses of a self-move may include amounts paid for equipment hired, the cost of using the business' own vehicles or equipment, wages paid to persons who physically participate in the move, the cost of actual supervision of the move, replacement insurance for the personal property moved, costs of licenses or permits required, and other related expenses.

In addition to the actual moving expenses mentioned above, the displaced business is entitled to receive a payment for the actual direct losses of tangible personal property that the business is entitled to relocate but elects not to move. These payments may only be made after an effort by the owner to sell the personal property involved. The costs of the sale are also reimbursable moving expenses. If the business elects to move or discontinue it's operation the payment shall consist of the lesser of:

The fair market value of the item for continued use at the displacement site, less the proceeds from its sale; or

The estimated cost of moving the item, but with no allowance for storage.

They are also entitled to reasonable cost incurred in attempting to sell an item that is not to be relocated.

If an item of personal property which is used as part of a business or farm operation is not moved but is promptly replaced with a substitute item that performs a comparable function at the replacement site, the displaced person is entitled to payment of the lesser of:

The cost of the substitute item, including installation costs at the replacement site, minus any proceeds from the sale or trade-in of the replaced item; or

The estimated cost of moving and reinstalling the replaced item but with no allowance for storage.

In lieu of the payments described above, the business may elect to receive a payment equal to the average annual net earnings of the business. Such payment shall not be less than $1,000 nor more than $20,000. In order to be entitled to this payment, the State must determine that the business cannot be relocated without a substantial loss of its existing patronage, the business is not part of a commercial enterprise having more than three other establishments in the same or similar business that is not being acquired, and the business contributes materially to the income of a displaced owner during the two taxable years prior to displacement. The business is not operated at the displacement site or dwelling solely for the purpose of renting such dwelling or site to others.

Considerations in the State's determination of loss of existing patronage are the type of business conducted by the displaced business and the nature of the clientele. The relative importance of the present and proposed locations to the displaced business, and the availability of suitable replacement sites are also factors.

In order to determine the amount of the "in lieu of" moving expenses payment, the average annual net earnings of the business is considered to be one-half of the net earnings, before taxes during the two taxable years immediately preceding the taxable year in which the business is relocated. If the two taxable years are not representative, the State may use another two-year period that would be more representative. Average annual net earnings include any compensation paid by the business to the owner, his spouse, or his dependents during the period. Should a business be in operation less than two years, the owner of the business may still be eligible to receive the "in lieu of" payment. In all cases, the owner of the business must provide information to support its net earnings, such as income tax returns, or certified financial statements, for the tax years in question.

For displaced farms and non-profit organizations, the actual reasonable moving costs generally up to 50 miles, actual direct losses of tangible personal property, and searching costs are paid. The "in lieu of" actual moving cost payments provide that the State may determine that a displaced farm may be paid from a minimum of $1,000 to a maximum of $20,000, based upon the net income of the farm, provided that the farm has been relocated or the partial acquisition caused a substantial change in the nature of the farm. In some cases, payments "in lieu of" actual moving costs may be made to farm operations that are affected by a partial acquisition. A non-profit organization is eligible to receive "in lieu of" actual moving cost payments, a payment in the amount of $1,000 to $20,000 based on gross annual revenues less administrative expenses.

A more detailed explanation of the benefits and payments available to displaced persons, businesses, farms and non-profit organizations is available in the "Your Land and Highway" brochure that will be distributed at the public hearings for this project and will also be given to displaced persons individually in the future.

In the event comparable replacement housing is not available to rehouse persons displaced by public projects or that available replacement housing is beyond their financial means, replacement "housing as a last resort" will be utilized to accomplish the rehousing. Detailed studies must be completed by the State Highway Administration before "housing as a last resort" can be utilized.

The "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970" requires that the State Highway Administration shall not proceed with any phase of any project which will cause the relocation of any persons, or proceed with any construction project, until it has furnished satisfactory assurances that the above payments will be provided and that all displaced persons will be satisfactorily relocated to comparable decent, safe and sanitary housing within their financial means or that such housing is in place and has been made available to the displaced person.